Earth Games: The 1994 Lillehammer Winter Olympic Games, or the Failure of the Ecological Project

Thesis

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Link(s) to article on publisher’s website:
http://dx.doi.org/doi:10.21954/ou.ro.0000ee89

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Earth Games

The 1994 Lillehammer Winter Olympic Games, or the Failure of the Ecological Project

A thesis submitted in fulfilment of the requirements for
the degree of Doctor in Philosophy

by:

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PhD Program
September 2018
Figure 1: The Sports Pictogram on the Ski Jump Slope as Background for the Act of Ski Jumping
Source: Elton, L. and Moshus, P. (1995) 'Norwegian Olympic Design', Norsk Form and Messel Forlag, Oslo Credits: Jim Bengston on behalf of LOOC.
Abstract

The 1994 Winter Olympic Games, organised and held in Lillehammer, Norway, are often treated as a reference point for the commitment of the International Olympic Committee to sustainable development. Commentators recognised the embodiment of ecological concerns and aspirations in a unique staging of the Olympic ideal.

Through an architectural analysis of Winter Olympic Games, particularly the Lillehammer edition, this thesis argues that the event did not reflect concerns for the environment. It also did not relate to material ecology as defined and debated over previous decades in the United Nations.

Instead, the XVII Winter Olympics seem to have employed the environmental rhetoric of a Norwegian affiliation to Nature to affirm and re-establish the moral ideal of the Olympic Movement, which was damaged in 1992 when the Games in Albertville, France, were criticised as an ecological failure. Moreover, the event in Norway served to introduce the 1987 UN Report on sustainable development, Our Common Future, despite the geopolitical role of Norway as a leading agent in the international fossil fuel trade.

This research tackles problems associated with natural resource exploitation and how architecture is instrumental in legitimising environmental destruction. It foregrounds the disjunction between action and intention, architecture and politics, which can be read between the lines of political and design agendas. The lack of intersectional points between these categories is symptomatic of the absence of critical engagement of design practices with the fundamental issues associated with sustainable development: exiling architects to the role of spectators, heavily influenced by overwhelming political and economic constraints.
Acknowledgements

Firstly, I would like to express my sincere gratitude to my advisor, Prof. Marina Lathouri, for her patience, motivation, and advice. Her support throughout the development of this research was invaluable.

Besides my advisor, I would like to thank the tutors I became friends with, who I often consulted in moments of doubt. I would like to thank John Palmesino and Simos Yannas for their guidance and example during the past three years. I would also like to thank Tom Weaver for his useful comments on the research method. My sincere gratitude goes to Prof. Anthony Vidler for his insightful observations on the subjects debated here.

I would like to extend my gratitude to the staff of the Canadian Centre for Architecture, for their support during my stay as a resident in Montreal during summer 2017.

Moreover, this thesis would have been so much poorer without the help of the Architectural Association staff. I would like to thank Ed Bottoms for making the richness of the AA archive available to me. The infrastructure of this thesis was enabled by the responsiveness and availability of the AA Library staff. My gratitude goes to Eleanor Gawne, Aileen Smith, Beatriz Flora and Simine Marine; as well as Byron Blakeley, the keeper of the AA Photo Library.

Special recognition goes to architects Tom Wike and Niels Torp; and of course, to Tormod Holdbrekken, who provided access to the vast collections of graphic and written materials related to the Winter Olympic Games in Lillehammer. Their account of the facts preceding the event ensured the cohesion of the arguments presented herein. Their precious support facilitated this research and will certainly inform that which follows.

Next, I want to mention the contribution of Sir Norman Foster, whose ideas and example inspired the topic of this thesis. I thank Taba Rasti and Pablo Urango Lillo, as well as Juan Vieira from Foster+Partners, for allowing the dream of pursuing my studies to come true.

I thank my colleagues for their input during our presentations. Special appreciation goes to Yana Petrova, Anna Ulrikke Andersen, William Orr and Álvaro Velasco Pérez, for their comments and advice at relevant moments. I would also like to mention Ingrid Dobloug Roede for her valuable guidance during my research trip to the Norwegian capital.

My sincerest gratitude goes to my wife, Estela Noboa, who accompanied me in the final stages of this research. I met her in Montreal, a place of great memories. I would also like to thank my brother, Traian A. Popa, and my parents, for all their moral support and generosity over the years. And to my friend Stefan Vianu: I thank him for the valuable observations on the theoretical aspects of this thesis.

Last but not least, I would like to express my gratitude to Clement Chung and Saira Soarez from the Architectural Association, for their administrative support during the development of my research.
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Introduction

The 1994 Winter Olympic Games, organised and held in Lillehammer, Norway, are often cited as a reference point for the commitment of the Olympic Movement and the International Olympic Committee (IOC) to environmental protection. The organisers of the Lillehammer Winter Olympic Games (LWOG) recognised the embodiment of ecological concerns and aspirations in a unique staging of the Olympic ideal. Lillehammer 1994 could be considered to be the first and utmost expression of the concept of sustainable development, being instrumental in the enforcement of the 1987 United Nations Report, *Our Common Future*, in which the term *sustainable development* was introduced.

This study departs from the premise that from 1987 onwards, the organisation process of the Olympic Games in Norway overlapped with the propagation of the political discourse on sustainable development. The official global environmental agenda, Agenda 21, was presented in 1992 at the Earth Summit held in Rio de Janeiro, Brazil, less than two years before the inauguration of the LWOG. Preparations for the Games were at peak intensity, with the IOC and Local Olympic Organisation Committee (LOOC) pointing towards the importance of the event in terms of environmentalism.

In Article 27, *Our Common Future*, the Brundtland Report proposes a definition of sustainable development, linked to the balance between the needs of human generations coupled with the conservation of their quality of life and the availability of resources to satisfy them:

> 'Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs.'

This definition stands in apparent contradiction to the geopolitical role of Norway as a leading agent in the international fossil fuel trade. It will be argued that the phrasing in the Report, and the term itself, do not give any indication of how the goal of sustainable development can be reached, nor do they identify the responsibilities of the possible private and public actors involved. The relevance of this definition shall be highlighted in this research by the formulation and discussion of environmental questions which go beyond the physical limitations in time – the period around 1987 – and space – the Norwegian national borders – of the international sporting mega-event.

The research will draw on the hints available in the work of those researchers who proposed – if in a surprisingly brief manner – that the event was disconnected from the environmental concerns of the time. More precisely, the present research shall add, it might be argued, that the event did not relate in any way to material ecology, as the latter was defined and debated over preceding decades within the United Nations (UN). Instead, as the hypothesis of this thesis posits, the event seems to have employed the rhetoric of Norwegian affiliation to Nature, to affirm and re-establish the moral ideals of the Olympic Movement, and was used to downplay the intense criticism against international natural resource exploitation. In order to comprehend the context in which the bid was awarded and the organisation process was enacted by the LOOC just two years after the Olympic edition held in Albertville – unexpectedly breaking with the long-standing tradition of Winter and Summer Olympics being organised in the same year, significant disruptions emerge as the premises of the study.
Five Premises

First, the large degree of the IOC-led deterioration of the environment during the construction phase of the 1992 Winter Games in Albertville, which incurred massive criticism from international observers, seriously damaged the image of the transnational organisation. The intensely media-dominated event provided the ideal platform through which to disseminate virulent criticism from environmental organisations and the local population. Seen in this context, Lillehammer was the best option of re-establishing the moral values of the Olympic Movement as a key transnational institution. Evidence will be laid out to show that by relating the IOC to a country with a tradition of respect for Nature, its leaders were regarded as efficiently responding to previous criticism for mismanagement and widespread environmental destruction.3

The second premise in the thesis will depict the Norwegian state not only as enabling the international recognition of traditional national values such as respect for the environment; but paradoxically, also helping frame a context for the acceptance and encouragement of natural resource exploitation practices,4 as seen in the discourse of various politicians. For instance, Norwegian Foreign Affairs Minister Thorvald Stoltenberg linked terms such as ‘mining industry’ and ‘environmental concerns’, ‘growth’ and ‘sustainability’, providing a hint of the commercial purposes of Olympic Games.5 It will be argued that the organisers took advantage of the festive aura of the Games to orchestrate dynamic relationships between supply and demand of natural resources, played out on the international Olympic platform.

Third, the thesis shall reveal that the Games in Lillehammer were manipulated through the event’s Design Handbook which seems to have created the framework to enforce, as is customary in Olympic events, what were to be promoted as local values. In the case of Lillehammer 1994, as will become evident, the Lillehammer Olympic Organization Committee (LOOC) expanded the scope of this document and carefully crafted a cultural narrative, to be delivered via the event’s signage system to the international audience. Moreover, it shall be inquired whether the architects in charge of the venues and territorial layout of the Games imagined and built a setting which articulated these environmental aspirations internationally. The affiliation to Nature, characteristic of Norwegian architecture, was brought up in the event by the Lillehammer architects to create and communicate an excessively positive image of Norwegian culture.

The fourth premise lay in the failure of subsequent Games to replicate the high standard of environmentalism which Lillehammer supposedly represented. It shall be explained how Sydney 2000 became known as the ‘green wash’ when high expectations resulting from the International Olympic Committee’s (IOC) recently adopted Agenda for the Environment (1999) did not materialise. In addition to other shortcomings, the extensive scale of the 2000 edition appears today as a considerable burden to the city, especially in terms of a legacy that is costly to maintain. Moreover, authorities seem to have ignored relevant concerns raised in environmental reports, for fear of losing the bid;6 and the remediation process after the Games concluded was treated loosely by authorities.7 The thesis will further inform on London 2012 where environmental aspirations were scaled down at various stages, to the point where external environmental organisations, employed as consultants, were forced to report on the deficiency in nearly every sustainable goal set during the bidding process.8

Finally, although not a subject of detailed analysis in this thesis, the discussion will be led in awareness of the environmental debates encouraged by the UN before 1994. The
theme of the acute discrepancies between attitudes towards the environment manifested in the UN during the decades preceding the events in Albertville and Lillehammer – and especially in *Our Common Future* (1987) – and the reality of the 1994 Games and thereafter, will be shown to underscore the polyvalence and ambiguity of this edition of the Games. The UN had already promoted two major international conferences on the interference of humans in the environment, in Stockholm (1972) and Vancouver (1976), both of which had their origins in the so-called demonstration projects of the 1960s. This study attempts to argue that the shift from a highly applied approach towards ecological crisis to an increasingly politicised debate on sustainable development was facilitated by and reframed in the context of the 1994 Olympic event.

Given this, was the event in Lillehammer an attempt to expand the scope of the Olympic Movement and discuss, promote and channel awareness towards the ecological problems facing society at large? The unprecedented complexity of self-imposed environmental constraints certainly gave the event a distinctive character. However, as will be seen, the debate around natural resources exploitation and how architecture is instrumental to it can be challenged in the case of LWOG. It will be explained that it played no part in mainstream account of a well-managed, well-implemented, well-distributed Olympic event. Such a discussion would focus on the disjunction between action and agenda, architecture and politics which exists among the lines of political discourse and design principles. The lack of intersectional points between these categories in Norway in 1994 was symptomatic of a lack of engagement of design practices with the fundamental political issues associated with sustainable development; as well as the passive role of architects subjected to the pressures of political and economic agendas.

**Showcasing Sustainable Development**

The foundation of this study resting on the above premises leads the inquiry into two visions of sustainability mirrored in the event. On the one hand, sustainable development could be perceived as respect for the environment, corresponding to a set of ethical values informing geographical, social and climatically specific responses. This entails conservation of existing material and social conditions, and their deployment in the landscape to curb absorption of international global values and emphasise traditional Norwegian features. On the other, the political counterpart in the organisation of the Games identified sustainable development as an opportunity for growth. This thesis will later discuss the embodiment of expansive economic aspirations in the term ‘sustainable development’. It will then be argued that the term is oxymoronic, judging by arguments put forward by economist Nicholas Georgescu-Roegen, and later by members of the Club of Rome, according to whom development and growth are intrinsically unsustainable activities.

By the simultaneous enactment of these definitions of sustainable development, the 1994 edition of the Winter Olympic Games will be interpreted as an attempt to create a context for acceptance of *Our Common Future*, later translated into the UN’s Agenda 21. Global international organisations seek an association with sporting competitions in order to project their authority onto the wider public. As will be shown, the UN has never had a mega-sporting event such as the Commonwealth Games, which reinforce the identity of its member nations. Thus, Maurice Roche argues, the UN has attempted to express its aims and ideals by accessing the audience of the Olympic Movement.9

What shall be revealed as concerning, though, is that the UN Commission for Environmental Protection (UNEP), headed at that time by the Norwegian Prime Minister,
proposed a rather flexible, non-binding commitment to environmental protection; and the acceptance of diffused and relative developmental limits. In so doing, it effaced prior pessimistic, yet valuable scientific findings related to the environmental crisis that argued for the necessity to impose and safeguard very specific limits for growth and development; and replaced them with optimistic interpretations, which reassured consumers and provided confidence in the market economy.

The thesis will analyse the Brundtland Report and underscore its irrelevance, which is due to its large, all-inclusive yet ambiguous terminology, and lack of reference to the valuable ecological architectural experiments conducted in the period preceding its publication. In fact, the diminished relevance of the practice of architecture in debates around sustainable development is embodied by the Report. The root term, ‘architect’, appears only twice in the 300-page document. In addition, the radical ‘archi’ appears on just one occasion in the later UN document for sustainable development, Agenda 21 (1992). This justifies a more detailed investigation into the apparent complete disengagement of the politics of ecology with the practices of architecture.

A first expedite reading of the document reveals the absence of any proposition for material actions which would address the issues it meant to highlight. The contrast with the urgency, tone and form of the UN-enabled demonstration projects from previous decades is striking, which leads to the formulation of the following question: were the events in Lillehammer – and the subsequent Olympic enactments of Agenda 21 – efforts to follow up or distract the larger audience from the important questions raised by ecologists in the 1960s, 1970s and early 1980s? Could Lillehammer 1994 be interpreted as an attempt to discuss questions of social inequality, resource exploitation and sanitation associated with ongoing tensions in developing countries?

Furthermore, were the young architects in Lillehammer concerned with the wider issues of ecology such as energy, housing, extraction and distribution of natural resources, social and gender inequality, and developmental dephasing between the rich North and poorer South, or did they seek to give form to an architectural tradition that was deeply related to the local environment? The critical reinterpretation of the 1994 Olympic Games will be made in full awareness that Olympic mega-events reveal, enforce and project the specificity of local culture. In other words, the host country displays its most enduring, striking cultural features. The projection of an environmental agenda at a global level in Lillehammer was speculated by the organisers, including the architects who designed the venues. They used the visibility of this edition of the WOG to project their own architectural and cultural agenda onto the international scene.

The shift of attention to the Design Handbook put together for the event by Norwegian graphic designer Petter T. Moshus deepens the discussion of the use of the Brundtland Report to promote a national agenda. As will be argued, repetitive references to culturally and geographically specific elements, such as the graphic reinterpretation of ancient Norwegian cave paintings at Altafjord, makes the Handbook the local counterpart to the international Report on sustainable development. The drivers established by Moshus and his team for the iconography of the event can be read as an attempt to consolidate the local environmental narrative by means of design. However, disturbing, violent events, such as the deep social crisis in northern Norway in the late 1970s and early 1980s associated with the Alta River’s hydroelectric potential, are marginalised, leading to the question whether the event was an attempt to narrate an idealised history of continuous, harmonious inhabitation.
The thesis will also ponder if recourse to local materials can be considered an adequate response to the ecological crisis. The extensive use of concrete at LWOG, as well as the permanence and size of the Olympic venues, tense the relationship between the architectural programme and urgent environmental issues. To what extent did innovation in architectural expression and material production and consumption inform the ethos of these Games? This question challenges the appropriateness of Lillehammer standing as an emblem of environmental sustainability at the threshold of the twenty-first century.

The strong affiliation to Nature historically associated with Norway determined the selection of the country to host the Games. Before considering this, however, it is important to establish that Norway was not an active participant in the ecological encounters of the 1960s and 1970s; and there is little evidence of Norwegian architects being involved in them. An analysis of the Olympic architecture, and other projects by Norwegian architects such as Arne Korsmo and Knut Knutsen, shall reveal the extent of – or in fact the mere existence of – the commitment in Norway to the strong principles which had motivated international ecological debate before 1994. These debates emerged in North America, in the context of enhanced natural resource exploitation practices and post-colonial social discrepancies, far away from a yet modest Norway where petroleum was discovered only at the beginning of the 1970s.10

**The Ecological Project**

The ecological debates of the 1960s and 1970s, conducted in and around the discipline of architecture, become an important argument that questions the assumption that the Norwegian model for environmental protection was the most relevant one for the international community to embrace. Moshe Safdie, Buckminster Fuller and Alvaro Ortega, together with the Minimum Cost Housing Group, were concerned with the consequences of their designs at a global scale: interpreting contemporary forms of fabrication and construction, challenging social constraints and building standards, expanding the scope of architecture beyond political objectives and agendas. Did Lillehammer succeed in continuing the lineage of these values?

To be sure, the debates prior to 1994 were not perfect enactments of environmental virtues: for instance, Expo 67, held in Montreal in 1967, was entitled 'Man and his World', and centred on material and immaterial examples of the relationship of man with the environment. Although it received a record number of visitors, it was, to a large extent, a failure in ecological terms. Interestingly, the organisers seem not to have sought to conceal the tensions and frictions associated with the ecological debate – despite repeatedly facing protests and dissent before and during the event.

Moreover, the Buckminster Fuller inquiry into the extent and distribution of the natural riches of the planet, mirrored in the ‘World Game’, was largely overseen. The project was rejected as the main theme of the United States Pavilion of Expo 67, demonstrating that the event was not intended to offer a solution to the environmental crisis. Fuller’s project was aimed at an unprecedentedly large audience, and represented one of the first exhaustive inventories of natural resources around the planet. The Game became an important contribution to discussions of material exploitation and use of natural resources over subsequent years. That an architect and inventor created and fiercely promoted this exercise into one around sustainable resource management highlights the leading role of the profession in the ecological debates of the time.
Other pavilions at Expo 67, such as those representing various Canadian regions, discussed the topic uncritically; while the setting and construction processes of the venues strongly contradicted the idea of conserving the environment. However, it could be argued that the event added value to the ecological debate; and did not obstruct access to information. Additionally, through its design and construction process, it reflected the environmental paradox associated with mega-events. On the one hand, vast amounts of resources, to be consumed over a short period of time, were utilised in the design and building process, producing an unsustainable legacy. On the other, it raised awareness of global issues of planetary interconnectivity by laying out evidence that would provide the basis for future inquiry and criticism.

Two conferences organised by the UN, in Stockholm and Vancouver respectively, reveal the extent to which natural resource exploitation was a topic of interest to actors involved in the discussions. At the Conference on the Human Environment (Stockholm, 1972), the reactionary contribution by the Habitat Forum brought the problem of natural resource exploitation and social and gender inequality to the attention of the audience. In Vancouver, the political-environmentalist duo, Maurice Strong and Barbara Ward, argued for the requirement of limiting the extent of natural resource exploitation. In both cases, inequalities between a rich North and poor South were also subject to sharp inquiry and debate, resulting in action-oriented petitions and agendas.

The case of the Minimum Cost Housing Group at McGill University refers to the material environmental experimentation through architecture and by architects in the decades preceding the Olympic Games in Lillehammer. The founder of the Group, Alvaro Ortega, was a key member of the UN at that time. One of the Group’s declared aims was to facilitate low cost housing for the poorer south. To this end, sulphur brick experiments embodied the attempts nurtured within the architectural profession to address the ecological crisis at a global level. The designs proposed by the Montreal-based group explored new resources for building materials, as well as the use of solar and wind power to reduce dependency on costly infrastructure.

Another pioneer in this sense was Moshe Safdie. Exploring alternatives to concrete, his housing project at Expo 67 challenged contemporary building methods. Modularity was used in this project to attempt a reduction in building costs, making the model replicable in other, less favoured contexts. However, his concept of a ‘total environment’ raised concerns around urban inhabitation as well as human control over the environment. To what extent did the Olympic event held 27 years later steer attention towards the experimental role of architects drawing on the clarity and pragmatism of the international ecological debates of the preceding decades?

Architecture emerges today, contrary to previous decades, as a tool to render certain visions of environmental protection – which, more often than not, elude stringent questions on long-term protection or sustainable development. While other publications, some of which will be discussed in Part 1, follow ecological themes throughout successive editions of Olympic mega-events, the proposal in this thesis is to establish the agency of architecture and architects in influencing policy related to environmental crisis.
The Hidden Agenda

The thesis also attempts to discuss the means by which the ecological discourse is taken over by the industry which it criticises. This situation is even more relevant, as it is through the agency of architecture that this process is enabled. The absence of criticism of an architectural community eager to display local values on an international catwalk paved the way for the appropriation of the event by the Norwegian government and its economic agenda.

On top of the international programme embodied in the Brundtland Report and the national objectives enforced through local cultural agencies, there was a third, less visible agenda in Lillehammer 1994. The country’s historic affiliation to Nature constituted the ideal opportunity to legitimize practices of natural resource exploitation which had been so intense in Norway since the 1970s, when petroleum was first discovered: not as justification of environmental aspirations so uncharacteristic of the industry, but as an effort of identifying with and assimilating the values which fuel critiques of it.

The evidence proposed will scrutinize the extent to which the double standard detectable in Norway contaminated the Olympic event. On the one hand, the LOOC promoted a national imagery, embedded in environmental references through an architectural trademark of the historical and cultural affiliation to Nature. On the other, the geopolitical context – especially its rich natural resources – placed Norway among the leading extraction points, refining and distribution sites of petroleum in the world. This double standard, visible in both the organisational process and outcome of the 1994 Games, will be analysed through a geopolitical reading of the Norwegian natural resource extraction industry and trade. Were the 1994 Games assigned the role to reinforce a narrative which would uphold the paradoxical simultaneity of natural resource exploitation and conservation of the environment?

The thesis will be pursued in awareness of the fact that the 1994 Winter Olympic Games were assigned to Lillehammer against all odds, one year after the publication of the Brundtland Report, the sustainable manifesto of the United Nations. The head of the UN commission in charge of the research and publication of this agenda was Gro Harlem Brundtland, also Prime Minister of Norway, which leads to another line of interrogation to be pursued in this research: to what extent was the assignment of the Games to Norway a politically motivated decision?

Visions of Sustainable Development

It could be argued that the UN and the IOC required the perfect conditions in order to promote environmental ideals for the first time. An outstanding enactment of Our Common Future would motivate the representatives of future Olympic host cities to reproduce and strengthen the methods used and advertised in Lillehammer. The thesis will reveal that unfortunately, the marked tendency was that edition after edition have failed to build on the ideas advertised at Lillehammer, whether because of economic reasons, deficient planning or political unavailability. Assuming that the future failures of the IOC were impossible to predict at that time, the question of legitimacy of the choice of Lillehammer still stands.

By leaving aside the most urgent and difficult aspects of sustainable development, in Lillehammer, the UN and its executive branches produced an idealised but imperfect representation of what environmental awareness (and sustainable development) might mean. As will be shown, the architecture of the event, clean and elegant, integrated in the
environment and minimal, reflects this lack of awareness of larger issues. Given, however, the conclusions in Stockholm and Vancouver, how can it be assumed that the international community was not aware of the complex constraints related to the topic of environmentalism? A loose environmental agenda would enable resource-based economies to grow against a background of an apparent commitment to environmentalism.

Were the architects at Lillehammer aware of the vast network of interests penetrating the event? If so, would Lillehammer 1994 have been presented in the same way had its architects refused the role in giving an environmentally friendly appearance to something which fuelled precisely what the designs of their predecessors were supposedly against? Attempting to raise such questions in 1994 would have placed the discipline of architecture in a more influential position in terms of negotiating environment-related topics, building on the consistent legacy of the previous generations of ecologist-architects. Their eagerness to engage in the debates and their critical faculties would be put to good use by approaching contemporary ecological questions. Seen in this light, it shall be debated whether Lillehammer lost the power of representativeness for environmental awareness and sustainable development. Does the event only remain a compelling example of how, despite measures to protect and enhance the environment being taken, architecture and design repeatedly fails to effectively address such issues?

The specific analysis by Hart Cantelon and Michael Letters of the Games held in Albertville and Lillehammer will be discussed in Part 1 of the thesis, in parallel to the more general, but no less valuable, tracing of both events by Jean-Loup Chappelet. The identification of architectural, urban and territorial themes within the genealogy of Olympic mega-events will reveal that Lillehammer was indeed essential to an accurate depiction of the evolution of the political approach towards international ecological concerns. Whether it reached the expected standards remains to be determined in the following sections.

Part 2 will inquire into the nature of the environmental standards against which the mega-event was organised. Questions regarding the double standard by which politicians, environmentalists and oil companies operate in respect to the ambiguous notion of sustainable development, will be posed. In addition, questions regarding agency and object in the creation and supervision of fulfilment of these standards will emerge as a necessary critique of the event and its adjacent divergent topics, namely, the Norwegian oil and gas industry with its powerful international lobby, the invention of sustainable development as an exclusively Norwegian political notion, and Norwegian national identity.

The latter, national identity, was central to the organisation of the event and articulating its architectural expression. The notion of self-sufficiency, a fundamental national Norwegian characteristic of the pre-oil era was foregrounded, although not explicitly, as the main argument of the bid targeting sustainable development. The origins of a vision of affiliation to land shall be traced back to the notion of self-sufficiency, which draws on historical cases such as the work of Norwegian architects Knut Knutsen, Arne Korsmo; and more recently, Sverre Fehn. The influence of past generations on the architects involved in 1994 will be evaluated through analysis of oral sources and projects. This will reveal a need to contemplate several problems raised during the design and building processes of the event. In this way, the ambitions of the architects and their role in promoting a national agenda on the Olympic stage will be exposed. The aim in the final
Part therefore questions Lillehammer as an attempt to project and consolidate a local vision of sustainable development.

Moreover, as far as the specific case of the Lillehammer Olympics is concerned, the role of design at the intersection of economic, political and cultural interests is submitted for debate. Thus the question of the failure of the ecological project becomes intrinsically associated with this specific historical period. Does 1987 mark the political schism with the fundamental concerns of the ecological crisis; with architecture following this trend seven years later? By rejecting the main themes of the ecological debates of preceding decades, did the architects in Lillehammer attempt to reinvent the ecological project by interpreting those features which have the potential to function as a self-regulatory mechanism for the environment?

The diagnose of the architectural practice at the inflection point of the ecological project – the year 1987 – will be put up against contemporary concerns about the role of planning and architecture in the attempts to resolve the environmental crisis. The conclusions of the thesis will mark the connections between the findings resulted from the critical analysis of LWOG and two connex issues: first, the debates around the links between capitalism and the ecological crisis and second, a survey of potential solutions encapsulated in the indigenous world-view of the first nations in Canada and elsewhere. The conclusions will also reveal the importance to grasp the precedents, among which the case of LWOG looms large, in the understanding of that which is at stake in the environmental crisis and global warming. The urgent requirement to clarify the historical context, with its positive and negative contributions to the debate, will be vocally expressed in six utterances.

The conclusions are also written in the hope to convey the importance of the language used in defining the terms around the ecological crisis. The thesis shall not attempt to provide definitions but to reveal not very obvious, yet highly informative narratives of environmental awareness. Adding up to the discussions about terms like ‘development’, ‘growth’, ‘green’ and ‘capitalism’ from the previous Parts, the conclusions will continue to deconstruct the meaning attributed conventionally to such notions. Terms such as ‘progress’, ‘planning’, ‘nature’, ‘environment’ among others, are explained in the context of their use. If wrongly employed, the are likely to fuel the controversy around the environmental crisis; if used correctly, they might as well help establish the agencies able to provide significant progress in the production of a new ecological project.

It needs to be clarified from the start that the thesis does not aim to discuss that which Lillehammer supposedly stood for: its expression of Norwegian national identity and apparent embodiment of the IOC’s environmental concerns. Instead, counter-intuitively and opposite to the critical material produced so far by other researchers, these issues will be decanted in order to foreground that which was not explicit in the event; in other words, that which the event did not describe, discuss or emphasise: the intimate dependency of the Games – their premises, organisation, outcome and legacy – on the Norwegian natural resource exploitation. Information is hence contextualised within the contemporary Norwegian framework, highlighting the discrepancies between intention and action; between that which was promoted as noble environmental goals extracted from closeness to Nature of Norwegians, and the concealed agenda of enforcing and legitimising an agenda of natural resource exploitation.

An attempt is therefore made to highlight the dangerous confusion which can easily occur between environmental protection and economic development under all-encompassing
notions such as sustainable development. The thesis will signal that it is necessary to
distinguish clearly between the two categories. The former is linked to limiting resource
exploitation and consumption; the latter pushes fiercely to eliminate barriers to
development and economic growth. The discussion follows up on the antagonism of these
two categories and attempts to establish a precedent for avoiding the substitution of one
for the other.

The thesis aspires to a certain degree of originality, as it brings together two bodies of
research around the subject of Norwegian national identity. First, the sum of publications
of ethnographic character which praise Norwegian closeness to Nature. These are usually
drawn around the 1994 Winter Olympics, and are the most visible, and indeed first
interpretation of these values at global level. On the downside, they tend to play down the
controversial aspects of the event, mentioning only in passing the wholly contradictory
role of Norwegian oil interests and international lobbying. The second group of studies
focuses on more critical depictions of the Norwegian state that dismiss closeness to
Nature as an antiquated attitude, no longer reflective of reality. In their ecological ethos
and environmental awareness, these latter studies tend to omit the case of Lillehammer;
by doing so, they only partially depict the complexity of the problem of Norwegian
identity.

In fact, both bodies of studies are partial and imperfect interpretations of the complex
contrast between the assimilation of values around modernity and a still powerful
affiliation to tradition in Norway. It is hoped that, by bringing these markedly divergent
interpretations together, this study may get a step closer to doing justice to those who
strongly believe in national identity, as well as those who lead a fierce battle against the
consequences of natural resource exploitation – not least, in climate change and
environmental degradation.

This work, then, attempts a critical history of LWOG. This endeavour is not the result of a
continuous, majestic surge towards a legendary liberation through the breaking of
oppressive chains, but a more modest unrest against ongoing misunderstandings of the
historic significance of the Lillehammer Olympic Games coupled with the ambiguity of
development in a context of environmental sustainability. The work here attempts to put
together the biased, fragmented interpretations described above. While some
researchers argue for the relevance of the 1994 Games in terms of developing thinking
around sustainable development and its integration within the Olympic Movement,
others review its features objectively, without emitting judgement. Alluding to Nietzsche,
while the former might be considered under the monumental category of the history of
sustainable development, the latter are mere antiquarians of a historical event.

For this study, it has been considered necessary to add a critical interpretation of the
historical evidence by emphasising the social-environmental and economic double
agency detectable in 1994.11 This absence fuelled the interest and personal motivation
in pursuing the study of the Lillehammer Olympic edition. The initial interest in means of
displacement in alpine settings and their environmental impact led to the realisation of
the importance of Winter sports in the experimentation with technologies of
environmental manipulation. As the most emblematic manifestation of Winter sports,
Winter Olympic Games provide the context for the intersection of human aspirations,
environmental threat and capital movement and accumulation, all of which are
ingredients in the quest for environmental equity. Seen from the vantage point of
environmental inquiry, the relatively limited engagement of historians with the 1994
LWOG appeared contradictory, offering the grounds for a survey of the material related to LWOG. The Master thesis preceding this doctoral research laid out the array of clues highlighting the unpublished architectural drawings and visual material corresponding to the conception and interpretation of the event. This, in turn, created the necessary conceptual basis for a critical inquiry into the historical connections between the establishment of political environmental terminology and the architectural expression of the event. The ambition in the following Parts is to reveal how the specific geographical and national context contributed to the way the environmental crisis is portrayed today, on the assumption that the Olympic edition from 1994 hosted by the Scandinavian country represented the first architectural enactment of the political appropriation of narratives of ecological pacifism.

It is also hoped that broader issues related to the environmental crisis will surface. By revisiting interpretations of the concept of sustainable development, the research brings forward concerns associated with environmental degradation and how architecture is instrumental in legitimising and favouring often over-simplified, optimistic political interpretations. This work foregrounds the disjunction between action and intention, architecture and politics, which can be read between the lines of political and design agendas. The lack of intersection points between these categories is symptomatic of the absence of critical engagement of design practices with the fundamental political issues associated with sustainable development: exiling architects to the role of objective spectators, heavily influenced by overwhelming ideological and economic constraints.

The main objective is to reclaim the architectural relevance of the historic moment represented by the LWOG. The research aims to inquire into the moment of a violent shift within architectural practice: from active involvement in detection of and solution to environmental issues, to apparent disengagement from ecological matters mainly because of economic and political factors. It argues that Lillehammer represents the moment of inflection, setting the practice apart from an ethical approach to environmental problems, drawing it closer to aesthetic interpretations of it with only symbolic, if any, relevance. Moreover, it unpacks the initial ways in which the controversial notion of sustainable development was assimilated by architectural practice.

Finally, the project proposed here is intended to provide an understanding of the conditions under which architects and architecture can become the disempowered medium that projects positivistic environmental interpretations of the notion of sustainable development to an international audience amid a coordinated effort orchestrated by transnational organisations such as the IOC. The research is significant inasmuch it sheds light on the fundamental role of the architects in representing the environmental crisis. In opening up a new platform for academic debate not previously touched upon in the literature, it appears that the architectural design process of the event provided the stage on which fundamentally distinct attitudes around environmental questions came together. These will be gradually revealed in the thesis.

Moreover, the work's originality resides in interpreting the event as a representation of Norwegian architectural environmental values, to the satisfaction of the IOC and the LOOC; but conveniently channelled by the international community and the UN to enforce a positivistic interpretation of the ecological crisis. The research is also relevant to the history of the environmental controversies associated with Olympic settings and
encouraged by the Olympic Movement – as it will demonstrate that Lillehammer seems to have proven rather closer to preceding failures than a successful solution.

The reader might notice the limited use of images especially in the first two Parts of the thesis. The text, written in the spirit of the political document it dissects (the Brundtland Report) rejects the embellishment of the situation described (the ecological crisis) through visual representation. It is hoped that a textual description of the contexts, situations, disposition of objects, equipment, infrastructure and buildings could replace the requirement for their visual, yet imperfect, representations. The addition of colourful, graphic and visual representations would only repeat the information that can be extracted from the text. The aims of such methodology of use of graphic information was to attain a degree of clarity of the message and to hint towards the dissemination of the issues discussed in a wide-spread, non-specialised language, avoiding the specificity of architectural representations, the tools for the understanding of which are available to a limited section of the targeted audience. Moreover, since the thesis is intended for a wider audience than the architectural or planning communities, a quest for simplicity is therefore tantamount to its conception.

This decision becomes an essential part of the argument exposed: embellishment through representation plays down the urgency of the environmental issues that the text describes; moreover, addition of numerous images limits its audience. In the context of the work proposed herein, sections, plans, photographs and diagrams are necessary inasmuch as they convey new meanings to the problem of political interpretation of the environmental crisis. However, this is often not the case, as, for instance, the reproduction of a projection in plan of the drop-shape ski-jump in Lillehammer emphasises an elegant design decision, but conceals its environmental impact. Conversely, it could be argued that a diagram showing the juxtaposition of the political arguments made around density and distribution is important to the proposed discussion.

Through analogies and codifying, graphic and visual material becomes an iconic bearer of misguided hopes in architecture as a rich unexploited field of solutions to the global crisis. If the scope of the thesis was a review of the relevant graphic and visual material produced on the occasion of the LWOG, then the deployment of any clue highlighting the abundance of such important, yet unpublished material would be meaningful. Nevertheless, since the argument here is not a survey of the intentions and aspirations of the architects of the event, but the Olympic edition’s relevance to the contemporary political debates, the array of criteria for selection of images shrinks down to the following: relevance to the constructive sequence and design of the buildings (sketches, drawings of the venues etc.), supply of alternative narratives of environmental protection (such as the proposal for the Olympic site by Mjelva), detection of visual inaccuracies regarding the declared environmental and poetic interpretation of the relationship of the built object with the environment (site-photos of the Hamar Olympic arena), emphasis on essential characteristics of the Norwegian notion of self-sufficiency (photographs and drawings linked to Norwegian tradition), illustration of the most important arguments (such as the graphic interpretation of the cave-paintings at Altafjord) and, finally, relevance of the visual or graphic element to the points made in the thesis (for instance, the site-plan of the Canada Olympic Park in the first Part which works jointly with the distribution schemes of LWOG in the third Part).
Lastly, by using very few images – which apparently contradicts a thesis proposing the architectural discussion of the implications of an international notion such as sustainable development – a limitation of the resources employed to the dissemination of the work in a spirit of material economy was also sought. The document is designed and printed in black and white to reduce the cost in energy and materials employed to its output. This is not to maintain that this attempt has reached its highest expression in the work. Nor should it be argued that the proposed method is the highest expression of economy of means. Such an intention shall be explored continuously in future work which will aspire towards clarity and the best possible compromise between editorial requirements of printed documents and the minimum use of resources in the process. Hence, occasionally, unpublished architectural material such as photographs of Olympic sites produced during the building process of the event and afterwards, sketches of various venues and territorial design schemes and shop drawings from the building process, made their way into the thesis as an indication of the amount of evidence still unscrutinized by sports historians, yet able to encourage revolutionary readings of sports mega-events.

Other sources such as texts describing the projects and event, provide evidence of a specific architectural agenda coordinated at a national level though the Olympic Design Handbook. This thesis will use such evidence as a form of inquiry into the inconsistencies between the declared environmental aims of the Games, their implications and their effects. The material will be employed as source for a forensic, deductive, long overdue architectural inquiry into the role of the profession in promoting environmental values. Active research of this material thus became the main source of evidence, on which the basis of the research topic was defined. Periodic trips to Norway and access to archives enabled a holistic understanding of the contemporary Norwegian economic, social and cultural context. Access to the archive at the National Museum in Oslo, the author’s participation as a tutor in the After Belonging Academy in Oslo, as well as his work researching the UN’s involvement in the ecological debates of the 1960s and 1970s at the Canadian Centre for Architecture in Montreal have progressively revealed the complexity of the issues described.

The findings inscribe themselves in the rhetoric around the notion of sustainable development, raising awareness on the contradictions embedded in this term. Finally, this work could encourage debate on the importance of architecture in building a relevant critique of apparent solutions to present environmental issues. Updating the architectural importance of the 1994 Lillehammer Olympics can inform the work of commissions associated with institutions such as McGill University in Montreal and the Royal Institute of British Architects (RIBA) in London; and encourage other ones, such as the Architectural Association School of Architecture in London to establish groups of research into the role of architects as important agents in a productive, meaningful discussion of environmental issues that encompasses their political, social and economic impact.
Notes

1 Evidence on the association between Lillehammer and the UN agenda for the environment, set out in the Brundtland Report (1987) and Agenda 21 (1992), is abundant in academic writing. The entire list of books and articles on the topic can be found in the bibliography. Among these, Roche, M. ‘Mega Events and Modernity: Olympics and Expos in the growth of global culture’ (London: Routledge, 2000); and Horne, J. and Whannel, G. ‘Understanding the Olympics’ (Abingdon, Oxon; New York: Routledge, 2012), stand out.


4 A distinction needs to be clearly marked between fossil fuel and natural resources. It is seen in this study as a relationship of inclusion. Fossil fuels such as gas, coal and petroleum belong to the broader spectrum of natural resources, among which one can count precious stones, wood, etc. If the Lillehammer Winter Olympics are relevant to the subject of natural resource exploitation, it is because of how they approached the subject of those natural resources which, when employed in industrial production cycles, release carbon dioxide into the atmosphere. The subject matter of the ecological crisis encapsulates fossil fuels as one issue associated with human inhabitation of the planet; but it must be stressed that this is not an exclusive focus. Alongside the problem of global warming and climate change, triggered, as most argue, by the release of carbon dioxide into the atmosphere, ecologists deal with other questions such as deforestation, fisheries, population growth, racism, feminism, etc. The discussion in this study focuses mainly on fossil fuels.


10 According to John McHale, Norway was exclusively reliant on hydroelectric power prior to that point, which contributes to the opinion formulated in this thesis that the reaction to intense natural resource exploitation was modest. McHale, J. (1971) The Ecological Context, London: Studio Vista Limited, 123

11 “Each of the three kinds of history will flourish only in one ground and climate: otherwise it grows to a noxious weed. If the man who will produce something great has need of the past, he makes himself its master by means of monumental history; the man who can rest content with the traditional and venerable uses of the past as an “antiquarian historian”; and only he whose heart is oppressed by an instant need and who will cast the burden off at any price feels the want of “critical history”, the history that judges and condemns”. Nietzsche, F. (1949) The Use and Abuse of History, New York: Macmillan Publishing Company, 17
Part 1

Visions of Environmentalism and Winter Olympic Games
WOG as Designed Environments

As is characteristic of Olympic events, the Lillehammer edition soon faded away from outside daily discussion after its conclusion on 27 February 1994. Moreover, its territorial layout and architectural expression were never the object of exclusive and detailed academic scrutiny. This part will first illuminate the lack of precision of the arguments entertaining the idea of an environmentally aware Lillehammer Games. The assumption will be challenged that these Games in particular managed to provide a clear demonstration of such an ambitious, yet unrealizable project.

The idea proposed by this research raises awareness of an architectural and design component to the arguments entertained by Olympic historians. While other researchers highlight the conditions for sporting events to be organised within the Olympic framework in a way that is generic and unspecific, this study dwells on the qualities of the architectural setting, concepts and objects to highlight the important role played by the architects in the making of such events. This is not only a methodological difference in respect to the critical literature on the Olympic Games; but involves reading these phenomena from the vast vantage point of political and social forces and, with equal importance, from the material, more specific architecture and design. Thus, it can be seen that Winter Olympic Games engage a variety of issues related to material alterations of pre-Olympic conditions. These are drivers of this study’s reflection on the degree of environmentalism displayed in 1994 in Norway.

During this process, a complementary reading of the facts presented by Olympic historians will be provided. This is not to challenge their observations – the value of which will not be contested – but to build up momentum for a revisiting of the Lillehammer Olympics case. The unsatisfactory interpretation of this event by Chappelet, and other critics such as Gold and Gold as well as Cantelon and Letters, lays the foundation of this study. Their readings are tangential to the main issues and fail to pierce through the constructed environmental image of the event. The problems at its core are deeply troubling and must be revealed in order to do justice to the less advertised, yet more honest environmental attempts within the Olympic Movement before and after Lillehammer.

The repeated claim about Lillehammer – that it represented ground-breaking environmental concerns within the Olympic Movement – in fact occurred recurrently regarding most preceding WOG. First, the themes discussed from 1924 until 1992 alluded to problems associated with the contrast between large infrastructural projects and *closeness to Nature* inherent in the consciousness of the inhabitants of mountainous regions, where the Winter Games are organised. This was arguably the most distinguishing trait in Lillehammer. Second, issues of *locality* lead to increasing problems of *density of venues* and *distribution* of spectators in temporary accommodation throughout the Olympic settings. The discussions around Lillehammer 1994 only reiterated what was already very well-rehearsed. Third, the problem of Olympic *legacy* was given both positive and negative embodiment at Olympic events up to Lillehammer 1994. The relative success of the Norwegian event was not at all unprecedented.

Maybe the most important evidence sustaining the thesis of the environmental precedent within Olympic Games is that in 1972, formal claims of adhering to environmental
standards were being made by Olympic bidding teams. The local promoter of Sapporo 1972, for instance, who was the head of Hokkaido Comprehensive Development Institute, a former sportsman and engineer, ‘promised to develop his region while protecting its natural environment.’ This is the first instance when explicit reference to the protection of the environment was made by an Olympic bidder.

In what follows, the Winter Olympic editions up to Lillehammer 1994 will be discussed from the perspective of their insertion within material environments. Thus, this research will engage with four aspects which are essential in the architectural reading of the interaction between the processes associated with Winter Olympic Games, and the material conditions within which they are inserted. Notions that will be discussed are: density of Olympic venues in the opposition between compact and decentralised event schemes; localization as the choice between urban and non-urban settings; legacy for the event’s potential for reuse; and closeness to Nature in the various forms within which it has been understood throughout the editions leading up to Lillehammer. In this way, the study will gather momentum to engage more fully with the Lillehammer Games in understanding what was at stake in the environmental reinvention of the Olympic movement.

*Ecology, Conservation, Development, Landscape and the WOG*

Many of the studies on Lillehammer considered by this thesis praise the environmental awareness of the organisers of the XVII edition of the Winter Olympic Games. Cantelon and Letters uncritically assess the environmental results of Lillehammer, arguing that as far as mega-events go, the Lillehammer Games were an outstanding success, organizationally, and for the enthusiastic support that the Norwegian population extended to the athletes, but mostly because of the strict reverence shown to, and the preservation of, the environment. Expressions like *outstanding success*, *enthusiastic support*, as well as a *strict reverence* towards a non-defined term – *environment* – are problematic. This is the product of excessively positivistic readings of the Norwegian event; and most importantly, the misconception that the idea of preservation of a pristine environment is the only sufficient condition to fulfil in tackling the environmental crisis. As will be shown, Cantelon and Letters are not the only ones to fall into a trap intended to seduce the broader public by means of projections of idealised natural environments.

While focusing on the accomplishments of the event in Lillehammer, in “Bring it Under the Sustainability Umbrella”, John and Margaret Gold acknowledge its hijacking by the Norwegian government, who, they claim, transformed it into “*a showcase for its environmental policies*”. Within this frame, they highlight the five so-called *green goals* added after Lillehammer won the bid:

Pursuit of these goals directed the Organizing Committee to increase international awareness of ecological questions; to safeguard and develop the region’s environmental qualities; to contribute to economic development and sustainable growth; to adapt the architecture and land use to the topology of the landscape; and to protect the quality of the environment and of life during the games.

In all cases, the criteria determining how regional environmental protection may contribute to tackling ecological crisis, establishing what sustainable development might mean, and why it is important to develop architecture in accordance with the topology of the environment, are not truly worked through. Moreover, associating a consumption-
oriented Olympic event fomenting growth, development and, above all, competition among individuals and nations, with the mission of increasing awareness towards ecological questions, is highly problematic.

Most of the above formulations remain vague. They do not define what environmental qualities signify and do not assign responsibilities: who will be held accountable for what? This leaves the question of environmentalism open to interpretation and stalemate; and problematises the term *sustainable development* and its scope. Furthermore, the five principles of the LOOC were too general and unqualified to sufficiently define sustainable development and begin indicating a response to the ecological crisis.

These points are also discussed by Jean-Loup Chappelet:\(^8\)

Lillehammer went beyond the concept of environmental protection and towards that of sustainable development, as emphasized in 1992 by the IOC in a statement of principle that was adopted by its executive board and drawn up by Canadian member Richard Pound.\(^9\)

However uncritical this affirmation might be, Chappelet brings the distinction between the notions of environmental protection and sustainable development into the foreground. Other critics assume that the two notions stand in the same category – but there are fundamental differences, on which Chappelet unfortunately does not elaborate.

What is understood by *environment* in this thesis is the totality of the elements (natural, artificial) and conditions (social, political) influencing, whether independently or jointly, the material outcome of every interaction taking place with, within and between them over time. Zardini and Bratischenko propose a sensibly similar definition of the term *environment*. According to them, it implies

a large conceptual landscape marked by different ideas and contradictory interpretations and inhabited by new problems that we must learn to accept as inevitably related to an irreversible condition.\(^10\)

The same is valid for the terms *sustainable development*, *sustainability*, and *ecology*. They all hang on the strands of time and describe processes rather than states. The conditions that define them vary from one moment to another. Moreover, the terms seem to acquire various meanings depending on the agency of their definition.

However, it must be assumed that while environmental protection refers to the sum of actions aimed at a minimum impact on the environment, such as the insertion of a building or a piece of infrastructure, sustainable development stands for a broader array of activities, the purpose of which is progress and growth in awareness of protecting the environment. Seen in this way, the two notions stand at opposing ends on a virtual scale of action. While one points towards degrowth or conservation and subtraction, the other entertains speculation on the prospects of expansion and addition.

Therefore, it may well be that the view of success attributed by Cantelon and Letters is a consequence of the limitations implicit in the evaluation parametres employed to interpret the event’s environmental qualities; however, these operative environmental criteria are not exhibited as such and are not discussed. As a result, the assumption of success is not questioned or critically associated with one or another relevant actor in the organising phase of the event. Cantelon and Letters limit themselves to acknowledging that the “local initiative of Lillehammer has become the global policy that all future Olympic Games organizing committees must follow if they are to win the bid to organize the
In other words, the Lillehammer Olympic case is accepted as outstanding because it was denominated as such by the IOC and referenced as a model to follow for future Olympic bidding cities.

This is a far-fetched interpretation for there are fundamental distinctions between environmental protection, requirements posed by ecological crisis and possible solutions in sustainable development. For example, vital components of sustainable development, such as questions around global hunger, poverty, racial, gender and social inequalities, energy management, consumption etc., were neither explicitly mentioned nor addressed in the implementation of the event. In fact, it was organised in a setting that would guarantee its success, largely due to Norwegian culture’s well-known environmental traditions.

The environmental ambitions exhibited at Lillehammer were a consequence of the frustration within the IOC at the failure of the preceding Albertville Games. Emerging international pressure to incorporate principles of environmental protection only emphasised the urgency with which the IOC needed to adapt. Cantelon and Letters fail to see the bigger picture and end up praising the IOC for putting “in motion its significant transnational muscle (economic and political) to build upon the local success of Norway”. It will be shown that this is not the case; the questionable success of the event was in fact the result of international projection of Norwegian national identity. Furthermore, the IOC did not manage to properly apply the experience acquired in Lillehammer to good use at its following Olympic editions. Positive environmental initiatives after 1994 were superseded by consumerist themes.

Cantelon and Letters raise the question of the dissenting opinion during the organisational phase of the Games, especially the moments after winning the bid. According to them, the protests organised by a number of Norwegians “vehemently opposed to the Games” were dismissed. Instead, the authors side with the majority of Norwegians, who embraced the Games under the condition that the environment – referred to as sacred – be preserved. Moreover, they observe that the IOC had “little patience for those who might suggest a compromise on environmental issues”. Regardless of the accuracy of these observations, the two researchers do not question the reasons fuelling criticism of the apparent commitment towards the environment, which were so abundantly manifested in many institutional channels in Lillehammer.

Indeed, they fail to see what constitutes the proposal discussed here: total commitment to the environment was a product of national identity management. The spectacle associated with mega-events as well as the resources allocated to enact such occasions enabled the transmission at an international level of these national aspirations. However, these cannot stand as representative of environmental concerns, nor can they be regarded as a model or solution to the ecological problem, as Cantelon and Letters seem to imply. Instead, the idealised image of an architecture inserted in pristine environments is meant to distract the unwary audience from practices of a more terrestrial nature: namely exploitation and commercialisation of abundant amounts of natural resources. Very few references to the oil agenda are found in the studies produced around Olympic Games; and more particularly, the Lillehammer winter edition. Rendering an idealised environmental image of Norway in 1994 became a means to distract from the underlying exploitation of natural resources. The Norwegian government, as will be discussed later, was and still is the object of intense criticism for its reliance on fossil fuel, and the arms trade. However, surprisingly, this is only barely touched upon and seldom questioned.
Despite not recognising this environmental and ethical dilemma, Gold and Gold back their claim regarding the environmental awareness of the Lillehammer organisers with examples from the design phase of the event. They observe that the organisers decided to displace the Olympic arena in Hamar in order to diminish the impact on a protected area for migratory birds. They refer here to the Hamar Olympic arena which, following the intervention of the environmental division set up specifically for the event, was moved to spare a portion of land that is used by migratory birds at particular moments every year. However, this example is mentioned in nearly all literature on Lillehammer: raising doubts on whether there were any other similar cases. Further research reveals that the controversial repositioning of the sports venue was a much applauded political move, designed to reach an agreement between opposing political agencies involved in the Games’ organisation.

This thesis also raises criticism of the relative lack of engagement in relation to the planning modifications. For instance, it is hard to believe that 50 metres was sufficient to allow Arctic birds to land in the vicinity of what remained a very large venue, the source of significant air and acoustic pollution. It is hard to believe that a row of trees planted in the venue’s vicinity would limit the impact of these factors. Similarly, the replanting of blue anemones found on the site where the ski jump at Kanthaugen was to be built, or the close monitoring of the trees around the venue and the important fines instated for their protection, are instances of questionable environmental benefit.

Similarly, Essex and Chalkley limit themselves to only noting that “attempts to incorporate environmental sustainability into the planning of the Olympic events have . . . received criticism from some quarters as essentially shallow public-relations exercises.” Upon investigating the source mentioned, Helen Lenskyj’s Inside the Olympic Industry: Power, Politics and Activism, a very critical stance towards the Olympic family is revealed. Helen Jefferson Lenskyj shows that despite the persuasive rhetoric, most aspects of the Olympics are organized to maximize power and profit rather than to promote the welfare of individuals and groups engaged in sport as a healthy and fulfilling human activity.

The organising process and outcome of the event is also symptomatic of a great deal of confusion still present in today’s portrayal of the ecological crisis. The belief that conserving the natural environment through architecture and social practices, however marginal and imperfect their enactment, can resolve the increasing degradation of the quality of the material environment remains the excuse for uncanny practices of natural resource exploitation backed by political action. Lillehammer is not a good example of the environment being spared important damage associated with the Olympic experience and mass influx of tourists. The 1994 edition of the Olympic Games was, rather, an illustration of that which needs to be avoided if the goal is to offer a solution to the environmental crisis. It should also be highlighted that in Lillehammer sustainable development, in itself an oxymoron, was confused with regional development, which should be dissociated from the environmental aims so proudly advertised.

Before 1994, environmental concerns regarding the Olympic Games emerged spontaneously, often promoted by local associations and international environmental groups. It occurred in response to transformations of the environment required for staging complex events in remote locations, often protected by national or international agreements and regulations.
**Activism within WOG**

Hence, the first environmental measures were taken in the Olympic Movement not in consequence of the organisers’ environmental concerns, but of political pressure from environmental groups. They often acted as a regulatory agency between the interests at play in the organisation of Olympic Games, and the environment within which they were organised. These groups of international protesters often found an ally in the local inhabitants of affected regions. Together, they were perceived as damaging to the Olympic Movement’s message, which led to increased resistance to their arguments and recommendations.23

In certain cases, their influence played an active role in the protection of the environment: such as during the preparatory phase for the Lake Placid Olympics, when the Association for the Protection of the Adirondacks successfully opposed the construction of the bobsleigh run. Alternative solutions in compliance with protection of the site by New York State law were ultimately found.24 Moreover, the bid by Banff, Canada, for the 1972 Winter Games was strongly opposed by Canadian environmental groups on the grounds of extensive damage to the environment.25 The reaction in Banff left the IOC without alternative options; it eventually assigned the Games to Sapporo, Japan, the only remaining bidder.26

Likewise, the Games in 1976 were assigned to Innsbruck, Austria, after the failure of Denver, USA. The citizens of Denver opposed the bid and protested in large proportion against the allocation of public funds. Their motivations, apart from economic concerns, were also of environmental nature. The unfavourable internal regional referendum was a direct consequence of concerns over “environmental impact on fragile mountain zones”27. Petitions organised at both city and state level were initiated by a group named Citizens for Colorado’s Future, and supported by a large proportion of the voting population.28 This constituted proof that mega-events can be controlled, and there are mechanisms in place to limit their influence on the environment. Following rumours regarding the large costs associated with the previous edition, 78,000 signatures, over double required to forbid further spending for the bid, were gathered.29

The bids of Davos and St. Moritz, and that of Chur and Arosa for the 1988 Winter Games, are also telling in this sense. The citizens of the Swiss canton, Graubünden, were against the Olympic candidacies following a referendum on the basis of ecological and cultural concerns.30 Moreover, the 1976 Olympic Games bids by Zürich-Hochybrig and Interlaken were rejected in their most incipient forms on similar grounds.31

During the 1980 Olympics, hosted by Lake Placid, USA, concerns over ecological aspirations were raised regarding the proximity of the main venues to Adirondack Park.32 The Mount Van Hoevenberg bobsleigh run, the purpose built luge run, the tracks of the biathlon and cross-country disciplines, and the downhill runs, were situated within the boundaries of the Park.33 Despite the task of building and managing them falling under the remit of the New York State Department of Environmental Conservation, which might have been expected to rise up to its legal responsibilities, environmental organisations, in their constant mistrust, raised considerable opposition to the project. It is worth mentioning within the scope of this thesis, that in their contestation they dwelt on material features of the venues such as height, area and size.34 Criticism of the ski jumping arenas35 concerned excessive height, considered to be inappropriate given its proximity to a historic site.36
These repeated protests seem to accompany mostly Winter Olympic Games throughout their history. The types of competitions associated with these mega-events have always generated increased environmental challenges as opposed to their Summer counterparts.\(^3^7\)

Held in mountainous regions, their territorial outreach often overlaps protected areas and national parks. On the assumption that the location of these protected areas and national parks was not chosen arbitrarily and that they correspond to scientific arguments, this intrudes in future resource management projection of the host nation. It can even be argued that the negative impact of this intrusion has resonance at a planetary level. Thus, the discussion of environmental protection and sustainable development within Olympic events – and in fact, any mega-event – is redundant. The only course of action, pursued at various editions, is a desperate attempt to limit the environmental damage caused by such gigantic displays of consumption.

Chappelet accurately observes that “the ecological components of Olympic tradition can be traced back to the creation of the Winter Games more than to the revival of the Summer Games”.\(^3^8\) Indeed, Summer Olympic Games are mostly held within the controlled environments of stadia, swimming pools and, to a lesser extent, out in the open. These Games are also held in urban settings, which makes their deployment less problematic for the environment than those in rural, non-urban, mountainous areas. Summer Games also benefit from a wider array of pre-existing infrastructure, easy to extend given their enhanced size and capacity. Moreover, the legacy of such events is more likely to be absorbed and fulfil requirements for higher numbers and densities of users.

In view of Winter Olympic events, the environment must be modified according to clear specifications of sports governing bodies, such as the IOC and International Sport Federation (ISF). This translates into material constraints through architectural and landscape design to be superimposed onto the natural environment. Researchers highlight the sport of Nordic skiing, which now takes place on a designed course as opposed to the times when the terrain’s natural configuration served the purpose of the competition very well.\(^3^9\) It should be noted that designing the environment to accommodate precise parameters within which competitions can be organised is often at odds with pre-existing configurations of the landscape. Frequently, alternations need to be made such as deforestation, levelling, or excavation.

These requirements imply “extensive modifications of the natural environment, all to accommodate the conditions required by a rationalized and quantifiable model of elite sport”.\(^4^0\) Another very important factor transforms the pristine environment of mountain sports, often irreversibly: accommodating large numbers of spectators within areas which would otherwise be protected or at best subject to significantly reduced impact from human activity. Access paths for the public, and facilities for adjacent medical, hygiene or organisational services, add supplementary stress to the natural environment.

Chappelet highlights that Winter Olympic Games are “partly held in mountain resorts and are thus closer to nature”.\(^4^1\) He limits himself to observing that this type of mega-event is more sensitive to criticism from environmental groups,\(^4^2\) failing to speculate on the details and consequences of this weakness.\(^4^3\) *Closeness to Nature* seems to be an environmental marker best identified in how the events are deployed in the assigned
territory; and most importantly, how architecture fulfils the role of mediator of the relationship between visitors and the environment.

In addition, the term *Nature* within this utterance is debatable. Chappelet's use of it may be at odds with the objective of his writing, which is to highlight the environmental sensitivity inherent in such events. By not distinguishing between first and second Natures, Chappelet seems to imply that he reads *Nature* as a pristine environment, untouched by man. This is not a realistic premise. It must be stressed right from the beginning, in terms of both this study and the work of Chappelet, that the environments hosting the Olympic events are constructed and designed.44

Further to this, the idea of Nature is a perishable imaginary construct. In this thesis, the term *Nature* is capitalised in order to emphasise the fundamental distinctions between a category of idealised values – pristine, untouched, pure – and a depiction of nature as the sum of those objects constituting the natural environment nowadays – for example landscape, water, land – which no longer reflect the reality of that nature that was the home of pre-industrial populations. In other words, the term is capitalised in this work in order to underscore a critique of its undifferentiated employment in relevant literature about LWOG. In such works, the term *nature* is employed in disregard of the acute discrepancies between first and second Natures.

Boyd describes such dialectical omissions as “incremental amnesia: each generation loses more memory of how the natural world used to be”.45 Incremental amnesia involves the distinction between *primitive* and what could be termed as *second* Nature. The latter is what has been inherited from past generations; the former, an imaginary historic archaeological construct. No longer is nature a material reality, but an interpretation of a number of clues through scientific methods. From here, the complex task of assessing the damage to future generations and the present generation's contribution to the deterioration of environmental conditions necessary for human life on Earth, emerge as the most urgent questions related to the environmental crisis.

Design practices become instrumental to the further development of this nature, better characterised as *environment*, which is constantly altered. These practices have longer term effects. The choice and use of materials, decisions concerning territorial schemes, deployment of infrastructure, and the way in which the construction process is phased and inserted within the various settings, are the true concerns of this study. It is argued here that such an analytical project is necessary in relation to every edition of the Olympic Games.

In opposition to the lack of environmental awareness and focus on material profit of its preceding edition, the Winter Olympics in St. Moritz, Switzerland, in 1928 adopted an enhanced environmentally aware position, within the rationale of closeness to Nature. Successful examples included the bobsleigh and skeleton facilities, traced directly on snow and ice;46 in stark contrast to contemporary examples of facilities which have used chemicals to ensure the homogeneity of ice on purpose built tracks. However, lack of snow led to these Games proving unpopular.47

At the other extreme, the 1988 Games in Calgary, Canada, represented a step back as far as environmental issues were concerned. Chappelet observes a number of issues. First, the relocation of the downhill skiing venues to Mount Allen implied the use of artificial snow canons because of the customary lack of snow in the area. Second, the bobsleigh, luge and ski jumping were held in an area exposed to wind conditions. Chappelet notes
that the Bragg Creek site offered more appropriate conditions but was located further away. Lastly, he observes the creation of a costly trend in winter sports: for the first time, speed-skating competitions were organised indoors, at a purpose-built venue.48

An analysis of the drawings produced for some of the venues and facilities in Calgary reveal a very limited understanding of the environment as ecosystem. This is visible in environmental analysis drawings which contemplate the Olympic experience of the visitor, rather than the long-term consequences of the insertion of the Olympic sites into the landscape. The solar data is gathered only for the duration of the event, from 9 to 23 February. Moreover, the position of the venues seems to have been determined by the view towards the surrounding landscape, ignoring the environmental impact of their insertion within that very landscape. The latter is thus objectified and commodified to increase the lure of the Calgary Olympics. The environment is seen only as an image and utilised for its visual features. Its functions as ecosystem are marginal (Fig. 2).

**Density and Locality**

Winter Games are usually deployed in territories with a very low degree of human occupation; and within regions which are more difficult to access given the difference in levels and geological configuration (passes, mountain peaks, valleys, versants, tunnels, bridges). These events require larger investment of resources in respect to future use after the Games are concluded. Thus, Winter Games require the deployment of an elaborate infrastructure which is costlier to build and difficult to justify after the Games are over. Conversely, the infrastructure constructed for the Summer Games follows existing circulation and flow within consolidated urban and territorial structures and are more likely to be used after the event is consumed.49

Questions of the infrastructural density associated with Winter Olympic Games surfaced at the 1924 edition in Chamonix, France.50 The popularity of this event led to an increase of infrastructure, facilitating access for city-dwellers to the ski slopes in the French Alps.51 The environment was transformed by the construction of numerous sports-related programmes and territorial infrastructure. Roads and railways pierced the mountains to bring visitors to the Olympic area; mechanical transportation up the mountain, such as cable cars and ski lifts, enabled athletes and tourists to gain access to previously inaccessible ski slopes; while there was also temporary accommodation for visitors, such as hotels and apartments.52

Chappelet speculates that these constructions disregarded any ecological constraints which he states did not exist in France prior to the 1960s.53 Facilities designed for these, the first Winter Olympics, such as the outdoor skating rink, circular skijoring track, sports pavilion, bobsleigh run and ski jump enjoyed great success. The reasons for this success are, however, not mentioned; nor are the qualities of the architectural objects or intentions of the designers interpreted in his study.

Subsequent winter editions of the Olympic Games, namely Oslo in 1952, Cortina D’Ampezzo in 1956, Squaw Valley in 1960 and Innsbruck in 1964, were settings for the progressive shift from mountain resorts to cities, in consequence of the increase in the size of such events.54 It can be argued that the 1950s and early 1960s was when Winter Olympic Games acquired the features and title of mega-events, monopolising large amounts of resources to build large venues that could only be used within larger urban settings. The environmental difficulties increased as larger numbers of spectators and
Figure 2: Environmental Analysis, Canada Olympic Park
Source: Library and Archives Canada, RG 29M 956021
visitors required transportation on mountain slopes, where competitions needed to be held for climatic and topological reasons. Chappelet observes that this trend maintained into the early 1970s, when the Summer Olympic Games began being characterised as gigantic. However, the size of both Summer and Winter Olympics was not perceived as environmental menace.55

The mega-event held at Sapporo in 1972 is also worth mentioning in terms of infrastructural density. That “Sapporo chose to organize all the sports competitions within a maximum radius of 35km from the Olympic Village . . . with most of them taking place in the city itself”56 is proof of its commitment to deploy a reduced amount of infrastructure and concerns regarding the future reuse of the venues after the Olympics.57 It should not be forgotten that the previous winter edition, Grenoble 1968, tackled the question of venue distribution as well, reaching agreement on a 90 kilometres radius spread around the Olympic Village.

Supposedly, the argument of territorial efficiency can be made both ways. On the one hand, a more urban setting – as in the case of Sapporo, where inhabitation density is relatively high – would benefit from a less spread out scheme, where venues are within easy reach by using public transportation. This infrastructure increases the chances of reuse by the wider community; whereas when spread at greater distances, the constraints associated with remote natural mountainous settings appear.

On the other hand, as in the case of Grenoble and, to an extent, Lillehammer, the organising regions, towns and cities are characterised by less intensive human occupation (the communities are smaller and set at distance from each other). In these cases, a sustainable way of inserting the Olympic venues within the territory corresponds to a more decentralised fashion: so that every small community hosts a venue, which implies a greater investment in infrastructure. It also draws smaller communities closer together by means of an improved transportation system.

However, it is argued here that Olympic Games are, by definition, unsustainable; the accomplishment of every sustainable goal is the result of considerable organisational effort. The investment required so that a large number of visitors and spectators occupy a reduced amount of land for a very short period of time is against sustainable occupation of land, understood here as the quantifiable impact on pre-existing conditions of the environment in which the event is to be held. Whether venues are occupied and used, whether the infrastructure is employed after the Olympic event concludes is of secondary importance if the only way in which it can be considered a success is if it fulfils national growth aspirations. Territorial efficiency is not characterised by right models or wrong ones, but by choices that would diminish the environmental impact. Arguing that Olympic Games can have zero impact – as is the case with some commentators – and meet environmentally conscious objectives of the IOC, is an overtly positivistic view.

**Legacy**

The problem of Olympic legacy is largely discussed with regard to Summer Olympic Games. However, this marker is as important for any analysis of Winter Games. Despite their smaller size, the investment necessary is large in terms of the small communities hosting them. Moreover, environmental constraints, which need to be incorporated in the design of the venues and projected use in the period after the singular event comes to an end, raise the question of legacy to a more challenging standard for Winter Olympic Games than their Summer counterparts.
The Winter Olympics held in St. Moritz in 1928 represent a case in point for Olympic after-use.\textsuperscript{58} First, the purpose built ski jump, the steepest in the world at the time, is still used today, nine decades after its construction.\textsuperscript{59} Moreover, the ephemeral character of the Olympic venues traced directly on natural ice formations, formulated the possibility of dismantling the venues as an alternative to reuse. In 1948, scrutiny regarding the legacy of Winter Games was also posed when they were again organised by St. Moritz. Avoiding any controversy associated with the construction of new facilities, the organisers decided to reuse and improve the venues built for the 1924 edition.\textsuperscript{60} Environmental concerns were not explicitly taken into account when making this decision. However, the beneficial implications of reuse of existing facilities are obvious.

In opposition to these positive examples of Winter Olympic legacies, Lake Placid (1932) is unfortunately known for the disproportionate size of the indoor ice rink, which led to the accumulation of a large amount of debt:\textsuperscript{61} making it the first example of an unsustainable legacy. In addition, the venues for the 1968 Grenoble Olympics edition were abandoned shortly after the event was finished.\textsuperscript{62} The event is regarded as the culmination of the development of sports in the Alps region, which began in 1924.\textsuperscript{63} However, on this occasion too, the organisers were guilty of "failure to take environmental issues into account". Environmental conditions such as solar heat and light, wind, mist and altitude were not considered when assigning locations for the venues’ design.

A direct consequence of this lack of awareness was disruption of the Olympic training season. Inappropriate wind conditions rendered the Saint-Nizier ski jump unsuitable for use. Moreover, the programme at the Alpe d’Huez bobsleigh run was shifted from day to night, so that the competitions could be held during lower temperatures to ensure proper ice formation for the track. The Chamrousse downhill ski runs were also located at a considerably low altitude and seemed to have often been covered by mist. Similarly, the luge run at Villars-de-Lans was located at too low of an altitude to ensure the required ice covering.\textsuperscript{64}

At Grenoble 1968, the environment seems to have been interpreted as a context that can assimilate the consequences of human action with no disruption to the overall balance of the natural surroundings. This lack of consideration to environmental factors points towards the designers and planners involved. They appear to have downplayed the impact of these factors on the quality of the Games. Their conviction that science (in this case, the chemical substances that enable snow and ice to be produced) could be deployed and conserved at lower altitudes than where such phenomena naturally occurs, underscored their belief in their mastery of the environment.

In Sapporo, the only part with sufficient gradient for the Olympic downhill run (in compliance with the sport’s standards) was located on Mount Eniwa.\textsuperscript{65,66} That it was placed inside the Shikotsu National Park instigated protests from environmental groups and the broader public. A compromise was reached through the removal of the downhill ski run after the Games were over, and replanting of the corresponding land with trees.\textsuperscript{67,68} However, Essex and Chalkley, discussing the same issue, are uncertain about the intentions in Sapporo.\textsuperscript{69}

The 1976 Winter Olympics were held for a second time by Innsbruck, Austria. This offered the opportunity for the Organising Committee to reuse the existing facilities from 1964. The event’s organisers declared they would organise simple Games.\textsuperscript{70} However, the Games became considerably larger and more complex. Later catalogued as white elephants of winter sports venues,\textsuperscript{71} costly venues such as bobsleigh and luge run were
The requirement for ammonia to ensure that the runs were constantly refrigerated – potentially dangerous for the environment in case of leakage – are very difficult to justify. Yet the story repeated itself in every winter edition up to Lillehammer, except Lake Placid, where pre-existing facilities were used to a satisfactory extent.73

Winter Olympic Games pose material constraints as they openly interact with the surroundings. In light of the question posed here, this points towards the overwriting of environmental concerns by the cumulative interest of the host nation in promoting itself, and the IOC in deploying its profit-making mechanisms. In this problematic process, mountainous areas are more exposed; interaction between the spectators and the environment is not mediated by pre-existing urban conditions, unlike at Summer Olympics. This interaction should be regarded as a material design question and an ecological one. Yet Chappelet’s critical assessment of the ecological and environmental problems of Winter Olympic Games before Lillehammer engages only sporadically with questions of size, volume, materiality and area.

This section has identified four criteria that inform an architectural discussion of Olympic Games, particularly Winter Olympic Games: density (compact-decentralized), localisation (urban-non-urban), legacy (heritage, reuse), and the relationship of mega-events to areas with restricted use (for instance national Parks). Militancy (environmental group protests) impacts on material outcomes and can be considered a design factor. In other words, environmental groups influence the appearance of architectural settings.74 Most importantly, environmental impositions, not unprecedented in Olympic Games before Lillehammer, are the result of activism by environmental groups or associations of local residents, not an orchestrated effort by the IOC.

The following section will reveal Lillehammer as intrinsically bound to the legacy of the preceding Olympics. Interpreting the relationship between Albertville 1992 and Lillehammer 1994 provides evidence for the attempt to answer the question of the choice of Norway to host the Games. The same relationship will help understand the driving force behind the apparent flawless translation of environmental practices through territorial management and architectural design. These narratives underline that the pressure caused by the environmental failure of the 1992 Albertville Games generated the requirement for and enactment of a successful environmental mega-event in Lillehammer.
The Albertville – Lillehammer Complex

Next, it shall be revealed that the environmental concerns within the Olympic Movement had more to do with institutional survival of the IOC than authentic preoccupation with ecological problems. The discussion of two events portrayed in the literature in highly contrasting ways – one standing for all the wrong things in relation to environmental awareness, the other for all the right ones – will begin dismantling the myth of environmental supremacy of the IOC.

The IOC introduced in 1994, exactly 100 years after its creation, the third pillar of Olympism alongside sports and culture. Subsequently, in 1999, a tailored version of UN Agenda 21, IOC Agenda 21, was issued. It referred to “a series of sustainable development principles to be respected by all the organizations [coordinated by the IOC] in order to stage Olympic summer or winter games every four years”. The IOC thus became affiliated to a particular view of ecological crisis, one which militates for sustainable growth.

Also in 1999, the Olympic Charter was supplemented with an additional thirteenth mission:

To encourage and support a responsible concern for environmental issues, to promote sustainable development in sport and to require that the Olympic Games are held accordingly.

It will be argued that these documents reaffirm each other and are based on a set of notions that have no material support, and are empty of any relevant argument. This means they become no more than idealised aspirations at best, calculated constructions of collective imagination and their exploitation at worst.

The incorporation of sustainable development within the Olympic Charter therefore should not be interpreted as an altruistic gesture correlating the mission of the Olympic Movement with contemporary concerns. It should be borne in mind that ecological concerns, as will be seen further on in this thesis, had penetrated mainstream discourse since the early 1960s. The publication of Silent Spring by Rachel Carson paved the way for the birth of environmentalism and established a trend available for the Olympic Movement to appropriate. Why, then, did the IOC members choose the last decade of the twentieth century to respond in one way or another to an ecological crisis already defined three decades in advance?

Gold claims, rather problematically, that “concerns about protection of natural and, to a lesser extent, cultural environments began to transmogrify into a movement towards achieving sustainability” around the turn of the 1990s. Yet this movement existed prior to the 1990s; and was one of the main concerns of UN commissions, given the work of Alvaro Ortega on the development of efficient and economical housing solutions for underprivileged people in Asia, Africa and South America. Moreover, numerous international conferences and events were organised in the 1960s, 1970s and 1980s around issues of the management of natural resources, rates of consumption and population growth.

Nevertheless, these issues began to be discussed by the UN around the time of the publication of Carson’s book, but the IOC showed no sign of interest. Why did the IOC take
so long to recognise principles incorporating ideas of ecology and environmental protection? Since the 1960s, Local Olympic Organisation Committees had acted on their own, mostly under pressure from environmental organisations. No input nor any directives came from the IOC.

A possible explanation of this dephasing of the IOC comes from the French sports historian Maurice Roche. He notes that the end of the Cold War threatened the Olympic Movement with obsolescence, as its message of the unity of sport and culture, channelled towards world peace, was no longer sufficient in justifying the large investment of nations in hosting the event. The changed political context after the fall of the Iron Curtain and the communist regimes of Eastern Europe disabled the protagonist value of the pacifist message that the Olympic Movement had used to promote the Games. In other words, the IOC had little alternative but to finally engage in environmental debates.

Roche’s general observation, that

throughout the twentieth century the Olympic movement has shown considerable resilience and capacity to adapt to pressures generated in its international political environment,82

points towards the adoption of the Brundtland Report – and later, the environmental agenda within the core of Olympism – as being political manoeuvres for institutional survival. The message of peace was no longer sufficient to justify the Games, rendering more prominent the environmental conditions of their enactment. According to Cantelon and Letters,

this was a critical moment, for no longer was it necessary for the IOC to sell its Games as a peaceful and friendly alternative to war, an important platform of the IOC transnational rhetoric.83

Thus, it may very well be that the IOC did not make the first alteration of the Olympic Charter since it was composed by Baron Pierre de Coubertin thanks to some peculiar sudden rise of environmental awareness. The time had been ripe for this over three decades beforehand. Instead, it acted because of the threat that the Olympic Movement would disappear altogether in a world without the tensions inherent in the Cold War. This raises considerable doubt over the intentions of the IOC, its commitment to environmental conservation and ecological awareness. It would seem that the environment and the environmental crisis became central to the rhetoric of the IOC at that particular moment, because it had become necessary to appear as if acting with environmental awareness. These concerns were simply incorporated into the rhetoric of the IOC as a substitute for the peace component, which was no longer strong enough to monopolize worldwide interest.

Furthermore, the change in the frequency of Winter Olympic editions seems to also be linked to the adoption of environmental principles by the IOC. Cantelon and Letters interpret only as coincidence the decision of the IOC “to change the Winter and Summer Games sequence so that Lillehammer, Norway, would stage another Winter Games two years after Albertville”,84 and the concomitant ecological interest of the Olympic Committee. Moreover, in their view, the new alternate summer-winter Olympic cycles were critical to the centrality that ecological issues acquired within the Olympic Movement. Over-enthusiastically, they note that in “two short years, from 1992 to 1994, the IOC went from an organization with no environmental policy to one with a policy fully integrated into its philosophy of Olympism”.85
Apart from this observation not being entirely accurate, as a fully integrated policy appeared 5 years later in 1999 through the IOC's Agenda 21, the coincidence detected by Cantelon and Letters was in fact a carefully orchestrated, premeditated decision. The two researchers are right in assuming that the IOC had no environmental agenda before Lillehammer. The few decisions to implement politics and policies for the environment prior to Albertville and Lillehammer were the fruit of local deliberation, often pushed by environmental groups or public opinion as was highlighted in the previous section.

There is at least another, more concerning reason why the timing of the Winter Games was altered and the next edition after Albertville was awarded to Lillehammer, which only at a later stage proposed a bid strongly centred on questions of environmentalism. This thesis considers the requirement to whitewash the image of the IOC after the environmental disaster of Albertville. The French edition raised expectations in terms of environmental awareness but failed to deliver on promises made. Michel Barnier, Co-President of the Albertville Local Organisation Olympic Committee (ACOJO), "promised exemplary games with the lowest possible impact on the environment despite the spread of the competition venues over 13 Alpine communities". Since the results were far from fulfilling this promise, an environmental statement needed to be made urgently; a four-year wait would have a significant negative impact on the reputation of the IOC.

This is not to argue that the IOC immediately recognised the failure in Albertville. Judging by the words of the then President of the IOC, Juan Antonio Samaranch, Albertville can be considered a success in enacting environmental strategies. He showed his admiration for ACOJO's commitment to the environment, naming the 1992 edition of the Games a "return to nature". At the closing ceremony, Samaranch appreciated the honourable manner in which the "mountain-dwellers" of the region faced the "immense challenge" of hosting an edition of the Olympic Games that "spread over thirteen sites in the mountains". Furthermore, in the official publication of the Olympic Movement, the Olympic Review, Samaranch emphasised that the course of the downhill run was reconsidered in order to "spare a single flower, a columbine, which has become extremely rare in the Alps".

Samaranch's discourse invariably dwelt on the particular case, never on the bigger picture. This technique of addressing the audience puts the IOC in a favourable position. Highlighting situations in which the environment was indeed carefully considered and managed does not imply that the event as a whole was designed following, or indeed resulting in, the enactment of the principles implied by these examples. In any case, such principles were always suggested but never formulated in an accurate and precise manner. As Chappelet observes, some isolated examples can be identified; but under no circumstances can they be considered as characteristic for the event as a whole. Among these, most important were the relocation of venues and deviation of infrastructure to protect plants and animals. "High altitude turf beds" were spared by the decision to relocate the cross-country tracks at the Les Saisies site. Moreover, the "fragile surroundings" implied additional care in the planning and construction phases of the motorway between Chambéry and Albertville. Finally, as noted above, a columbine field gave the alpine flower's name to a turn in the Bellevarde downhill run, designed and built in such a way as to spare it.

Cantelon and Letters remark that aesthetic concerns to avoid "brutal alterations to watercourses", "the ecological treatment" of watercourses to "leave their charm intact", gentle pruning of the roadsides or the tearing down of "three hundred and fifty advertisement boards" may denote care for the appearance of environment. But in
Albertville, these actions were not linked to “ecological rehabilitation”. Instead, the
organisers created the opportunity for aesthetics to “merely gloss over environmental
insult”.94 Rather than being concerned with environmentalism, the organisers of the 1992
Winter Olympic Games were promoting “regional tourist, cultural and industrial
initiatives”.95

The aesthetic initiatives dominated the IOC’s response to environmental criticism in
Albertville. The objective of landscape beautification seems to have been a central
concern.96 “The fight for beauty”, as it was termed by the “IOC media machinery”,97 points
towards a false understanding of environmentalism. In having to safeguard appearances,
the IOC downplayed the role of the environment: which remained only a slogan. It is the
clearest expression of the problem posed by monopolising large amounts of resources to
organise a short-lived event. Within this process of conquering Nature and its
subordination to the economic, political and social objectives of the event, everything
seems to be allowed as long as the experience of the visitors (and their imagination) is
channeled in the direction desired. The missing face of a mountain, blown off a few
months in advance of the Albertville Games to accommodate a ski slope, will not be
detected by visitors from outside the region.

By raising these questions and controversies, the IOC did contribute, however marginally
and uncritically, to the debate around the impact of Winter Olympics on the environment.
The criticism of their failure owed to their chronic over-simplification of how the
environment is to be understood. This, on the one hand, can give way to potentially
problematic and even dangerous misinterpretations of possible solutions to the eco-
crisis. On the other, and even more alarmingly, the IOC avoided the stringent issue of a
relevant environmental critique altogether.

Jacques Rancière foregrounds in "In Front of the Camera Lens” the distinction between
the act of doing history from the process of making history. He discusses photography as
the utmost expression of the two cases. The lens of the camera separates the doer from
the maker; the one framing the picture and narrating the event, from the agency
producing the event narrated in the photograph. He argues that the process of doing
history is distinct from making history; that which is portrayed in a photograph does not
reflect the complex agencies involved in the making of that which is represented.98
Photography, as with history writing, is a suspiciously unfaithful partner in doing history,
often leading to the concealment of precisely that which represents the essence of the
narrated event.

It could be maintained that the media apparatus associated with Olympic mega-events
acts similarly to the lens of the camera in Rancière’s essay. It represents only a glimpse of
the relationships established in the short time-span of the event. The problem of the
environment is obliterated, while appearing as though it was addressed. By only
providing the context of Norway, the organisers of the Lillehammer Games acted like the
operator behind the camera. The second-tier contribution of the historians depicting the
event only summarily manage to give back its context: failing in the attempt to do history,
as they fail to account for those who made the history.

It is not enough to act locally and in an isolated manner. A single intervention has no more
than symbolic value and only a negligible positive impact.99 Cantelon and Letters identify
venues such as the bobsleigh track located at La Plagne, ski jump facility in Courcheval,
Nordic skiing and biathlon venue at Les Saisies, and the downhill course at Val d’Isère as
having an “excessive and unnecessary” impact upon the environment.100 In their account,
violent destruction campaigns were carried out in the mountain sites chosen to host the venues. Among these incursions into the ecosystem, it was necessary to blast part of Mont Bellevarde to accommodate the downhill course: which reshaped the geology of the area and as a direct consequence, increased the danger of avalanches.\textsuperscript{101}

Moreover, Cantelon and Letters are highly critical towards the actions and views of Samaranch. His rhetoric avoided “the environmental controversy”.\textsuperscript{102} They hold that the IOC was guilty of a lack of firm reaction when it became obvious that the Olympics would not honour the publicly stated environmental commitment. They argue that the failure of Albertville enforced the case of Lillehammer, two years later, as the mortice force behind the environmental agenda of the IOC.\textsuperscript{103} While the position of the two researchers aligns with that of this research with regard to Albertville 1992, it does not when it comes to Lillehammer 1994, because they fail to analyse the underlying corresponding economic and political motivations.

Right from the beginning of the organisational process, there was opposition to the Games in Albertville. Not everyone agreed with the account of the officials. The international environmental community

\begin{quote}
took advantage of the widespread media interest in the Olympic Games to publicise opposition to the Albertville Games and to demonstrate the extent of damage to Alpine landscape.\textsuperscript{104}
\end{quote}

Protests during the opening ceremony, when 60 environmentalists carried coffins “as a representation of the pollution and environmental injury caused by the Games”,\textsuperscript{105} were telling in this sense. The insertion of the ski jumps, bobsleigh and luge runs into the landscape was highly controversial and raised concerns from ecological organisations such as Fédération Rhône-Alpes de la Protection de la Nature (FRAPNA).\textsuperscript{106} Around the same time, in 1992, publication of *The Lords of the Rings: Power, Money and Drugs in the Modern Olympic Games* by Andrew Jennings, which focused on corruption, added to the instability experienced by the Olympic Movement.\textsuperscript{107}

Prior to Albertville, as has been noted, when the IOC showed no interest in environmental concerns, this role was assumed by local organisers. It might be argued that, in the context of the lack of priority given by the IOC to environmentalism, there were little grounds for criticism towards it. The environment was micro-managed at local level between the organisers and environmental groups, which grew in influence with every passing edition. Since the IOC assumed the environmental agenda in Albertville without having a clear understanding of what this might mean\textsuperscript{108} – certainly not mere emotive gestures such as conserving single flowers – it had become directly accountable in the eyes of environmental groups and a large global audience for the damaging interventions in Albertville. Due to both its lack of understanding, and an absence of any strategy to minimize the damage caused by the bad publicity in Albertville, the IOC denied having caused any substantial harm to the environment during and even after the event.\textsuperscript{109} This can be associated with the critical disjunction between the inherited values of Olympism and the IOC’s pragmatism when enacting the Olympic transnational statement.

After the event had concluded, it became clear that the IOC was beginning to appear as the cause of “widespread environmental destruction” by wrongful Olympic management.\textsuperscript{110} Yet after Lillehammer, hardly any model for sustainable development was successfully put forward, despite the initial claims to do so at almost every edition. This leads one to speculate that if it had not been for the national affiliation to Nature in Norway, the Games in 1994 would also have been portrayed as having failed.
Even Lillehammer's bid did not include any reference to environmentalism at first. This happened only after the organisers recognised the advantages of including such references. The "impressive presentation by the Norwegian Prime Minister" and leader of the United Nations Environment Programme (UNEP), Gro Harlem Brundtland, delivered in 1988 at the Seoul IOC Meeting, constructed the case for an environmental Olympic edition around "an ethic of solidarity with our current and future generations, a responsibility to the global balance of nature and an understanding of our role within it". The Brundtland Report's definition of sustainable development concerns that model of development "that meets the needs of the present without compromising the ability of future generations to meet their own needs". This is a question of resources management only marginally related to the environment, which is to be understood as air, land and water quality. These factors depend exclusively on the rate of extraction and consumption of natural resources such as petroleum, gas and minerals, and the deployment into the biosphere of chemical substances and radioactive materials resulted in the process of transforming them into energy. By channelling the attention of the world on the environment in Lillehammer, Brundtland acted as Prime Minister of Norway rather than an environmental custodian, defending the interests of the vast national oil industry. Seizing a history of efficient resource management, she successfully portrayed that, despite the large amounts of gases and pollutants released into the atmosphere as a result of the burning of vast amounts of fossil fuel extracted in Norway and exported to the rest of the world, the environment remained unchanged. Every detail of the Lillehammer event enforces the idea of the pristine environment, around which its inhabitants act very delicately.

Nevertheless, Brundtland's speech gave "added impetus ... in Lillehamer's successful bid for the 1994 Winter Games". Gold notes that, "to some extent, this notion would always have appealed to the idealism that remains a potent force within the Olympic movement". In other words, the idea of sustainable development is, Gold argues, compatible with the idealism inherent in the Olympic Movement. This over-simplified, positivistic reading of the IOC's moral virtues, which some critics see as a façade behind which corruption and opportunism fuels a gigantic profit-making machine, confirms that sustainable development became a notion prone to be incorporated in the ideals of the Olympic Movement. Gold's argument that the potent force of idealism is a common element in both sustainable development and the Olympic Movement, could be challenged, in the light of the work of Andrew Jennings and others, by the idea that the IOC seized the opportunity in Lillehammer to propagate its profit-making agenda rather than explicitly showcase and enforce ways in which sustainable development can be achieved.

The UN's Brundtland Report had been issued in 1987, when preparations for Albertville were in their first stages. This document, issued by the Norwegian Prime Minister proved, argues Gold, decisive in the selection of Norway to host the next edition of the Winter Games and banish the bad reviews generated by Albertville. Lillehammer had lost to Albertville in the bidding for the 1992 Olympics. In the view of the IOC, as Cantelon and Letters argue, "the negative environmental consequences of staging a Games (Albertville), juxtaposed with those means by which environmental damage might be avoided (Lillehammer)." Yet despite the international acclaim of the Lillehammer Games, environmentalism was marginal and over-aestheticised on this occasion too.

Perhaps the most critical account of the Norwegian 1994 Games is that of Jennings, the reporter who dedicated his life to investigating corruption within sports governing bodies. His book, The New Lords of the Rings: Olympic Corruption and How to Buy Gold
Medals, appeared in 1996, and is a critical account of the Olympic Movement. He discusses the case of Lillehammer soon after the introduction. This choice illustrates the positioning of Lillehammer at the core of the issues discussed in his book; in other words, the 1994 edition an emblematic manifestation of the problems contaminating the idealism embedded in the Olympic message.\textsuperscript{121}

Jennings constructs his account of Lillehammer upon the open critique of Norwegian people and officials towards members of the IOC and the Olympic Movement. Their bitter, often sarcastic remarks were targeted mainly at the President of the IOC, Samaranch.\textsuperscript{122} The author provides the story of a local pastor who overtly reproached Samaranch’s affiliation to fascism during Franco’s dictatorship in Spain.\textsuperscript{123} Moreover, Norway’s most beloved cross-country athlete at that time, Vegard Ulvang, made public defamatory remarks aimed at the Olympic Committee in general; Samaranch, in particular.\textsuperscript{124} He was seconded by the President of the LOOC, who raised doubts regarding the IOC’s intentions in Norway. Only an intervention at the highest level avoided unpleasant consequences. King Harald invited Samaranch and the LOOC President to a private dinner, and managed to stop the conflict from growing.\textsuperscript{125}

Apart from the criticism towards the IOC, which did not curb the enthusiasm of the majority of Norwegians towards the Games,\textsuperscript{126} many voices argued against the Olympic bid for environmental reasons. The dark-green environmentalists, for instance, placed themselves in opposition to the event.\textsuperscript{127} This movement’s ideology advocates for degrowth as the only solution to ecological crisis. It condemns overconsumption, consumerism and resource depletion. In other words, it opposes many direct consequences of the transnational material deployment of Olympic Games. Judging by the preparations in Albertville and the potential for environmental disaster already clear prior to the event in 1992, bright and dark green environmentalists in Norway had every reason to fear the worst in Lillehammer. Their critique was targeted at the Olympic Committee, which displayed scarce permeability to mainstream environmental ideas of the time.

It cannot be argued that the IOC had no reference point on how to approach implementation of the Games in Albertville in a way which would minimize its impact on the environment. Chappelet reveals that Samaranch had access to the latest debates around environmental protection. The IOC was present at the 1992 Earth Summit in Rio de Janeiro, organised by Gro Harlem Brundtland, then President of the World Commission on Environment and Development. Moreover, Samaranch was accompanied by the Co-President of the Albertville Organising Committee, Jean-Claude Killy, in discussions on the same topic in Davos at the 1991 World Economic Forum. Finally, as Chappelet observes, specialist discussions were organised in Chambéry on the topic of major sports events held in the Alps at the First International Conference of Winter Olympic Games Host Cities and Regions. The IOC was, of course, a key participant in this event.\textsuperscript{128}

A comparison between the distribution schemes in Albertville and Lillehammer reveals a surprising thesis: the differences between the Albertville and Lillehammer Games were marginal. In other words, the supremacy of the Lillehammer Games – supposedly organised to showcase the IOC’s new-found awareness towards the environment – was a constructed image, the result of a favourable association with a nation recognised for its closeness to Nature.

First, one of the most expensive Games to that date, Lillehammer 1994 was funded by the Norwegian Government.\textsuperscript{129} The scheme was not new; two years beforehand, the public
sector had been “central to the organization and, to a certain extent, the funding of the event.”\textsuperscript{130} in Albertville. Similarly, as Essex and Chalkley argue, in Albertville, “urban management of the Olympics”\textsuperscript{131} was the object of private investors. However, they were not the main contributors as “the role of the public sector appears to remain central to the organization and, to a certain extent, the funding of the event.”\textsuperscript{132}

They further clarify that the “Albertville Games of 1992 were originally conceived as a means of regional modernization by local businessmen, but it was the French government that funded the project.”\textsuperscript{133} Thus on the one hand, Albertville was designed as a state-funded pretext for post-Olympic regional development. On the other, the Olympic Games were an excuse for the creation of territorial and urban infrastructure necessary for the development of regional businesses.\textsuperscript{134} This public-private partnership was presented as an opportunity for social and environmental improvement through economic growth and increased employment.\textsuperscript{135} However, as Coaffe and Johnston argue, these positive consequences of hosting Olympic Games “are routinely exaggerated”.\textsuperscript{136}

Second, Albertville and Lillehammer were similar in that both attempted to distribute the beneficial economic influence associated with mega-events over large areas (13 Alpine regions in France; approximately 1,657 square kilometres and two regions in Norway). This not only allowed for more uniform regional development, avoiding the over-development of one hub and under-development of the rest of the region; but it would also provide the basis for increased use potential of the venues after the conclusion of the short-lived event. The event in Albertville was decentralised to enable local development. In a scheme which distributed it over three regions, the impact of the Games was diluted over a larger territory, and infrastructure and venues became more liable for future use. But why did Albertville fail where Lillehammer succeeded?

As Cantelon and Letters observe, it “was true that the Games met the IOC President’s declaration that it was time the Winter Games returned ‘to the very heart of nature’ This may well be the case but “they did so with severe disruption to the local environment”.\textsuperscript{137} From the perspective of environmental awareness, Albertville’s venues were inserted in the territory in an uncoordinated way, which led to environmental criticism. Lillehammer showed much more care in this regard. It invoked traditional values in order to give added impetus to the relationship between the venues, the infrastructure connecting them and the environment within which they were inserted. This was managed by the architects in a coordinated design strategy under the overwhelming influence of a Design Handbook.\textsuperscript{138}

This decentralised development strategy based on public-private partnerships (PPP) had been successfully deployed within the framework of the 1992 Summer Games in Barcelona. The organisers there operationalised the city council’s “Area of Sports” concept which involved a very decentralised distribution and location of many of the smaller-scale facilities used in the Olympic event, to develop public-private sector partnerships in the post-event management of facilities and also to promote the after-use of the facilities by the mass public.\textsuperscript{139}

Certainly, the organisers in Albertville and Lillehammer were aware of the plans for Barcelona ’92, as preparations for the three Olympic events ran in parallel. Simultaneous use of the same economic and distributive model in three different Olympic locations leads to the conclusion that it was a generalised trend, specific to the debates of
the time within the IOC and the organising committees. The IOC needed to review its Charter, not only because of political shifts following the fall of the Iron Curtain, but also because of the impacts accompanying a shift from a financing model reliant on public funds to one based on public-private partnerships.

This may also mean that the principles promoted as national Norwegian identity overlapped with rational strategic decisions of other organising committees – because they were the solution to similar problems associated with the use of Olympic events as development agents. More likely, though, the Norwegian LOOC appropriated the valid conclusions of the freshly concluded Albertville and Barcelona events into a constructed agenda for national identity. In Lillehammer, the main venues (ski jump, skating arena, downhill skiing, and ice hockey arena) were spread out across the territory, not the marginal ones: highlighting that Lillehammer brought the idea of decentralisation one step further.

Moreover, on-site spectatorship became marginal, with main revenue streams increasingly obtained from television rights after the Los Angeles Summer Olympics in 1984. Overwhelming the live audience with a dense concentration of venues inserted in a coherent, semi-enclosed environment was no longer required. This role was assumed by montage and editing of the live TV feed transmitted to the worldwide audience. Hence, the requirement for a singular location for the event became obsolete. What became a necessity was to achieve a unitary image. The 1994 event produced it while the 1992 one did not.

In Lillehammer, the design agenda included a section where common imagery was proposed for the dispersed site. The proximity of the venues was replaced by a scheme of large-scale infrastructural connections, putting the unitary image of an Olympic event at serious risk. Every venue responded to a different set of geographical and aesthetic constraints, leading to a high variety of architectural expression. A common language visitor-orientation sign system was also introduced, the rules of which were laid out in the LOOC’s Design Handbook.

If the reason for the success of the XVII edition of the Winter Olympic Games lay in its sign system, the assignment of an environmental coordinator ensured its environmental fame. Sigmund Haugsjå was responsible for communicating the environmental evolution to the media during the organisation process. Unlike Albertville, Lillehammer took advantage of the event’s communication channels to enforce the rediscovery and affirmation (or invention) of the Norwegian affiliation to Nature. This provides sufficient arguments in support of viewing Lillehammer not only in terms of what it produced and how this was consumed during its duration. It is also necessary to understand the way in which the product was created, as well as how it was transmitted and used after the event concluded.

The Norwegian organisers understood that the period between the awarding of the Games and the official opening ceremony is equally important and visible to the Olympic audience. Therefore, the LOOC embedded the Olympic message in all its actions ahead of the opening of the Games in February 1994. Chappelet gives the example of the rezoning of the area where the Hamar Olympic arena was supposed to be built. The Project Environmentally-Friendly Olympics lobbied successfully to save a “sanctuary for rare birds.” Furthermore, the media was informed of the green office protocol, under which the offices of the LOOC functioned during the organisational phase. Despite only limited information being available on this in the Official Report of the Games issued by
the IOC, it seems that the protocol was adopted to a large extent by the Norwegian municipal administration system.\textsuperscript{143} Such interventions were absent in Albertville: and were greatly responsible for the failure of its Olympic environmental message.

Moreover, the Lillehammer Olympics are a very good example of a successful legacy. The venues constructed and uniformly distributed along the Mjøsa Lake often host important international competitions, such as the Youth Olympic Games in 2016. Moreover, the ski jumping arena now hosts an athletic high school, which employs the media building as a classroom.\textsuperscript{144} The K90 jump has been adapted for summer use, with porcelain tracks installed onto the in-run, and plastic fitted onto the out-run.\textsuperscript{145} Interestingly, the venue was not only equipped for post-Olympic use, but also prepared for pre-Olympic events. The new ski jump hosted the World Cup in ski jumping (Nordic combined), along with a music festival, in 1993, a year preceding the Olympics.\textsuperscript{146}

The Kanthaugen Freestyle arena entered the national category of facilities for training and competition purposes.\textsuperscript{147} The cross-country skiing arena was designed for use as a riding centre, summer tourist facilities, sports competitions and events.\textsuperscript{148} The administrative buildings, were transformed into schools and congress centres.\textsuperscript{149} Decentralisation of these structures contributed greatly to the potential for post-Olympic use. The Lillehammer Olympic archive was created after closing of the 1994 Games and occupies the former broadcasting centre built for the Olympics, near Lillehammer.

This shows the concern not only for the material legacy of the Games (the way in which the venues and adjacent buildings are being used), but also the cultural one: texts, correspondence, drawings and other relevant documents. Stored in environmentally controlled spaces, millions of documents are archived here with rigour. This space is unique in that it exhibits the entirety of the legacy of the Lillehammer Games for research and consultation, rather than being the type of ad-hoc Olympic museum built in other host cities. These showcase medals, trophies and various commercial artefacts with souvenir value. The official correspondence, contracts, drawings and texts usually remain concealed: as with the Olympic museum in Lausanne, where the opportunity to view them only occurs after a thorough selection process.

In Lillehammer, however, legacy not only meant after-use of the venues and facilities. It was also a question of designing temporary structures which would be dismantled after the event. The Olympic Village activity centre, for instance, became an integrated urban site with a church, accommodation facilities, a nursery school, medical centre and retirement home. Most permanent houses in the Olympic Village were sold. It was also planned to move the temporary wooden structures to a site in Sweden as family dwellings; the remainder would be scattered around Norway.\textsuperscript{150}

The Olympic Report states that the roads and squares in the Olympic Village were dismantled, transported and installed in other locations which required them. Moreover, the fencing was sold to farms in the Gudbrandsdalen valley.\textsuperscript{151} Yet this research could not identify this having occurred, and there is no mention of these interventions in the Olympic reports put together by editions after Lillehammer. Therefore, further investigation into this is recommended.

An unprecedented, unhappily not replicated legacy element concerned the transient character of the Olympic Village in Lillehammer,\textsuperscript{152} entirely made of wood. Great attention went into its design. Buildings were conceived in such a way as to allow for their dismantling and reuse. The idea of modularity, prefabrication and reuse inherent in wood
construction resonates with architectural responses to the environmental crisis put forward in the 1960s, 1970s and 1980s.

However, despite Lillehammer’s declared commitment to sustainable development, not all actions were consistent with it. For example, cutting down trees to make a gigantic sign of the Olympic logo visible from the town of Lillehammer was considered an unnecessary gesture. Moreover, trees were also cut to make way for the large venues. In any case, these operations may be tolerated in the context of coordinated, responsible extraction and consumption of wood resources in Norway. According to the Olympic Report, to make up for the discarded trees, Olympic forests were planted by schoolchildren and medal winners. Again, the extent of this operation is not revealed.

With a similar population of 20,000 people, Albertville’s approach to the same problem was different. A spa was renovated for athlete accommodation, but located too far from the venues, which rendered the facility unfit for Olympic use. Later, during preparation for the event, seven small hotels were transformed to accommodate the athletes. However, this solution, despite its inherent environmental values (avoided creating new and difficult to reuse facilities), was unpopular among the athletes and officials, because it corroded the idea of unity of the athletes, an important requirement for the Olympic Village.

It can be argued that Lillehammer took the idea of reuse further, basing its concept of the Olympic Village by learning from Albertville's mistakes. Lillehammer also avoided the accumulation of unnecessary accommodation, but did so by recycling construction materials. This allowed the organisers to keep all athletes together during the event.

In conclusion, mostly as a consequence of the failure of environmental policies in Albertville — a public relations disaster for the French government and IOC — the Olympic Charter was modified in 1992 to include respect for the environment. It is difficult to believe Lillehammer only formulated its approach after this first official acknowledgement of environmental concerns by the IOC. Preparations were very advanced at that time. This only confirms that environmentalism was hitherto inflicted on the IOC only because of local awareness of the environment.

It is also apparent that Brundtland’s speech on sustainable development and the necessity of conserving the environment came at a very opportune moment, just before the awarding of the 1994 Olympic host city. The IOC, as has been seen, was in desperate need to remediate its damaged image resulting from Albertville; Lillehammer offered the most immediate solution. Yet initially, environmental concerns had not been part of the Lillehammer bid. This is how Lillehammer’s victory, described by Chappelet as unexpected, was made possible.

However, the comment according to which “small town covered in snow and in an idyllic setting was to some extent responsible for giving back some virginity to the Olympic movement” is excessive. There was nothing idyllic about how the event was organised. Lillehammer was the result of minute political calculation, and an ounce of idealism. Thus, the two editions of Albertville and Lillehammer did not differ substantially in terms of distribution and size. Lillehammer succeeded where Albertville failed thanks to the utilisation and careful channelling of a national sustainability brand. Every action in Lillehammer was subordinated to a meticulously constructed common image of environmental awareness.
This part of the thesis has revealed that Lillehammer was the consequence of unprecedented constraints projected upon the Olympic Movement and the IOC. However, these changes did not translate into a fundamentally different approach to the Games, whether politically, economically, or in material constructs. First, the Olympic Movement was denied the authority it had prior to the fall of the Iron Curtain: revealing the need to find another concept which would justify its existence and hegemony. The recently formulated notion of sustainable development and its partial and imperfect translation in environmental protection was proposed as an alternative to the ideal of peace. Second, a new economic model emerged to finance the ever-increasing costs of such mega-events. Government funding began to be replaced by private-public partnerships, which increased the environmental risks which such events are inherently subject to, but also dispersed the territorial setting into several smaller, more manageable Olympic sites. And third, the decentralisation of the Games was enabled by wall-to-wall live TV coverage, enabling the audience to increase hugely. These three factors contributed to the success of Lillehammer 1994, which was not different to previous editions in terms of environmental awareness, but in how environmental awareness was communicated to the public.
Problematising the Legacy of LWOG


1998 – Nagano

To begin with, Nagano re-established the four years’ interval between two Winter Olympics. The event exhibited respect for Nature as one of the three points of its agenda. However, this seemed to have been constructed as the process evolved, raising doubts over its influence and efficiency. For example, unlike the proposal in the bid, whereby downhill skiing and biathlon competitions were to be held in new venues, the organisers decided during the preparation phase to use the existing venues.160,161 This decision seems to have been well-received by environmental groups. Nevertheless, the circumstances that led the Nagano Olympic Organisation Committee (NOOC) to alter the initial bid remain obscure. Perhaps it is mere common practice at the Olympic Games to change the proposal from the bid over the various phases of organisation, to adapt it to circumstances which will inevitably evolve over a relatively long period, sometimes spanning seven years.

The downhill run at Nagano was controversial because its starting section was to be built in a protected area. The intention of the Local Organising Committee was to displace the venue so that the area under question could maintain its special conservation status. Committee members were prepared to provide the shortest downhill course in Olympic history, ignoring the advice of sports specialists, who recommended its extension to an altitude of 1,765 meters. In doing so, local organisers wanted to comply with their ecological commitments, which involved respecting the natural protected area of Mount Karamatsu, where the downhill run was to be built into the landscape.162 After heated debate, compromise was ultimately reached: the downhill was extended and occupied part of the protected area, giving primacy to the spectacle component associated with sports events; however, the protected status was immediately restored after the event concluded, which involved the artificial recreation of its natural conditions before the event.

Another environmental aspect emphasised in Nagano involved the process of planting trees in various Olympic sites. As had been noted before in this thesis, such an act is only positive if it is the result of careful ecological and environmental impact studies. No evidence of these surfaces at an analysis of the event. Moreover, mountainous regions arguably need the benefits of such practices less than any others. The planting was, in any case, a merely symbolic act, with insignificant positive impact on the area.

Such a step may have positive material consequences if occurring outside the Olympics, in areas which are affected by deforestation. Otherwise, it can only really be interpreted as a carefully orchestrated distraction of public attention from global problems such as widespread deforestation and global warming. By planting trees, public opinion is reassured of governmental awareness regarding these issues. However, serious issues are not addressed, turning such transitory ceremonies into inefficient, dangerously complacent scenarios. Public consciousness is coddled by symbolic acts.
The organisers did, however, have a sensible approach towards recycling and reuse of waste and materials. The staff uniforms were produced from recyclable materials.\textsuperscript{163,164} As many as 122,000 recyclable plastic PET bottles gathered by local children were utilised to build a section of the giant slalom course at Mt. Higashidate.\textsuperscript{165} Paper plates were used in food consumption areas and recycled into solid fuel after use. Food waste from the Olympic restaurant and cafeteria was dehydrated, composted into fertilizer\textsuperscript{166} and partly utilised locally. Finally, artificial snow was produced using purified wastewater.\textsuperscript{167}

Overall, Nagano 1998 can be criticised on the same basis as Lillehammer 1994. The attention to detail of the organisers revealed undeniable concern for the environment, promoting awareness around recycling and reuse. These issues already emerged in Lillehammer, where the covers of the food served at the Olympic sites were edible. It is true that such a concept reached a large audience given the spread of such mega-events, and that the originality of the idea pierced through monotonous, often tedious and moralising environmental discourse.

However, the impact of this was very small in comparison to the overall problems associated with ecological crisis. Reintegration of reused material and products in the consumption flow was not a coordinated project, with ramifications expanding beyond the scope and geographical area of the Olympic edition. Neither were these isolated acts projected in time and space outside the framework of the Olympic institution. Olympic spectators and visitors are not educated in this sense; new technology\textsuperscript{168} for producing recyclable objects was not widely available. In addition, there is limited evidence of forums or projects initiated in Nagano with the aim of disseminating knowledge acquired as a result of such practices. This shows once more that the environmentalism associated with the Olympic Movement has to be approached with caution; it often proves one more extravagance or exception that confirms the rule of and even re-enforces irresponsible consumption.

Moreover, actions were taken in Nagano which contradicted the organisers’ ecological statements and commitments. While the staff uniforms were biodegradable, the same cannot be said for the costly infrastructure to create artificial snow on the slopes.\textsuperscript{169} There is no mention in the IOC Report of the extent to which the biosphere was altered through production of artificial snow. The process implies the association of water with chemicals, with dramatic consequences for the natural balance of the region. The initiatives enacted in Nagano can be seen, again, as making only a symbolic contribution to the major problems.

According to the evidence highlighted by Chappelet, despite the clues showing innovative reuse and recycling techniques, Nagano lacked an overall coordinated such strategy. Isolated positive cases appear to us, then, as an attempt to show that experiments were being conducted: with the aim of calming ever-increasing worries around consumption habits. If the argument against it is dismantled, consumption is encouraged. In other words, if the ideas of recycling and reuse are associated with consumption, a critique of accumulation and consumption is undermined.\textsuperscript{170}

### 2002 – Salt Lake City and Sion

In June 1999, the year following the Nagano Olympic Games, the IOC adopted Agenda 21.\textsuperscript{171} This followed on from UN’s own Agenda 21 issued five years beforehand, and mainly involved adapting it for the purposes of the Olympic Movement. Three main
environmental aspects were promoted within the IOC document: improvement of socio-economic conditions, conservation and management of resources for sustainable development, and strengthening of the role of groups such as women, young people and indigenous populations. In adopting Agenda 21, the IOC did not take it upon itself to enact these ideas, but to promote them.172

Acknowledging the shortcomings of the 1999 document, the IOC issued a more practical manual six years later. This time, attention of the Committee was channelled towards the “implementation of sustainable development by the various Olympic sports, notably the winter sports”.173 The IOC also issued a list of conditions to be fulfilled by every Olympic Games candidate. The Olympic Games global impact requirements contained 150 indicators of performance in the areas of sustainable development.174 However, more often than otherwise, these are largely ignored by Olympic bidders: who focus their efforts on intense lobbying instead of convincing environmental bids.

Chappelet observes that the Summer Games hosted by Sydney in 2000, Athens in 2004, and Beijing in 2008 featured environmental rhetoric based on 1990s conditions.175 In September 1993, a Green Olympics document was drafted for the Sydney bid.176 Moreover, he regards Salt Lake City (2002), Turin (2006) and Vancouver (2010) as having been organised in ecological terms, “enhancing their environmental legacy”.177 However, as in the period preceding Lillehammer, environmental concerns appear to have been a by-product of local predispositions to enact them, rather than a result of pressures exerted by transnational organisations such as the IOC.

For instance, the bid for the 2002 Salt Lake City Games defeated that proposed by the city of Sion, Switzerland, which focused on irrefutable environmental principles. The Salt Lake City authorities reached their Olympic ambitions by lobbying.178 Moreover, the American bid featured a non-environmental strategy. If the account of this is accurate, this case underscores the IOC governing body’s lack of commitment towards its own recently debated and adopted environmental documents.

The environmental arguments in favour of Sion’s bid were overwhelming. The “Green Paper” was an annex crafted to surpass the expectations embedded in the IOC’s environmental requirements.179 It being added to the bid’s documentation demonstrated Sion’s seriousness in addressing environmental issues. In addition, the “Nature Contract” signed by the promoters of the Sion candidacy and the cantonal authorities, together with four environmental associations in 1995, in preparation for the bid, highlights the need for political backing in order to produce a long-lasting environmental legacy as well as the fact that environmental concerns remain exclusively a local matter in Olympic Games.180

Further proof of Sion’s commitment to the environmental agenda lay in the resilience of the Olympic project that was once more put in front of the IOC through a bid to host the 2006 Winter Olympics. A “Rainbow Paper” replaced the previous local agenda for the environment. In it, the promoters were “stating the intentions of the Valais regarding balanced development, via the games, in the economic, social, cultural political and environmental sectors”.181 Once more, Sion was defeated, this time by Turin, in Italy. However, the four points relevant to the Sion bid were incorporated by the 2006 host as shall be shown later in this section.182

Sion’s example suggests that environmental concerns had actually become increasingly unimportant to the IOC. The relationship between the environment and the Olympic

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Movement as an international, transnational and multinational organisation is tormented by incompatibility. The process of mobilising important resources for a rapidly consumed event which aims to make a profit puts the transmission of a responsible material and environmental legacy at risk.

This should not come as any surprise. The IOC stands for a global network of interests which migrate from city to city, region to region, nation to nation. Localisation of its practices is progressively externalised towards bid promoters initially, then Local Olympic Committees during more advanced phases of each Olympic project. The vocal appropriation of environmental concerns by the IOC has no parallel in action. The IOC not only has no agency, expertise or displays any desire to comply with local environmental policies, but it sets them aside in its constant quest for a positive market impact and economic viability. Proposals such as Sion's "Green Paper" included clear measures to be implemented in the specific Valais region, opening up a new line of inquiry into sustainable development; but effective lobbying practices influenced the IOC to look in another direction, wholly contrary to its pledges after Lillehammer.

That said, the Salt Lake City Olympics “implemented . . . an efficient environmental management system for all the aspects of the Games”. From this, it can only be assumed that this involved altering or adding to the initial bid. Be that as it may, the 2002 Winter Olympics were organised in full awareness of issues such as the impact of construction on specific sites, energy consumption and conservation, water conservation, the insertion of accommodation and transportation infrastructure, as well as the role of education in relation to environmental matters. According to the Olympic Report on the event, energy-efficient buildings were designed and constructed with reduced material consumption, waste management was optimized, the organisers collaborated with environment experts, and trees were planted in urban areas to avoid build-up of ground-level ozone. Despite “zero-tolerance for compliance errors”, there "were no fines or notices of violation.”

These principles, unlike previous editions including Lillehammer, translated into four quantifiable objectives, which assigned responsibilities and accountability among the various actors of the Games. Salt Lake City's display of its ambition for zero waste management, net zero CO2 emissions, advocacy for urban forestry, and zero tolerance for compliance errors with declared environmental standards and safety was, taken together, very convincing. However, these do not constitute conditions sufficient to tackle mass ecological crisis.

At best, they serve to limit the impact of mega-events on the surrounding environment, which is at least a progressive objective. But the case for their beneficial effects on, or indeed contribution to the broader questions of global ecological crisis cannot be made on this basis. That the Salt Lake City Olympic Committee (SLOC) was awarded climate neutral certification or that waste recycling aims were met in large proportion (95% waste recycled or composted) or that a vast number of trees were planted (100,000 units) in the state of Utah had only a minor impact at a global scale. It is, however, an encouraging trend that should be advertised as an example to be followed. In this sense, the media machine of the IOC can be put to very good use in the pursuit of environmental conservation.

However, the IOC’s role in these complex local processes remains unclear. The Olympic Report mentions these as outstanding accomplishments of the Olympic Movement; yet given the many precedents and analysis by historians and critics, it is hard to believe that
this was the case. More than aligning its expectations with the debates around environmental conservation, it is argued here that the IOC did not acquire an active role in promoting these ideals, but limited itself to capitalising on the initiatives of the Salt Lake City Olympics: which were the result of local debate, not transnational impositions.

Nevertheless, it should be acknowledged that the involvement of the IOC in environmental debates and its adoption of various documents in this respect did contribute to increased awareness towards environmental issues of Olympic editions after Lillehammer. The case of Salt Lake City certainly confirms the relatively beneficial effect of recommending conservation principles to every candidacy; even if these were not on the agenda during the bidding phase.

It might, perhaps, be at least worth entertaining the idea that by awarding the Games to Salt Lake City rather than Sion, the IOC made an interesting environmental statement. By not moving the Games to a region already deeply committed to environmental strategies and awarding them to one which offered no such considerations, the IOC arguably assumed the role of an educating body in aspects of sustainable development. The environmental Games went there where they were most needed. However, there is no evidence of such a deliberative strategy within the IOC; while the serious corruption scandal surrounding the awarding of the Games to Salt Lake City places such a hypothesis under severe doubt and labels the interpretation as positivistic and dispensable.

2006 – Torino

The Turin Games “went even further” in terms of environmental awareness. It was the first sports mega-event to receive high-level climatic certification from recognised international agencies. The Turin Olympic Games combined the notions of heritage and climate change (distinct from environmental awareness) in a programme called Heritage Climate Torino (HECTOR). Its aim was to reduce the 100,000 tonnes of greenhouse gas and to raise awareness in relation to climate change. Aspects concerned with the legacy of the Games were also channelled towards environmental consciousness under the same project.

Hitherto, the Committee in Turin implemented a large water supply, water management and water treatment infrastructure, not only in response to the requirements of the Games but to reinforce the city’s existing infrastructure afterwards. As stated in the Torino Sustainability Report, the “water Plan was an important basis for identifying works in connection with the Games, even though they were not strictly necessary for their development”. Moreover, “works comprised new water mains and downstream sewers as well as new sewage treatment plants”. If, before Lillehammer, Olympic benefits for the local community concerned transport infrastructure, with Turin, it can be seen that questions of development now included resource supply and management networks. The benefits of such strategies are less easy to assess, as their added value is not translated in economic improvement.

Also of interest is that in Turin, the question of environmental awareness was translated into one of climate change. Climate change should be read as a framing of the ecological crisis beyond the environment, in recognition that the environment is a dynamic system in continuous transformation. Thus, the notion of climate change becomes an incentive to channel development at a sustainable rate. The approach thus shifts from a predominantly aesthetic one, as in the case of Lillehammer, towards a functional-technological one. This is not to suggest that the IOC had a more relevant role regarding
Turin 2006 than at previous editions. In fact, a local law adopted on 9 October 2000, strictly applicable to the territory of Italy, required the Turin Olympic Local Organisation Committee (TOROC) to perform a "strategic environmental assessment" of the impact of the Games. Once again, local agencies pushed environmental concerns onto the Olympic agenda.

Turin shows that not architecture, but infrastructure can become an efficient, active tool resulting from mega-events that can contribute to regional sustainable development. Turin stands in this sense for an anti-aesthetic approach to environmental concerns, eclipsing complacent, melancholic rehearsals of traditional architectural practices. Turin demonstrates to a certain extent that architecture has little or no defining agency in promoting sustainable development as a transformative force within established regional and global apparatuses. Burdened by representative functions, architecture may only aspire to promote such agendas at a symbolic level.

Moreover, perhaps as an attempt to transgress the locality of the Games, TOROC established institutional links with other transnational organisations, bypassing the authority of the IOC to an extent. For instance, TOROC collaborated with UNEP, providing the organisation with "annual sustainability reports" to affirm its accountability of the entire process, starting with the initial "Charter of Intents", ending with its "commitments regarding the economic, social and environmental impact of the 2006 Games". Moreover, the Turin organisation committee emphasised its social responsibility by engaging with the "Ethics and Social Values in Sport" project promoted by the European Commission. This shows how hosting an Olympics can be used to access political spheres which were inaccessible beforehand.

2010 – Vancouver

The Local Committee in Vancouver fixed six performance goals. They included accountability of the involved organising bodies, taking care of the environment in such a way as to reduce the impact of the event, social inclusion and responsibility, participation of aboriginal populations, economic quantification of environmental practices, and the premise that sport needs to be at the foundation of sustainable living.

Chappelet observes that "these objectives combine the classical environmental themes with new ones such as governance (accountability), diversity and social responsibility". Is this affirmation made while understanding that environmental concerns were dissociated from governance and social responsibility? The discussion around ecology and the environment pursued in the 1960s and 1970s especially emphasize governance, diversity and social responsibility as inherent in environmental and ecological concerns and active ecological measures. It seems, however, that the absence of such concerns within the Olympic Movement was the result of voluntary or involuntary exclusion. Even among researchers like Chappelet, environmentalism and ecology are perceived as subjects with reduced social relevance. Repeated downplaying of these movements is detectable in the writing of Gold, Chappelet, and Cantelon and Letters. For them, it seems that environmentalism emerged with UN Agenda 21 – which is far from the historical truth.

This is a limited perspective, against which the message of this thesis is intended. If the Olympic Movement is discussed within the entirety of the history of ecology and environmentalism, the balance of forces as described by Chappelet and others is fundamentally altered. The aim here is not to trace the late, inaccurate rediscovery of ecological concerns by the IOC. Rather, this study seeks to show that there is no
compatibility between Olympic mega-events and sustainable development, as the two notions belong to fundamentally divergent categories. Olympic Games exploit resources and enact aggressive practices of accumulation which are not always channelled towards ecological causes or ideas. If the IOC constantly attempts to highlight its environmental virtues, it is because of a need to locate itself at the centre of contemporary social concerns.

Vancouver recalled Lillehammer in being one more occasion when the benefits associated with the Olympics were projected onto a whole region: in this case, British Columbia.\textsuperscript{203} Vancouver 2010 was, to date, the last example of a decentralised Games. Sochi 2014 did not opt for this territorial approach. It preferred a more nucleated schema. However, Vancouver was also the high point of the tendency to increase the size of the Olympic hosts, which began during the 1960s. Despite being the most populous city to ever host the Winter Games, it also channelled the Olympic project over a larger territory. Vancouver thus became an interesting fusion between the tendencies of compactness and decentralization.

However, it also established a new trend. In the 1970s, Winter Olympic Games escaped the constraints inherent in their organisation within isolated mountain resorts and migrated towards urban locations. At Vancouver, Winter Olympic Games broke yet another barrier. The venues were organised in a region famously affected by the weather phenomenon of \textit{el Niño}: which brings warm temperatures, at their peak around late December. The average temperature in February, the Olympic month, was 7.1 degrees Celsius.

Organisers were prepared for this eventuality; despite the unsuitable temperatures, snow was brought in by truck and helicopter from as far as 250 kilometres away. Yet that the IOC awarded the Games to a location so uncharacteristic of the climatic conditions necessary for winter sports raises serious doubts on how the environment is understood: either as a context for human activity, or as something opposed to it. Some venues were located at sea level, which was unprecedented; while others were placed on the wrong side of the mountain, resulting in inappropriate skiing conditions. The errors of the pioneers of the Winter Olympics, notably the organisers of Chamonix 1924, were still being repeated almost a century later.

\textit{2014 – Sochi}

Following in the footsteps of Vancouver, Sochi’s bid for the 2014 Games envisaged an event which would ignore the question of climatic suitability for winter sports altogether. When the Russian city was announced as the host, many critics expressed their concern regarding the unsuitability of a sub-tropical climate in supporting the sports infrastructure required for such occasions. Indeed, in 1999, Sochi was considered as a candidate to host the 2008 Summer Olympics, not their Winter counterpart.\textsuperscript{204} Again, the IOC seemed to downplay environmental constraints in favour of economic arguments.\textsuperscript{205} A report by the Environmental Watch North Caucasus (EWNC) states that the IOC and the UNEP “\textit{shut their eyes to numerous violations, were not objective, and failed to carry out their responsibilities}”.\textsuperscript{206} The organisation of the Games in Sochi was made at great financial and ecological cost. First, one of the two sites in the Rosa Khutor mountain resort was constructed on the land of Sochi National Park, in disregard of clear restrictions established by law to build in such areas.\textsuperscript{207} Second, the highway connecting the site to the borders of the Black Sea was built on top of an archaeological UNESCO World Heritage
site. Third, the bobsleigh and luge runs were planned for “locations in the buffer zone of the Caucasus State Biosphere Reserve – a UNESCO World Heritage site”,

The organisers went as far as proposing and obtaining the rezoning of Sochi National Park to allow the implementation of recreational sites. This evidence contradicts the declared environmental commitments of the IOC. Moreover, the IOC completely ignored the Lillehammer model it so often praises. Needless to say, Greenpeace Russia filed a complaint. If at preceding editions of Winter Games, such a move had aligned environmental concerns to the objectives of the event in question, this was not the case in Sochi. This alarming finding is telling of the opportunism at the core of the Olympic Movement.

The permissiveness of the IOC in the case of Sochi 2014 encouraged local legislation which limits the extension of protected areas in favour of the right to build ski resorts on the Lagonaki plateau and Fisht-Oshtensky mountain ridge. The EWNC ends its report on Sochi with an address to the Russian government requesting, among other environmental claims, to “drop all initiatives to amend the borders of the Western Caucasus UNESCO World Natural Heritage site with the purpose of legalizing construction of . . . ski resorts”. It also demands the discontinuation of ample infrastructure programs in protected areas, which flourished after the precedent established by the 2014 Winter Olympics.

The economic argument was prioritised over environmental awareness and sustainable development. In Sochi, consistent “cash injections [were channelled towards] a resort that can rival even the most famous alpine winter sports towns”. Expensive venues constructed on sandy grounds near the Black Sea required deep foundations, posing structural problems with costly solutions. The delicate relationship between buildings and the environment seemed to have been long forgotten. Climatically regulated venues simulated winter conditions in which the Olympic competitions could be held. Four years beforehand, in Vancouver, spectators of the opening ceremony were, for the first time at a Winter Olympics, welcomed in a completely enclosed arena. The migration of Olympic winter sports away from Nature seems to have been completed. The open scenario typical of mountainous regions was progressively replaced by an immersed environment. The trees, sky and slopes became structural elements, large-span roofs and concrete grades.
In this study of the relationship between environmental practices and the Winter Olympics, relevant and fruitful criteria have been identified for the assessment of Lillehammer 1994. First, it remains unclear whether migration from mountain sites to urban contexts during the 1960s and 1970s represented a transition of awareness of the substantive environmental impact which mega-events have on pristine mountain sites. These decisions can be interpreted as a clear statement against sports settings within natural environments; and indicative of the non-commitment to the environment of Olympic Committees, as large infrastructural connections to mountain sites needed to be deployed. But it is also possible to interpret this shift as an attempt to avoid intensive occupation of mountain resorts for short periods of time. By dissipating key venues within consolidated urban scenarios, local organisers avoid an Olympic build legacy which would be difficult to manage after the event concludes.

Furthermore, throughout the history of Winter Olympic Games, the extension of the Olympic intervention has increased as a potential solution to the problem of legacy. Larger sites within urban contexts ensure better use of facilities for the long run. Lillehammer eluded this tendency; it was the last event organised in a mountainous region, away from any large urban centre. Decentralisation of its venues was an attempt to tackle the question of legacy through precise distribution within the territory, rather than assimilation through size. Whether this was a characteristic of the Games specific to Lillehammer or imposed by the environmental discussions of the time remains to be seen. Moreover, Lillehammer’s original signage system project was intended as a measure to counteract the lack of unity of the Olympic settings. The increasingly relevant financial argument in support of private-public partnerships, as well as enhanced reliance on television audiences, allowed for the shift towards non-compactness/non-nucleated Olympics to take place.

Second, the tendency at present seems to be to avoid climatic constraints for the enactment of winter sports altogether, and push bids to host the Games in climates which are not suitable for such a purpose. The acceptance of such deviations from the third pillar of Olympism is alarming, especially when justified by top officials with phrases such as “Olympics must go for green as well as gold”.215 This amounts to the misuse of resources in the name of opposing geographical belonging (citizenship), not enforcing it. Hosting Olympic Games in sites where snow is scarce requires the deployment of technologies which inflict transformations, often with negative consequences, of the environment. However much of an exception Lillehammer represented, it did not enforce a return to Nature at subsequent Games.

Various conditions of Winter Olympic events have been observed which only underscore their profound anti-environmental, anti-ecological character. The repeated overlapping of Olympic venue sites with natural protected areas as in Nagano and Sochi is symptomatic of the overall unsustainability of mega-events. This has recently become more visible than ever; Meanwhile, construction of artificial snow infrastructures to ensure the optimal conditions recommended by specialists for Olympic winter sports, as well as the mobility infrastructure constructed in mountain sites, further add to the environmental stress on Olympic areas.

Third, it has also been attempted to distinguish between two categories of sustainable development. On the one hand, the Norwegian model stands for aestheticisation
(Lillehammer, 1994) of the human-Nature relationship, without reaching or questioning the causes of the ecological crisis. However, this model is not replicable for other geographical contexts, leading to the conclusion that Lillehammer did not represent the environmental values which historians and critics seem to cherish it for. On the other hand, sustainable development can be viewed as a functional-technological question (Turin, 1998). The approach of many architects during the 1960s and 1970s dismissed aesthetic design criteria. They produced highly functional spaces, organically inserted into the pre-existing context: an approach defended by this thesis as efficient and responsive to sustainable development criteria.

In addition, fourth, the survey of Winter Games attempted in this part of the thesis highlighted that after Lillehammer, the Olympic Movement enforced environmental and ecological awareness through symbolic acts rather than consistent policy, which could have projected environmental benefits beyond the space-time work-frame of the isolated events. This points towards the ephemeral character of the Olympic Games as a profoundly anti-ecological construct, which produces static legacies with little or no positive environmental long-term effects.

On a more positive note, fifth, it has been revealed that the IOC can put its media machinery at the service of popularising isolated positive interventions, as at Salt Lake City and Nagano. However, this message needs not to be marketed as some form of competitive advantage, but in awareness of its potential educational functions.

Sixth, the outcome of Olympic editions in terms of sustainable development seems to be strictly dependent on local political factors and the commitment of residents to contributing to ecological solutions. This highlights the passive role of the IOC in these debates. The most successful Winter Olympic editions in terms of environmental awareness were orchestrated at local level. This reaffirms the crucial importance of local awareness to the formulation and tackling of the ecological crisis.

To an overwhelming extent, the ecological and environmental concerns put forth at editions of the Games were the result of local, coordinated efforts to preserve regional territorial and architectural practices. The IOC acted in many cases against these interests; Nagano and Turin can be considered the clearest illustrations of this. If the IOC incorporated environment as the third pillar of Olympism, it was under the auspices of an identity crisis at the end of the Cold War. At this point, the adapted environmental bid of Lillehammer employed a consolidated environmental tradition in order to compensate for the failed environmental ambitions of Albertville. The Lillehammer project was enabled by massive governmental financing; its sources will be explored later.\textsuperscript{216}

Moreover, the first environmental measures adopted for Winter Olympics had their motivations embedded in the ambition of local residents to protect their ways of life against the gigantism of Olympic projects. This was not intended merely to conserve aesthetic qualities of the environment which hosts their day-to-day activities; but as the only way to ensure long-term economic development through the possibility of continued moderate forms of land exploitation.

Seventh, it has been established that if the IOC had defined a clear environmental posture in the aftermath of the failure of Albertville to deliver environmental Games, it would not have needed to partner up with a government of a nation state associated in the collective consciousness with pragmatic environmental awareness. Nor was it the case that the IOC assumed the role of apprentice under the expertise of the Norwegian Local Olympic
Organisation Committee. Throughout the history of Winter Olympic Games, the IOC did not acknowledge environmental concerns until the end of the Cold War – despite considerably increased global debate on this issue.

Finally, the preconceptions have been challenged regarding the supposedly impeccable Norwegian model for environmental awareness. This study has not tried to argue against such a hypothesis, but to signal the utilisation of it by political power centres such as the IOC, the Norwegian elite or the UN. In any case, it is posited here that environmental conservation, as represented in Lillehammer, is not sufficient in solving the ecological crisis.

The sources of the apparent Norwegian commitment to environmentalism, despite the lack of evidence of the awareness of Norwegian architects of ecological debates, are analysed in the next parts. It was not Agenda 21 which fuelled the success of the environmental propaganda in Norway. Rather, as will be seen, a careful reframing of history provided the tools to construct a collective, imagined vision in relation to the environmentalism of Norwegian culture.

Architecture proved the most efficient tool to design and build a material legacy framing these expectations. Maybe the most important finding in Part 1 was that the relationship between environmental practices and the Olympic Games in general, and the Winter Olympics in particular, is a question of design. Evaluating the architectural, urban and territorial constructs produced on these occasions may reveal layers of complex agency which would otherwise remain hidden.

It has been noted how historians consider Gro Harlem Brundtland's speech as a defining moment in the surprising award of the Games to Lillehammer. It is not a major conceptual leap to consider that around that time, the bid was adorned with environmental considerations. Brundtland convincingly argued for the concept of sustainable development as the only way to ensure the wellbeing of future generations. Her affiliation to both the UN and the political sphere in Norway, as director of UNEP and Prime Minister respectively, raises doubts on the aims associated with her speech. A discussion on this subject will be attempted in the next part.

The case of Lillehammer seems to have provided the clearest expression of a national identity recycled and rebranded for dissemination through the channels of the Olympic Movement. The aim of the next part is to provide a more in-depth analysis of this complex relationship; and demonstrate that the projection of a local environmental message, rather than the imposition of the notion of sustainable development, determined the success of the event.
Notes

1 To this end, this study will follow the steps of Jean-Loup Chappelet: who, in "Olympic Environmental Concerns as a Legacy of the Winter Games", explores the chronological genealogy of the Winter Olympics from the standpoint of environmental practices. From a chronological reading, architectural, urban and territorial themes can be extracted which serve as indicators of the environmental disruption of Winter Games.


4 Gold, JR., Gold, MM. (2013) Bring it Under the Sustainability Umbrella, Sustainability

5 "Once Lillehammer’s unexpected victory was confirmed – it had previously come only fourth in the voting for the 1992 Winter Olympics that was won by Albertville – the Norwegian Government made the event a showcase for its environmental policies. The bid’s objectives were expanded to include five “green goals” that moved thinking on from simply protecting the environment towards a proactive view of sustainable development". Quoted from Gold, JR., Gold, MM. (2013) Bring it Under the Sustainability Umbrella, Sustainability, 3529.

6 Gold, JR., Gold, MM. (2013) Bring it Under the Sustainability Umbrella, Sustainability

7 Ibid., 3529

8 Chappelet notes that the Norwegian government opted to transform the event in a “showcase for its environmental policy”. Parliament voted in 1990 to allocate “massive credits to finance the Games”. It also decided to “expand the initial objectives of Lillehammer’s bid to include five ‘green goals’. The legislation required Norway’s Olympic organizers to increase international awareness of ecological questions; to safeguard and develop the region’s environmental qualities; to contribute to economic development and sustainable growth; to adapt the architecture and land use to topology of the landscape; and to protect the quality of the environment and of life during the Games”. Quoted from Chappelet, J-L (2008) Olympic Environmental Concerns as Legacy of the Winter Games, The International Journal of the History of Sport, 25 (14), 1892. The researcher discusses here the items identified in OL’94, “Olympic Games with a Green Profile”, 2.


12 Ibid., 304

13 See the 2000 Olympic Games, hosted by Sydney; and the 2012 London Olympics, discussed later in the thesis.


15 Ibid., 303

16 Ibid.

17 “The increasing scale of the event has also necessitated more formal recognition of environmental issues in the planning and development of related infrastructure (May, 1995). The intrusion of built structures into fragile environments, as well as the use of chemicals to create the appropriate conditions, has become a major issue in the preparations for the Winter Olympics. Most notably, the preparations for the Lillehammer Games in of 1994 incorporated, for the first time, the principles of sustainable development”. Essex, SJ., and Chalkley, BS., (2007) The Winter Olympics: Driving Urban Change, 1924-2002, in Gold, JR., and Gold, MM. (eds) Olympic Cities: City Agendas, Planning and the World’s Games, London: Routledge, 56-7.


23 This shows the disconnection of the Olympic Movement from local and environmental problems.

25 Ibid., 1889

26 However, Tokyo’s bid for the 1964 Summer Olympics is seen as symptomatic of corruption in the IOC by journalist and writer Andrew Jennings. Jennings demonstrates the extent to which members of the IOC and their relatives were influenced towards Tokyo during their official evaluation visit in 1958; Jennings, A. (1996) *The New Lords of the Rings: Olympic Corruption and How to Buy Gold Medals*, Great Britain: Pocket Books, 39.


28 93%

29 Lange, T. (1972) Keeping the Olympics out of Colorado, *UCCS Weekly*

31 Ibid.
32 Ibid.
33 Ibid.

34 "The height of the small and large ski jumps . . .; the extension of the downhill runs on Whiteface Mountain; and the size of the new ice rink in the centre of the village". Quoted from Chappelet, J-L (2008) Olympic Environmental Concerns as Legacy of the Winter Games, *The International Journal of the History of Sport*, 25 (14), 1890.

35 The K90 and K120 ski jumps were built side by side for the first time at the Lillehammer Winter Olympic Games.


39 "Thus, for example, international competitions like Nordic skiing, which had their beginnings in the traversing of the natural winter terrain, now demand a specific undulation of course, strict gradients, designated width track, and a minimum number of slopes." Quoted in Cantelon, H., Letters, M. (2000) The Making of the IOC Environmental Policy as the Third Dimension of the Olympic movement, *International Committee for Sociology Sport (ICSS)* 3 (35), 300.


42 Ibid.
However, this should be tackled in abstraction of the IOC’s influence on the environmental agenda, which contaminates environmental aspirations and subordinates them to a profit-generating market logic.

The notion of entropy was borrowed by economist Nicholas Georgescu-Roegen in his construction of bio-economics. This will be discussed in Section 5.


Ibid.

Ibid., 1891

The success of Lillehammer was based on the knowledge of the local authorities in managing the balance between necessity and future use of the Olympic facilities. This was not unprecedented, as the organisers of Albertville 1992 attempted to achieve a similar goal; but did not succeed.

It was the first Winter Olympic event ever held, and preceded the Summer Olympics organised the same year in Paris. Chappelet, J-L (2008) Olympic Environmental Concerns as Legacy of the Winter Games, The International Journal of the History of Sport, 25 (14), 1886.


The original quote from Chappelet is an enumeration of elements: “Road building, mountain railways, cable cars, ski lifts, and the construction of hotels and holiday flats”. For the purpose of this thesis, I have taken the liberty of enriching it. Chappelet, J-L (2008) Olympic Environmental Concerns as Legacy of the Winter Games, The International Journal of the History of Sport, 25 (14), 1887.

53 Ibid., 1886
54 Ibid., 1888
55 Chappelet further links the student protests and massacre that took place prior to the Olympic Games in Mexico City in 1968 as a public manifestation of environmental concerns in relation to the ever-increasing size of the Games. Chappelet, J-L (2008) Olympic Environmental Concerns as Legacy of the Winter Games, The International Journal of the History of Sport, 25 (14), 1889

56 Ibid.

57 Ibid.
58 Ibid., 1887
59 At the time of writing.

61 Ibid., 1887
62 Ibid.
63 Ibid., 1886-7
64 Ibid., 1888
65 Ibid., 1889


69 Ibid.
71 Ibid.
72 Ibid.
73 Ibid.
74 Similar studies highlight the militancy of environmental groups for the conservation of an environment understood as pristine, first nature; rather than a more down-to-earth second nature interpretation, i.e. already a result of human action.

Ibid., 1884


Ibid.


Ibid., 295

Ibid.

The first proposal was entitled *Svaner can Fly* (Swans can Fly), drafted by Håkon Mjelva. It was a formal romantic interpretation of Norwegian culture and care for the environment. However, it did not recognize these values as possible solutions of environmental issues within the Olympic movement.

Relevant to the context described in this section is the argument of Andrew Jennings, who brings evidence that the President of the IOC, Juan Antonio Samaranch, was keen on being awarded the Nobel Prize for Peace. Jennings' opinion is that an Olympic edition organised in Norway would allow Samaranch and the IOC to allude to moral values with which the country has been associated. This would have placed Samaranch in the best position to make a case for his nomination. However, this needs to be contextualized in the bid for the 1994 edition: Sweden, host of the annual Nobel Prize awards gala, was also a candidate. Add this to the historic rivalry between Norway and Sweden and things appear less clear than portrayed by Jennings.


Before 1994, Summer Olympic Games were held in the same year as their Winter counterpart, which were largely overshadowed. Winter Games were a smaller event in scale, economic, social and political relevance. They were organised for the first time in 1924 in Chamonix, France, to include winter sports in the Olympic spectrum. In its incipient format, Winter Games were held by the same country that would host the Summer Games. The periodicity of Winter Olympics were changed spontaneously between Albertville and Lillehammer in an improvised attempt to safeguard the reputation of the Olympic Movement.


Ibid.

Ibid.


This thesis argues that the aesthetic interpretation of the environment manifested was initiated in Albertville, continued at enhanced levels in Lillehammer, and inherited by almost every future Games.


Ibid., 301

Ibid.

“Even when it was clear that the Albertville Games, with their ‘back to nature’ mandate . . ., had inflicted massive environmental damage, the IOC was slow to react. It was left to the Lillehammer Olympic Games Organizing Committee (LOOC) and its Green Games . . . to spur on the development of the IOC environmental policies”. Quoted in Cantelon, H., Letters, M. (2000) The Making of the IOC Environmental Policy as the Third Dimension of the Olympic movement, *International Committee for Sociology Sport (ICSS)* 3 (35), 295.

Ibid., 300

Ibid.


Ibid.

Ibid., 301

Ibid., 302


Ibid.

Ibid., 304

Ibid., 302

His work led to the arrest of six FIFA Officials.

Allegations of corruption among high governmental officials; and bribing of referees to decide in favour of athletes sponsored by certain companies are abundantly documented in his writing.

The first time I heard about Juan Antonio Samaranch was during my year in Paris, when I benefited from a bursary from the Erasmus Programme for 2004-5. A colleague from Atelier Lenormand at Ecole d’Architecture de Paris Val-de-Seine referred to him as Monsieur “Ca-ma-range.” This French expression is pronounced as the name of the above, and means “That which is in my favour”. This was a sarcastic reference to the corruption scandals engulfing the IOC at the time, on which the press was commenting.


Ibid.


58
While business interests have always been instrumental in galvanizing a desire to stage the Games . . ., the public sector has traditionally organized and funded much of the infrastructural investment for the Winter Olympics, as well as accumulating the main debts. Moreover, although private sources of capital, such as television rights and sponsorship, have emerged since 1984, the public sector remains pivotal for the organization of the event”. Essex, SJ., and Chalkley, BS., (2007) The Winter Olympics: Driving Urban Change, 1924-2002, in Gold, JR., and Gold, MM. (eds) Olympic Cities: City Agendas, Planning and the World’s Games, London: Routledge, 49.

Initiators and managers often present their projects to the public in terms of supposed benefits to the environment and society, as well as with regard to citywide and regional economic and employment growth”. Coaffe, J. and Johnston, L. (2007) Accommodating the Spectacle, in Gold, JR., and Gold, MM. (eds) Olympic Cities: City Agendas, Planning and the World’s Games, London: Routledge, 141.

“These ‘benefits’, however, are routinely exaggerated. In similar vein, there are widespread and recurrent accusations that such projects have been partially funded or had their cost overruns met by massaging ‘mainstream’ public service budgets. In this sense, megaprojects can be seen to exacerbate social disadvantage and inequality”. Coaffe, J. and Johnston, L. (2007) Accommodating the Spectacle, in Gold, JR., and Gold, MM. (eds) Olympic Cities: City Agendas, Planning and the World’s Games, London: Routledge, 141.

The arena in Gjøvik was buried deep inside a mountain in a man-made cave, while the Hamar Olympic arena and Lysgårdsbakken ski jump were lowered down in a masterful negotiation with the ground.


For instance, Cantelon and Letters note: "The IOC as a TNO, operating globally, provides an excellent case study to demonstrate how local initiatives led to the IOC environmental policy. These initiatives, in turn, impacted upon other localities interested in hosting an Olympic Games". Cantelon, H., Letters, M. (2000) The Making of the IOC Environmental Policy as the Third Dimension of the Olympic movement, *International Committee for Sociology Sport (ICSS)* 3 (35), 299.


However, the importance of the 1999 Agenda 21 was eclipsed by the corruption scandal associated with Salt Lake City: in consequence of which 20 members were sanctioned and the IOC was reformed; Chappelet, J-L (2008) Olympic Environmental Concerns as Legacy of the Winter Games, *The International Journal of the History of Sport*, 25 (14), 1895.


However, this document was not explicitly required by the IOC as part of the Olympic bid.
The successful case of Turin was not repeated at any other Winter Olympics to the present day. Chappelet observes the organising phase of the mega-event, without being in the position to evaluate how much of the initial goals were realised. Chappelet, J-L (2008) Olympic Environmental Concerns as Legacy of the Winter Games, *The International Journal of the History of Sport*, 25 (14), 1896.

The problem of sustainable development can be read in aboriginal terms. Canadian law exemplifies this idea through the notion of inherent limit, which prevents aboriginal control and use of land and its resources to a limit that would allow the next generations to enjoy the same air, earth and water quality as in the present; (Bratishenko, L., Zardini, M. (2007) *It's All Happening So Fast: A Counter-History of Modern Canadian Environment*, 90) The question of the methods employed to measure these conditions, which often fluctuate, as well as who is in charge of representing the position of these future generations, thus emerges. In this sense, in June 2016, the Canadian Parliament's Standing Committee on Environment and Sustainable Development proposed the creation of a federal advocate for future generations (Ibid.). This was no more than a proposal, but that these ideas are being considered establishes a precedent that can materialize in the near future.


This comment was made by IOC President, Jacques Rogge, referring to the 2014 Sochi Olympic Games. Quoted in Chappelet, J-L (2008) Olympic Environmental Concerns as Legacy of the Winter Games, *The International Journal of the History of Sport*, 25 (14), 1897.

Part 2

Norwegian ‘No-Goal’: Deconstructing the Success of LWOG
Three polemic debates converge to give the 1994 Winter Olympic Games its apparent environmental focus. First, the absence of any reference to fossil fuel trade – a marked characteristic of contemporary Norway – the relevance of which overshadows the popular conception of a country strongly affiliated to the natural environment, raises suspicions on the aims of the event. Second, the term *sustainable development* promoted at the time of the Games deploys an ambiguous set of environmental values, creating a framework for the uncritical acceptance of singular, nation-specific environmental solutions as possessing general validity. Third, a recycled interpretation of the historic past imbued with environmental values and associated with human survival in Norway was deployed by the Games; and advertised in such a way as to silence environmental criticism and portray Norway as a leader in environmental solutions.

The event clearly generated controversy, as the points above were associated with numerous contradictions and counter-examples. This is invoked here to warn against interpretation of the Games as an environmental success, and criticise the unambitious, complacent concerns of the IOC, along with the exclusively local environmental awareness of Norwegian planners. Moreover, this research advocates strongly against the temptation to expand the relevance of Lillehammer within environmental discourse today. Lillehammer provides an important and rich case study in environmental studies, not for its virtues, but for how environmental concerns can be seized to promote interests associated with precisely the opposite of that advocated by environmentalists.

In Lillehammer, architecture became the main channel of promoting the fossil fuel trade, behind a carefully constructed mask of environmental concerns. In preparation for a discussion of this issue in Part 3, the proposition of this part is to identify the inconsistencies between the declared message of Lillehammer 1994 and the material conditions of the political context in which it was organised.

The role in awarding the event to Norway played by Gro Harlem Brundtland, the Norwegian Prime Minister – head of the UN Commission for the Environment at that time – only fuels the controversy still further. Were the 1994 Olympics a marketing tool for the promotion of fossil fuel extracted in Norway? Did they oversee a truthful attempt to project internationally the recently formulated Norwegian notion of sustainable development? Or was the event a genuine projection of environmental values incubated over centuries within Norwegian culture, made in the sincere belief that they could contribute efficiently to finding a solution to the environmental crisis?

According to Roche, mega-events are "large-scale cultural (including commercial and sporting) events which have a dramatic character, mass popular appeal and international significance". Their functions are regulated "by variable combinations of national governmental and international non-governmental organizations". This awards them the status of "important elements in 'official' versions of public culture". In other words, mega-events monopolise local and global institutional resources and the interest of global spectators towards the fabrication and reinforcement of state and institutional imagery. Such mass events appeal to the audience by engendering visions of national identity and the promise of international recognition.

However, the environmental statement enacted in Norway in 1994 was not a consequence of the external imposition of environmental markers developed under the notion of sustainable development, comprised within UN Agenda 21 and later, the IOC's environmental agenda. Rather, it was the transmission of an edited historical narrative which consolidated a state-constructed national consciousness; as well as highlighting
the notion of self-sufficiency, the dominant feature of Norwegian material culture to shape the 1994 Olympic Games. Thus the dichotomies of local/global and national/international, discussed by Roche in *Mega-Events and Modernity*, build up the appeal of the Games and hint at the critical position put forward by this thesis.

Roche explains that mega-events have a “basic two-dimensional structure, as both national and international events, simultaneously presenting a national face to the outside world and to the domestic public. [He understands this relationship as] ambiguous and difficult to evaluate in terms of . . . significance”.

Therefore, the nation hosting the Games may create an image to be shown to the world rooted in a national, local set of values, used by the organisers to claim for the event’s superiority, “a significance in world terms that they could only really justify in national terms”. The international affirmation desired and pursued through mega-events is problematic; local values cannot be projected globally without the deployment of a complex, overarching cultural translation process. This implies an understanding of national (local) and larger international (global) values as a symbiotic system, not one based on competition.

The issues associated with the translation of local/global and national/international appear indispensable to an accurate reading of the relevance of the Lillehammer Olympics to the international ecological crisis. Features of the local culture upgraded to a national profile stem from very specific geographical, geopolitical constraints and opportunities. Taken separately, these conditions may point towards the absence of any unique characteristic of the Norwegian cultural profile promoted at Lillehammer.

The building materials, claimed by the event’s guiding document, the *Design Handbook*, as characteristic of and unique both in Norwegian architectural tradition and how they are used and assembled, are in fact a feature of other cultures in similar environments. Moreover, the romantic local solution to the ecological crisis of using local materials and technology contradicts one-world theories and economic solutions based on avoidance of material and resources monopolies. The Minimum Cost Housing Group, for example, advocated throughout the 1970s for the use of non-polluting reusable construction materials, evenly distributed around the globe. In this way, monopolies could be avoided and the gap between developed and developing countries more easily closed.

We might ask, then, whether the apparent orientation towards the environment of Norwegian architectural culture was justifiable in international terms. While it can be argued that environmental concerns in Lillehammer 1994 were exclusively local, the case for their international validity cannot be defended. Norwegian planners assumed increased relevance at local level, but the sustainability approach marketed in Norway is a weak, inefficient argument when it comes to projecting sustainable development internationally.

The national values chosen to represent the Norwegian image to the world – local materials, environmental awareness, revival of tradition and national and local cooperation – were in contradiction with international discussions on the ecological crisis, which advocated for international cooperation and innovation in resource management, consumption and construction.

Thus, in the case of Lillehammer, the discussion of local/global seems paradoxical at two levels. On the one hand, the commercial function of the Games, associated with internationally distinguishing traits of contemporary Norwegian culture, were not advertised. Natural resource exploitation was not mentioned in any IOC or LOOC Olympic
document during either preparation or the event itself. On the other, those values promoted as unique to Norwegian culture were portrayed in opposition – and superior to – similar values of other nations.
Section 4

The LOOC Design Handbook and Norwegian National Identity

The LOOG Design Handbook can be interpreted as a local adaptation of the wider Agenda 21 issued two years before Lillehammer took place, as a device scaling down the principles enunciated in the UN’s vision on sustainable development. The Handbook made repeated references to the local cultural identity, precisely those missing from Agenda 21. It appears that global networks of control such as the IOC enable a reactionary trend that enforces, instead of erasing the local component of place. However, the document is more likely to be interpreted as a nation-building strategy.

Sports historians argue that Olympic Games contributed to nation-building processes initiated in the late nineteenth and early twentieth century. Roche considers that

in their association with nation-building, mega-events contributed to the development and promulgation among mass publics of notions of nation (national collective identity), nationality (membership or inclusion in the nation’s tradition and destiny), and citizenship (the formal statuses, obligations and rights of participation associated with nationality).

By submerging the spectator in an apparently pacifist form of competition, Olympic Games and mega-events managed to channel rivalries between different groups articulated around geographical affiliations into sport, while simultaneously summoning them under a new order of nation states.

Moreover, since its reinvention by Baron Pierre de Coubertin, the Olympic Movement became “a potent focus for the cultural mobilisation of the new urban middle classes and industrial working classes around the idea of nationalism and national identity”. Yet such events also negated nationalism by providing a favourable context for the creation of “international popular awareness”. This paradoxical situation still stands today at the core of the Olympic Movement’s appeal. While offering the chance for nation states to reaffirm their legitimacy internally, they also allow them to capitalize in political and economic ways on their international position.

Jorun Veiteberg, former Head of the Arts at Norwegian state television, clearly highlighted the objective of transmitting the values of a nation state to the international community through the 1994 Olympic Games. She revealed why, despite their unconcealed aversion to the IOC and how it conducts its business, Norwegians chose to bid twice to host the Games, ultimately winning the 1994 edition. Asked by Jennings why Norway had campaigned so hard for the Games if their overall impression was one of disenchantment with the IOC, she provided a twofold answer. In her words, the aim was to “show the world that a little country could deliver a good Olympics”; and “more importantly . . . to communicate Norwegian values to the world”. Thus, it can be seen that Lillehammer was a project exhibiting the cultural values of Norway at an international level.

Indeed, right from the start of the Design Handbook, it is declared that the Olympic Games are always the focus of considerable interest on the part of the international media. The XVII Olympic Winter Games to be held in Norway in 1994 thus afford Norway a unique opportunity to become a centre of world attention. The Lillehammer Olympic Organizing Committee (LOOC) is desirous that the Games shall not only confirm Norway’s position as a leading winter sports nation, but also highlight the
country’s distinctive features, traditions and national character as reflected in the general attitude to people and society, and in relation to nature and the environment, design and architecture, technology and expertise.  

The study departs from the premise posited at the opening of the Design Handbook that alludes to the requirements of reflecting Norwegian identity through the Games. Elements of Norwegian culture were inserted by the organisers and contractors, in an attempt to convey a tradition of building and living rehearsed through many generations, within the specific climatic and geographical conditions found inside the contemporary Norwegian state. It is argued here that this was an edited version of national identity.

As Tom Wike from ØKAW acknowledges, the Design Handbook was sent to every institution involved in the process of designing the Games. The Lillehammer OL '94 Design Section was assigned to ensure the compliance of "everyone in the Olympic Organization, partners and outside consultants" with "functional objectives"; namely, a coherent, clear, unambiguous, simple, uniform, first-hand and second-hand communication of the vision and the values expressed in the document. The text provided "readily comprehensible guidance and information" to the institutions involved in the organisation and execution of the Games.

**National and Supranational Visions**

To this end, every host country is expected to promote itself as unique and distinct from the rest by means of singular formal signs such as mascots, hymns and architectural icons. The requirement for acquiring a unique, yet improved position in respect to the previous editions (and host nations) pushes the Games to grow in size and spectator numbers. Whatever the Olympic movement can be said to have done for the cause of internationalism since their creation, the games have, in addition, also evidently provided a platform for competitive nationalisms.

Roche deepens the analysis and suggests that mega-events project a supranational condition onto the host country, which may be considered as leading over invited nations. The host nation can "emphasize its claim to having a leading status, mission and destiny in the world international order and world history". In Lillehammer, the euphoria of winning the bid against a location in Sweden was felt to be a long overdue response to the historical imperial dominance of Sweden over Norway.

The iconography proposed in the Design Handbook speaks of an edited version of historical fact, channelled towards reviving a sense of belonging to a Norwegian national identity. This became a tool for controlling aesthetic and functional aspects amid a decentralised Olympic setting. The national objectives stated in the Design Handbook describe the Winter Olympics as "an event that unites and involves the whole country". It should help to "make the nation proud, to inspire and stimulate and to ensure for Norway lasting competitive advantages".

In this sense, the organisers selected which national values to promote.

In the light of the values and main objectives in the vision for an event rooted in Norwegian culture and the national character, and expressing Norwegian attitudes towards people and society, three themes have been chosen for the visual identity: Norway's distinctive features and national character; the closeness that exists between people ('togetherness'); the close link between the people and nature.
In respect to Norway's distinctive architectural and design-related features and national character, the authors of the Handbook identify the uses of wood and stone as inspirational. These were employed from “time immemorial” to provide “shelter from wind and weather”. The organising team extracted simplicity, practicality, soundness, vigorousness, functionality, honesty, boldness and aesthetic appearance as the components of the first theme of design and architecture. Moreover, they allude to primitive inhabitation of the regions corresponding to the territory of the contemporary Norwegian state.

Given that the climatic geographical conditions of that space have not changed, the selection of these materials to construct the venues – a synergetic relationship between building and the environment – seems pertinent. But to argue that the choice of this strategy is justified by national affiliation to these qualities was excessive. First, these building techniques are to be found in every region on Earth with similar climatic and geographical conditions. These qualities did not add up to a distinctive Norwegian feature in the context of the Design Handbook. Second, the recalling of a tradition rehearsed from times immemorial without allowing any space for interpretation and debate undermined the initial premise of an original and creative Games.

Closeness between people was the second national feature chosen for the attention of the whole world. "Norwegian society is more homogeneous and egalitarian than many other societies". From this, it might seem that the concept of equality is embedded in legislation and social institutions to such an extent that Norwegian society is articulated around the individual, whose quality of life is a priority. More cynical commentators might assert that this is facilitated by the extraordinary wealth generated by the world’s largest pension fund, built on profitable extraction and commerce with prime natural resources, of which a large proportion of the world’s stock is to be found in Norway. Moreover, as will be shown in the next section, this premise is indeed challenged by vocal critics. Norway's relatively low population might as well be linked to the care for the individual advertised by this Handbook as a national trait. Thus, the concept of “affinity between people” is described as “the individual as norm, quality of life, friendship, equality, care and consideration, solidarity”. These were to become distinctive Norwegian features of the Games. No reference, however, is to be found to the overpopulation of poorer regions of the world, or solutions to population-related components of the ecological crisis.

The third and last distinctive national characteristic was the close relationship established in Norway between people and the natural environment. This was explained as the result of the external imposition by “nature’s grandeur”, which manifests itself through “moods” that are unpredictable and capricious. "Norwegians have learned to live with nature's grandeur and changing moods. They enjoy their natural surroundings and utilise them to the full". Nature is seemingly personified as a despotic leader subordinating its subjects to its own caprices and will. But what was threatening in the historic past, the source of numerous myths and fantastic stories of Nature’s power, is now the object of enjoyment and utilitarian perception. It seems that Norwegians have succeeded in overthrowing their tyrannical leader and transformed it into a source of growth and richness.

Dwelling further on the issue of closeness to Nature, "enjoyment and utilization of the environment" may have two interpretations: as tourism utilization, whether environmentally aware or not; and in terms of natural resource exploitation. The choice of words was unfortunate; but hints at an interpretation not mentioned in the document,
which may also be seen as a distinctive Norwegian trait: the natural resource exploitation of oil and gas. In apparent contradiction with the ideals of sustainable development, the leading role of Norway in this business is not discussed.

Norwegians, according to the Handbook, respect the constraints and manifestations of Nature and show awareness towards “the ecological vulnerability of nature in an industrialised world”.

Thus, the keywords describing the third distinctive national characteristic are environmental awareness alongside “sensible ecological management”, materialised in non-polluting strategies, outdoor activities translated into a “feeling of freedom” and “unspoiled natural environment”, contrasting conditions such as creative differences between “light and darkness, heat and cold, night and day, seasons, closed and open, foreground and background”, and natural manifestations in the use of materials and symbolic references to “wood, rock, snow and ice, crystals, northern lights, soil and plants”. But are these features exclusively Norwegian? If not, how could it be argued that Norway leads among countries with similar outdoor living habits? These questions are neither raised nor addressed in this document, underscoring its ambiguous definition of Norwegian identity.

The Norwegian national character as well as the closeness between people and between people and nature may describe the Norwegian culture to a more or less accurate extent. However, the Design Handbook goes beyond the national projection of these values and suggest that they sum up to allow the formulation of supranational claims. Norway is portrayed as the best exemplification of their enactment, problematically raising the Nordic country to the status of a leading ethical and moral environmental power.

**The LWOG Pictograms, an Instance of Monumental History**

A possible interpretation of the uniqueness of Norwegian identity lies within the historical and symbolic elements appropriated in the Design Handbook. For instance, the pictograms constituting the Olympic logo reinterpret the painted and carved humanoid forms discovered at Altafjord (Fig. 3). Reference to these rock carvings “emphasises the vision of humanity in the Olympic ideal and the proximity of the Norwegian people to their own historical roots and to nature and natural materials”.

These pictograms were imprinted on varied supports to represent the sporting events, which “conforms with the main themes for the visual identity of the Games” according to the authors of the Design Handbook. Further along, it is stated that this “presentation technique will be unique to Lillehammer ‘94.” Interestingly, one of the figures discovered at Altafjord represents a man on skis, which enables the authors to link Olympic ideals associated with winter sports to prehistoric events which took place in this location.

Norwegian winter sports originated in a fundamental need to adapt to and master extreme natural conditions, making boldness, imagination and creativity necessities of life. These characteristics will colour the visual identity and the crystal pattern must be employed to ensure that this is emphasised.

Winter Olympic sports and Norwegian tradition are thus brought together to legitimize the country’s supremacy over past and future host nations. Yet the archaeological evidence is not sufficient to make this claim. It fuels instead an illegitimate narrative of supremacy.
The figures in question were painted on a rock surface and discovered in the 1960s in five different areas around the head of the Altafjord (Kåfjord, Hjemmeluft, Storsteinen, Amtmannsnes and Transfarelvldalen). Petter T. Moshus and his team’s concept was admired by the Games’ audience, as well as the artistic community. The team of designers attempted to legitimize the idea that the territory of Norway had been continuously inhabited for four millennia. It is not the aim here to dismiss this historical evaluation; but an association of the times when these cave paintings were produced with a constructed and contemporary Norwegian national identity is far-fetched. It is argued here that a more constructive strategy would have attempted to portray present conditions of inhabitation, instead of drawing exclusively on historical interpretations with questionable accuracy.
The source of inspiration of the Design Handbook, the cave paintings of Norway, make reference to a time when material sustainability of life on Earth was not a recognised issue, and when the first settlers occupied these regions and appropriated their land. This occurred at a time when humans’ relationship with the environment was put in crisis: specifically, the latter was a serious threat to the inhabitation of these lands. Extreme weather constantly challenged primitive man to react and increase his knowledge of how to reduce the risks of perishing. It might be argued that this situation laid the basis of the ecological crisis, which may be interpreted not as the result of an unreasonable exploitation of the natural environment, but uncertainty and fear of natural phenomena. The same was valid then as it is today – leading to repeated attempts to control the environment and, more importantly, predict its cycles.

Reclaiming these drawings and placing them in a narrative of ecology and environmental awareness leads to confusion, as implicit values are distorted and the order of events reversed. Historical time is altered, as the past is brought to replace a present that is inconvenient. Drawing on a past when displacement from the territory was achieved through muscular power, and Nature was feared because of lack of means to control it, the aggressive exploitation of the natural resources of these lands is offered a more humane image. In reality, the two issues run parallel and have no interaction whatsoever. The message of environmental awareness associated with these cave paintings seems to distract attention from relevant issues of natural resource management, and to comfort human consciousness, which is increasingly pointing towards the need to contain practices of natural resource exploitation.

Interpreting the design concept of the iconography in terms of historical revival, inserts the concept of sustainable development within the cyclical order of environment renewal. In effect, the event sought to transgress history. Conquering Nature was a matter of survival back then, not a means to increase comfort. The basic conditions of life and simple means of expression used in the cave paintings were in complete opposition to the technological advances which enable part of today’s human population to enjoy increased sanitation and security.

This thesis proposes two ways of looking at the signage design concept. On the one hand, graphic transformation of the cave paintings is equivalent to an attempt to fabricate history. The overall impression is that of a theme park. However, Olympic Games are distinct from permanent representations of fictitious narratives presented in theme parks. Lillehammer aspired to root the event in demonstrable archaeological and historical facts. Hence, a parallel, oversimplified version of history had to be invented to conceive a series of events which are easy to assimilate in the short timeframe of such transient encounters. Furthermore, the historical interpretation is hindered by opposing the ephemerality of Olympic mega-events not surpassing fourteen days, to the multi-millenarian existence of the paintings at Altafjord.

More specifically, the symbolic and historic information embedded in such a discovery are marginalised and over-simplified. Many sources recall the ambience of the Lillehammer Games as a fairy-tale atmosphere. In fact, according to some, the intention of the organisers was to create a fairy-tale opening ceremony. Lillehammer can be read as a theme park on national identity and, implicitly, environmental awareness, where the timeless of the cave paintings is extracted from relevant historical evaluation to become the emblem of a transient edition of the Winter Olympics.
On the other hand, by graphically reinterpreting the cave paintings, Moshus’ design team made reference to a time not constrained by human progress. Thus, through iconographic recollection and interpretation, references to locality, past history, and relations to the environment are brought right to the core of contemporary mass culture and consumption society. The Design Handbook can be read as a response, a reaction from local artists to generalised understandings of sustainable development. However, this reactionary intention, if ever voluntarily attempted, was contaminated by the quest for national rediscovery, hindering an objective, all-encompassing view of the ecological crisis. It is argued here that the intensive national quest exhibited by the event is symptomatic in all the mediums employed for its transmission, including architecture. This raises renewed concerns on how environmental issues are never the object of exclusive scrutiny, and always associated with political or corporate agendas.

However, a critical assessment reveals that such an interpretation is not evident, as the various points imposed on the design process are not documented. There is no connection drawn between the historical facts and the present. It is unclear whether the Design Handbook aimed to market Norwegian culture to be delivered to the international consumer, or was a sincere attempt to portray authentic local values, transmitted over time to the present generation. This study’s interpretation remains faithful to the view that the unifying design document was intended to give a homogeneous appearance to a decentralised Olympic setting and avoided more profound historical, social and cultural national values. The design agenda remained a tool for conveying a unified image; one which superseded the broader, more important, urgent imperatives of the global environmental crisis. The specific case of this document enhances the concerns raised in this thesis on the similar limitations of design practices which are often mere tools to deploy the hegemony of corporate imagery. In this process, they are deprived of agency in acting on the margin of environmental questions.

The authors of the design agenda seem to have acted like anonymous pleasure-seekers hunting for the sensational in the shopping mall of history. Nietzsche recognizes in history, “the great teacher that shows us how to bear steadfastly the reverses of fortune by reminding what others have suffered”. He deplores the lamentable degradation of the understanding of history as frugal experience, not the source of meaningful accounts. He argues that anyone who has learned to recognize this meaning in history must hate to see curious tourists and laborious beetle-hunters climbing up the great pyramids of antiquity. He does not wish to meet the idler who is rushing through the picture galleries of the past for a new distraction or sensation, where he himself is looking for example and encouragement.39

From the use of the cave paintings at Altafjord to the construction of the iconography of the Olympic event (Fig. 5), an abuse of the meanings of uncritical depictions is symptomatic. The danger here resides, as Nietzsche argues, in the uncritical, superficial revival of the tradition of a people, giving rise to misconception and confusion, with perilous political and personal consequences.

Olympic Games seem to tell an exclusively monumental history.

If this monumental method of surveying the past dominates . . . the past itself suffers wrong. Whole tracts of it are forgotten and despised; they flow away like a dark, unbroken river, with only a few gaily coloured islands of fact rising above it. There is something beyond nature in the rare figures that become visible . . . Monumental history lives by false
analogy; it entices the brave to rashness, and the enthusiastic to fanaticism by its tempting comparisons. 40,41

Following Nietzsche, the dangers embedded in the superficial approach to tradition in Lillehammer can be highlighted. The interpretation of the Altafjord paintings was not singular. The opening ceremony was also criticised on the basis of being a frugal interpretation rather than a faithful representation of Norwegian values (regional costumes, myths, etc.). In terms of the reception to the opening ceremony abroad, Roel Puijk contends that “the argument is not so much about whether the ceremonies reflect Norwegian culture in a representative way, but whether the Other approved of what was shown”.

In other words, it was the often uninformed broad television audience that was the judge of the quality of that which was exhibited as Norwegian culture.

The case of the Olympic mascots suggests a similar instance of inaccurate and segmented interpretation of Norwegian history: the country’s unification after the civil war in around 1217, under King Haakon Haakonsson. The marriage of King Haakon’s aunt, Kirstin Sverresdatter’s, to King Filippus is seen as a preparatory moment for this, as it represented the reconciliation of the two rival houses in Norway, the Birkebeiners and the Baglers.43 Starting in 1208, each family ruled over one kingdom. To reach an agreement between the opposing parts, the marriage was organised.44 Rather less emphasised is the violent context within which this unification was achieved. In fact, King Haakon had to escape through the mountains around Lillehammer to avoid being eliminated by the rival groups. His aunt married the opposing leader with the aim of tempering the long-lasting conflict. In limited accord with the historical fact, Kirstin and Haakon became two apparently childlike figures, the mascots of the Games.45

Figure 5: *Logo Figures for the Lillehammer Olympics*
(ØKAW Arkitekter MNAL AS, Oslo)
Such references to medieval history speak of an attempt to revive a conflictive epoch of Norwegian history. This implies recognition of a past state of armed conflict, threat to innocent lives, as well as disputes over territorial control and resources. The choice of the mascots is even more surprising considering that at Olympic Games, it is unusual for a host nation to adopt characters so strongly implicated in a violent history.

If the aim was the revival of a relevant, critical history defining Norwegian identity, the commodification of the protagonists into mascots was surely the least effective way possible of achieving it. Moreover, their portrayal as children may well have involved rewriting of history and regeneration of unifying national desire. Given the quest for profit characteristic of all Olympic Games, this way of narrating history can also be interpreted as an attempt to appeal to younger visitors, striking a sensible chord with the parent-child relationship.

Nietzsche's defence of the conservation of historical practices against cultural modernisation reproduces the social questions asked in Lillehammer in 1994 and, in a broader context, the very existence and development of the modern Olympic Games: a country with strong regional affiliation hosted the Games, which are notorious transnational condensers. In the process, historical and geographical affiliations clashed with the deletion of geographical particularities in favour of the construction of a national profile, which can be easily set in opposition to other national identities.

Arne Martin Klausen seems to imply that Olympic Games represent an evolutionary stage in the continuous construction of tradition and national identity of a country. The question is whether they can be considered the trigger for a successful reinvention of tradition. This study argues that this cannot be the case, as the resulting product cannot be considered tradition, but a grotesque fusion of geographical affiliation presented to transregional, delocalised, uninformed audiences. This fusion takes place against the background of a stagnant history, what Nietzsche terms as follows: "Antiquarian history degenerates from the moment that it no longer gives a soul and inspiration to the fresh life of the present".

The Book of Diluted Nationalism

Thus, an apparently coherent, yet incomplete and severely edited discourse of national identity was delivered to the international audience. Given the failure in Albertville, the clear orientation towards environmental awareness of the Lillehammer Games was interpreted as a large success by local and international commentators. Markus W. Ostenwalder, a well-known Olympic Games collector, expresses the view that one

of the most successful design programmes of the last decades [was] made in the early '90s in Norway. Petter T. Moshus and his team presented to the world an extraordinary and absolutely innovative and consequent design concept. Not only for the host city of Lillehammer, [but] for the whole country. The design programme was the main tool in achieving the goal of presenting a unified image. It featured basic visual elements which could be combined in different ways to serve as a basis for recognition and identification – the Lillehammer emblem, the pictograms, the pictographic emblems, the crystal theme, colours, typography and the mascots. For the first time Olympic design gets a story and a background.

Reviews such this praise the simplicity and articulation of the design concept, yet fail to evaluate or consider its motivations.
Felix Guattari\textsuperscript{54} reveals how such unified images operate through signs and impose suppression of geographical specificity and the enhancement of global systems of cultural and economic exchanges. In \textit{The Three Ecologies}, Guattari argues that post-industrial capitalism, which [he prefers] to describe as Integrated World Capitalism (IWC), tends increasingly to decentralise its sites of power, moving away from structures producing goods and services towards structures producing signs, syntax and – in particular, through the control which it exercises over the media, advertising, opinion polls, etc.\textsuperscript{55}

As reproducible mass-events organised and managed by the IOC, the Olympics qualify as a producer of such signs. The image of Lillehammer 1994 constructed by Moshus and his team, is a set of markers which are interchangeable and can be composed together following the pre-established rules of a chosen syntax.\textsuperscript{56}

While these markers produce a version of national identity, the very attempt to formulate it for international consumption at a global mega-event puts the integrity of Norwegian traditionally-affiliated groups at risk. This study argues, drawing on Guattari, that this superficial portrayal of Norwegian identity leads to its commodification and conceptual dilution. It may well be that the Olympic event, presented as the sum of economic and cultural benefits resulting from international recognition of national identity, might after all represent a disservice to the perpetuation of historical traditional values. Among the disadvantages associated with sports mega-events, missing from all literature consulted, is the reduction in consistency of national identity and introduction of plural competing versions of it.

Earlier in the document, the overall intention of the Design Handbook was described as “assist in making the Winter Games a showcase for Norwegian design, architecture, environment and culture, and in so doing promote Norwegian values, goods and services”.\textsuperscript{57} Although not made explicit in the advertising of the Games, the Design Handbook was imbued with marketing functions. Moreover, design was considered the tool par excellence of articulating the many constraints associated with such events. The function of design at Lillehammer was evident in the ambition to “demonstrate how good design can help resolve complex problems”.\textsuperscript{58} The expression of Norwegian identity was articulated around design and architecture, which became the event’s main tools of conveying an edited national image as shall be shown in Part 3.

In the reading proposed within this research, the Design Handbook was an “authoritative document” created for the use of designers, advertising agencies, artists, craftsmen, architects and other related agencies involved in the organisation, design and execution of the Games.\textsuperscript{59} The message of an imposed Olympic vision is abundant here. Indeed, the document forces numerous constraints upon contractors. Repeated conditional forms of verbs such as \textit{must}, \textit{should} etc. speak of imposition, obligation, and overall control by a centralised institution.

This is not, however, to advocate for the lack of necessity of such a control structure. What is under scrutiny here is the double standard visible in the Design Handbook. On the one hand, the organisers encouraged experimentation, creativity, courage and boldness in the proposals; on the other, they imposed strict limits on the free expression of artists in order to convey a unified impression of the Games. The design programme and philosophy were communicated to the organisers, but they were also offered “guidelines for use of the basic elements”, with the purpose of ensuring “a unified visual profile”.\textsuperscript{60}
At the beginning of the document, a call to non-conformism is made: “Creativity, boldness and originality should inspire new ideas and determine choices.” However, apart from very few exceptions, the intention was to stay faithful to established modes of building and designing. This is confirmed further on, when the aims of the document are described: for example, to give "the Winter Olympics in Lillehammer a unified visual profile of high quality, with the emphasis on Norway’s distinctive features, traditions and national character". Conservative commitment to tradition is distinct from experimental expressive boldness. Such contradictions stand out and could be interpreted as a desire to conceal the choreographing intention manifest throughout the document.

In addition, the Design Handbook fails to define key concepts of what constitutes national identity, limiting such references to a reduced number of artistic and cultural symbols and events. For example, the choice of the colour blue for the emblem is referenced back to the painter Thorvald Erichsen (1868-1939), who "was inspired to portray the 'blue light of Lillehammer' in many of his paintings". According to the Design Handbook, cobalt blue "was first exported from Blaafarvevaerket at Modum, to the west of Oslo, where it was mined, as far back as 1780, and was used in pottery making all over Europe". This study argues that such references to national values and history are useful and do portray an image of the specificity of the place. However, these are only isolated references, which do not help to create a coherent representation of these values, exposing them to commodification within the highly competitive economic environment of Olympic Games.

The search for quantifiable symbolic markers of Norwegian identity was pushed as far as identifying traditional colours . . . from a palette that has been used for centuries in Norwegian folk art and Norway’s cultural heritage. These colours give the Design Programme a distinctive national character.

Referring to a set of colours that, when printed on different supports and exhibited in varying light and atmospheric conditions, would apparently convey a distinctive national identity seems far-fetched. The references embedded in such signs might only be recognised by trained observers, not by the mass public.

National identity rooted in tradition was the result of a process which produced a series of reproducible objects carrying a positivist image of the host nation. This image is summarily defined by markers difficult to recognize for the broader public, giving rise to limitless interpretations, which are often divergent from an accurate depiction of Norwegian tradition. This study holds that the Lillehammer Olympics represented an attempt to divert the aesthetic outcome of the Olympic moment towards promoting a visual interpretation of idealised Norwegian values through a selection of markers stripped of their cultural representativeness and transformed into signs which increased the event’s potential for international circulation.

Equality and Inequality, Two Sides of the Same Olympic Coin

Roche justifies the interpretation of Olympic Games as events impregnated with nationalism. He highlights the more obvious, but often overlooked feature of modern Games: namely, the affiliation of the athletes to national values. He argues that such things as the IOC’s formal recognition of participating athletes only as members of national teams and its rule that national flags and anthems are to be used as part of victory ceremonies underscores the nationalist reading of Olympic Games events. So too does the
long-standing and informal but influential practice in the media of ranking and comparing national performance and success in winning medals.\textsuperscript{67}

This reveals the fundamental contradiction between original Olympic values and modern ones which stand at the root of the event's over-commercialisation. The emphasis on distinction, national identity and hierarchy of events since their revival by Baron Pierre de Coubertin comes in strong contrast with the spirit of equality of the Olympic Games in Ancient Greece. Back then, the athletes seemed to have participated under the Olympic flag, leaving aside their affiliation to one or another social structure. The distinction made between nations in contemporary Olympic Games seems to prioritize competition and growth instead of values of fair play and ethics. The event promotes a vision of a society divided by geographical belonging; not one of unity. According to Gold and Gold, from "the mid-1930s, host nations seized the opportunity to use the Olympics as flagship events that would act as advertisements for their countries and regimes,"\textsuperscript{68} At the same time, the Games are perceived as an opportunity for economic growth.\textsuperscript{69} The Design Handbook reveals the international objectives of Lillehammer, to promote a strong, positive and unified impression of Norway, reaffirm its already established position as a major winter sports nation, enhance respect for Norway's fundamental values and international role, and boost Norwegian enterprises and the country's trade and industry in general.\textsuperscript{70}

However, sports mega-events are often organised to the detriment of precisely those groups who would logically consist their direct beneficiaries. Ordinary people outside the elite structures of a nation state are offered "enduring motivations and special opportunities to participate in collective projects" during Olympic events. Apart from providing the much required spatial and temporal reference, mega-events set the context for "displaying the dramatic and symbolic possibilities of organised and effective social action". Furthermore, Olympic Games influence the citizenry as individual actors by reaffirming their agency.\textsuperscript{71} One might add that this agency is released within safe environments designed to enhance peaceful participatory practices.

However, designed in great detail for a television audience, the event only marginally addressed the conditions of live experience. As some designers argue, concessions needed to be made as far as the detail design of the venues was concerned.\textsuperscript{72} Moreover, not every Norwegian had the chance of being included in the live audience. According to Roche, despite the "inclusion strategies" within the public sphere articulated around such events, they are typically impregnated with "important and distinctive divisive and exclusionary features and dynamics in relation to class, gender and ethnicity".\textsuperscript{73} At Lillehammer, these "exclusionary features" were engendered by fixing a high price for tickets, only accessible according to some sources to employees of the national oil company, Statoil.\textsuperscript{74}

In other words, the host state, after securing the opportunity following a selective, often non-democratic and highly competitive bidding process, deploys a state-controlled image-making apparatus, which usually serves the interests of a reduced section of the population. Mega-events are typically conceived and produced by powerful elite groups with little democratic input to the policy-making process by local citizens. On the contrary, local citizens are typically expected to act as if they welcomed the event that is imposed upon them along with . . . the visitors it may attract. In addition, they are expected to provide the often large
numbers of volunteer workers such events typically need..., and also contribute to their finances through paying to spectate it and paying towards local taxes or funds for it.\textsuperscript{75}

Thus, the promotion of national values in the context of the Olympics is a highly problematic process which legitimizes official versions of the host country's national identity, while excluding large sections of the local population from the audience.

\textit{A Theme Park for National Identity}

In contrast with previous editions, Lillehammer's effort to transmit national values to both live and television audiences and onto the international stage was extended to architecture. The buildings designed for the event were all conceived in the same awareness of the Norwegian architectural tradition.

The initial phase of this thesis\textsuperscript{76} dwelt on the opposition between the "\textit{image of the way in which the natural setting for life in this part of the world configured the architectural culture of its inhabitants}"\textsuperscript{77} and the international context of debate around the notion of sustainable development which heavily influenced Lillehammer. This still stands in the argument put forward here. However, earlier, the broader geopolitical context of an oil-driven economy was not considered. While this thesis maintains that the architects provided a sincere materialisation of an inherited tradition at high standards of design and execution, two facts can now be affirmed.

First, the architects' representation of the relationship to the environment has to be read in abstraction from any reference to the international context. They were disconnected from this context; ignoring, voluntarily or otherwise, many of those debates. Second, the architects refrained from referencing the Norwegian double standard in their work. Whether this was due to poetic license or a conscious decision intended to conceal the ambiguity and violence associated with Olympic Games is unclear. In any case, this analysis will further pursue in Part 3 the argument that Lillehammer was the expression of conventional interpretations of an idealised Norwegian context, framed within the rhetoric of national identity.

At first, the Games were articulated around the idea of subordinating every design decision to the prevalence of the landscape. The failure of Albertville set the standard for a minimal intrusion within the existing environment. Norberg-Schulz expresses the Norwegian desire for unity of the built object and the environment. He argues that "\textit{the settlement and the buildings that compose it do not exist in isolation but as elements of a context that they represent and complement}".\textsuperscript{78} The architecture of the Games thus aimed to reflect and enrich the environment – unlike some preceding editions, when the venues did not relate in any way to the existing situation within which they were inserted. Thus, \textit{closeness to Nature} was applied as a design principle, to emphasize geographical specificity.

As Norberg-Schulz argues regarding his ambition to determine the specificity of Norwegian architecture, his search for the Nordic may perhaps seem a nostalgic reaction to our times' increasing dilution of qualitative difference. Granted, but there is precisely why nostalgia has become imperative – not as a desire to turn back, however, but as a need to preserve the given through new interpretation. We may call this process "creative conservation" and find confirmation for the approach in the eco-crisis.\textsuperscript{79}
Indeed, the Lillehammer Games followed this model of creative conservation and sought to represent local values of affiliation to the environment. Norberg-Schulz' work, as well as that of the architects, some of whom were his students, speaks of the ambition to continue these inherited values into contemporary means of expression and constructive methods.

However, the implementation remained in many respects cosmetic. Despite the undisputed architectural value of the venues designed, their articulation as Olympic setting is problematic. As noted earlier, Olympic Games have often been compared to theme parks. In this case, it could be said that the theme of the Olympic park in Lillehammer is awareness towards the environment. But as often happens with theme parks, the visitor is transported into an idealised world where they are abstracted from the day-to-day. In the absence of any reference, the problems associated with the themes exhibited are left aside in the quest for entertainment. The profound implications of architectural revival seem marginal to the search for profit and the creation of an environmental brand specific to Norway. The brand was created on the ruins of a misinterpreted Norwegian tradition, whereby formal reproduction overshadowed principles of adaptation to the environment.

The Lillehammer Games appear more akin to an artificial construct representing these values, as well as the broader question of sustainable development. Olympic Games are not platforms for democratic discussion of the chosen themes, but become the locus where information is channelled, through associated media flows, to the visitor, according to a script carefully designed by the organisers. The setting is choreographed and controlled so that only selected aspects of the message pierce through the embellished mask of the setting. Thus, both what was perceived as value embedded in the geographical specificity and traditions of Norway, as well as the more universal principle of sustainable development, remained on the level of representation and communication to the local and international audience. It appears that the revival of a national identity did not entail a global projection of environmental awareness. Nor did the idea of promoting sustainable development globally, use an accurate depiction of Norwegian identity. Instead, neither national identity nor sustainable development were accurately implemented, but only summarily represented.

The tradition of affiliation to Nature, promoted among others by Fehn and Norberg-Schulz during the 1970s (prior to the discovery of petroleum on Norwegian territory), was exploited as a cultural asset. Its aim was to declare a commitment to the environment which, 30 years earlier, would have been entirely justified. By the 1990s, however, the role played by Norway in the international petroleum and arms market made its proclamations of environmental concern unconvincing. Lillehammer was better than Albertville at dealing with the environment; but the event fell short of becoming the expression of care for the environment that ecologists and environmentalists promoted then and still promote today.

Thus, the question posed during the earlier phases of the research is answered. However, if the attributes of architectural expression of the venues built for the event were subordinated to the values of a "true sustainable attitude", three years on and with the evidence collected and examined, this can be discussed against the backdrop of an idealised, excessively romanticised interpretation of an architecture rooted in tradition. What remains is the material reading of the architecture of the event conducted later on,
infused with a more critical viewpoint due to the larger reasons underlying a rather artificial revival of the much-promoted tradition of environmental awareness.

**The Missing Footnotes of the Design Handbook**

It could be argued that the Design Handbook would bring the identity of Norway to the international community’s attention. What are the material conditions of this national identity? How did it endure over time and how have its original values been transformed? How are these values made distinct from those of other people and places? Are these values as formulated and propagated, most suitable to approach the broader issue of sustainable development? Regardless of the answers to these important questions, by posing them with the declared aim of showing an alternative nationally grounded version of inhabitance, their ecological implications are downplayed. Competition among nations runs against the cooperation needed to address larger issues.

There are no hints in the Design Handbook of the leading role of Norway in the contemporary world order. Its exceptional wealth resulted from its supremacy in the oil and arms industry, both of which are missing from the features exhibited in the design agenda, not from a specific ethically and morally superior national identity. The principles invoked as constituting the identity of Norway – *closeness* between people as well as that between them and Nature – are common features of people inhabiting similar regions on Earth. Moreover, the selection of historical events presented in the guide allude to a rather dubious environmental consciousness. It may well be that a sensibility toward environmental issues was developed in Norway – but this was translated into a national project rendered obsolete by an excessively mercantile representation.

The signage system consisted of reclaiming a past and turning it into an idealised image of the relationship between humans and the environment. This narrative overshadows the very source of comfort indulging social life in the contemporary world: the extraction, transformation and use of natural resources. An essential component of the ecological manifesto was thus missing from the Games. If the objective was to stage a “green” Olympics, why was nothing done regarding renewable energies? Meanwhile, the Handbook reclaimed the cave paintings from Altafjord which had only recently been rediscovered, and remained hidden for millennia, transforming them into an easily reproducible commodity to help deliver a partial view of national identity.

The logo of the event, meticulously required by the Handbook to be reproduced on all signage elements and venues, summarises the cover-up. The “snow crystals beneath the Northern Lights” that “symbolise the flurry of snow that trails a skier racing through a pure white winter landscape” can be interpreted as the partial revealing of a national identity which was no longer actual, covered by the flickering appeal which accompany Olympic events (Fig. 6).
Figure 6: Crystal Pattern for the Olympic Signage
Source: Extracted from the Design Handbook [1991]
(ØKAW Arkitekter MNAL AS, Oslo)
Section 5

Objections to the Brundtland Report

In Lillehammer 1994, national identity was associated with the overarching notion of sustainable development; whereas prior to it, the national identity of the host country was completely dissociated from global ecological questions, and more closely related to inherited traditions. This can be attributed to Winter Games before Lillehammer being overshadowed by Summer editions which took place in the same year.

The notion of sustainable development has been mentioned on more than one occasion so far in this study. The timeline coincidence certainly fuels identification of Lillehammer 1994 as the first embodiment of the aspirations embedded in the Brundtland Report. It was issued by the Norwegian Prime Minister in 1987, while a speech by the same politician on the topic secured, surprisingly, the Games for Lillehammer in 1988, at its second attempt. Moreover, the UN Conference on Environment and Development in Rio de Janeiro took place amid intense Olympic preparations in Norway, in 1992. Brundtland also headed the World Commission for the Environment and Development (WCED) and was simultaneously Prime Minister of Norway, a mandate which she held on three occasions: in 1981, from 1986 to 1989, and from 1990 to 1996.

Idealism and Pragmatism within LWOG

Roche highlights the relevance played by the Olympic Games in analysis of contemporary cultural phenomena. He is troubled by the way some academics discard mega-events as “trivial, populist cultural ephemera, irrelevant . . .”. To him, the problems posed by such events are problems “of the real world”, as “they continue to provide periodic focal points and symbolic expressions, and arenas for debate and struggle”. In his view, mega-events are to be understood at the intersection of social histories (science, art and technology), sports studies, practical management-oriented studies, and social scientific literature. This renders them necessary references amidst the unstable panorama sketched by ever-shifting capitalist structures.

Perhaps the idealism promoted by the Olympic Movement is necessary if visions in which society can strive and adhere are to be espoused. However, Roche’s acceptance of Olympic events needs to be adopted with critical awareness – for by engendering ideal visions of society, the Olympics reveal only a partial diagnosis of deficiencies and problems, rendering them unreliable in terms of the values they promote. This is why, in the case of Lillehammer 1994, the term sustainable development needs to be discussed with caution: always bearing in mind that it was created to accommodate and pursue the goals of a one-sided vision which does not necessarily aim to solve the ecological crisis. The declared aim of the Lillehammer Olympics, as is common practice at Olympic Games, was to communicate an official version of Norwegian tradition. It would contribute, through sociological mechanisms associated with media and television, to the promotion of a global agenda, yet also to a partial understanding of the ecological implications of natural resource management.

Brundtland’s definition of sustainable development points towards the requirement for the present generation to conserve the same living conditions for generations to come. This seems to refer to the entire array of problems associated with the ecological crisis. However, Brundtland’s 1988 formation was somewhat evasive on detail and appealed to
highly moralistic values without drawing on specific ways of achieving the declared goal. Social inequality, race and gender issues, resource exploitation among others, despite being explicitly mentioned, were not subject to ethical scrutiny; which draws serious doubt on the political and economic intentions comprised in the terminology in the first place.

Jules Boykoff argues that the “idea of improving the planet’s environment so that future generations can enjoy its fruits is a difficult idea to disagree with in the abstract”. The majority of “people wish to promote a healthy, safe environment and are even willing to take action to help – this makes people feel upbeat and proactive”. Alluding to such powerful feelings gives the Report extraordinary power, opening up unprecedented possibilities for channelling mass enthusiasm. Its powerful rhetoric on the environment and positivistic interpretation of the ecological crisis laid the foundations of the Report’s acceptance. Yet critical points remain to be addressed: most notably, still ongoing lack of detail on how environmental protection can be achieved through policy-making.

The association of the Report with the IOC was discussed in the first Part, which looked at various Olympic editions. It has been noted how transnational institutions such as the IOC face difficulty in assimilating the values preached by the Brundtland Report. Internal interests as well as powerful external lobbying have often deflected the attention of the IOC from the noble goals expressed in the Report from 1987. Boykoff suggests that IOC members recommended small gestures, such as reduced paper consumption; and encouraged certain behaviours which support environmental protection. But are these sufficient in making the difference which a transnational institution as powerful as the IOC is capable of?

**Greenwashing, a Common Practice**

This reveals the complexity around translating the Report into action. That the members of the Brundtland Commission did not outline clear markers of imposition and censorship in respect to environmental degradation did not help its cause. In fact, the task of creating this may also be outside the scope of any commission, which can only recommend lines of thinking and inquiry, and has limited mandate to impose them.

The IOC may even remain faithful to values and interests which preceded the shift in environmental awareness advertised at Lillehammer. The argument that while there is a newfound cultural cache in producing goods and offering services that cause less ecological harm, there is also a propensity for big business to do the bare minimum in order to claim the green mantle.

This seems to illustrate the temptations hidden in the Brundtland Report at every turn of the page. Its ambiguous terminology, permissive wording and allusion to flexible limits on environmental degradation represented the easy way out for multinational companies seeking to reduce costs and maximize profit.

Leerom Medovoi connects movements of sustainable development to capital accumulation and sees a direct dependence between the functioning of capitalism and environmental degradation. In his words, sustainability,

emerging as it did out of the “sustainable growth” and “sustainable development” movements, has always referred quite directly to regimes of capital accumulation. . . . sustainability actually concerns itself with damage to the environ of capital, including both the natural and human lifeworlds that its accumulation depends upon.
The acute dependence of capital on environmental destruction adds to the critique of sustainable development by highlighting the incompatibility between the terms. Boykoff goes even further and warns that sustainability “can therefore become a smokescreen for capitalism’s rapacity, a process some prefer to call greenwashing”.93

The analogy with the business of the IOC therefore stands. Corporate environmentalism94 enables promoters involved in fulfilling Olympic ambitions to cover up environmental problems (Fig. 7). In Sydney for example, under “the state of exception, construction firms tied to the Games were not required to submit environmental impact statements”.95 Sydney 2000, acclaimed for its stated ambition to host the first zero impact Olympic Games, in fact enabled long-term environmental damage. While Lenskyj’s critique relates to its lack of honesty and attempt to hide severe environmental disruptions, Briese argues that the retreat of the Sydney Olympic Organisation Committee from the Green Games label – with the claim that it was committed only to hosting the ‘greenest of Games’… – indicate that this environmental focus may have simply been seen as an original way to secure the 2000 Olympics and to enhance Sydney’s global image, rather than a genuine commitment to urban sustainability.96

Adhering to standards of sustainable development, as shown repeatedly in Olympic studies, more often than not covers up severe disruptions in how events are inserted into the territorial, economic, cultural and social contexts of the host country.

Moreover, principles of international environmental law, which usually advocate for the remediation of environmental damage by the agency causing it, are suspended during Olympic events. As Boykoff argues in his account of celebration capitalism, “in the case of greening the Games, the public pays for the private’s misdeeds while the private profits from the public’s largesse”.97

Consolidating Optimism – An Anthropocentric View

What is remarkable about the document issued by WCED in 1987 is that, for the first time since the environmental question was formulated, the crisis was observed and interpreted in positivistic terms. This is what made the concept so popular. As Susan Baker argues in her book describing the concept of sustainable development,

the Brundtland Report made it explicit that social and economic conditions, especially those operating at the international level, influence whether or not the interaction between human beings and nature is sustainable.98

We must observe from the outset that, in the view of Baker, the Brundtland Report explicitly draws on two ways of approaching the environmental crisis, which point towards distinct solutions. On the one hand, the eco-centric vision promoted by dark green environmentalists recognizes that the natural environment has intrinsic value. Therefore, human intervention needs to be modest: relying on small scale constructions using local technology and materials to achieve communal wellbeing. On the other, the anthropocentric view defended by light green environmentalists discusses Nature only in terms of its importance to the perpetuation of human existence. Nature is wrongly seen as a provider. The anthropocentric view expresses confidence in the manipulation of the natural environment and exploitation of its resources for the advantage of humanity.99

The distinction put forward by Brundtland is highly problematic.

In this respect, Lenskyj argues that light green and dark green environmental positions belong to distinct categories and cannot be situated at opposing ends of a connecting
scale. She argues that the Olympic Movement, in its market-oriented objectives, aligns itself with the light green environmental paradigm, which values the environment only as a commodity or economic resource.\textsuperscript{100}

This study would propose pursuing the distinction highlighted by Lenskyj one step further, by arguing that both light and dark visions of environmentalism are anthropocentric and distinguishing between soft and hard exploitations of natural capital. Although not explicitly, economist Nicholas Georgescu-Roegen alludes to the anthropocentric nature of the ecological crisis by defining the economic process as a necessary biological, exosomatic extension of human existence. Moreover, in his view, still

narrower limits to accessible energy are set by our own biological nature, which is such that we cannot survive at too high or too low a temperature or when exposed to some radiation.\textsuperscript{101}

The dependence on a certain quality of the environment for human life collides with the quest for ever-improving quality of enjoyment of life.

\textbf{Figure 7: Poster by Greenpeace}


Such sombre, even pessimistic visions of the ecological crisis and environmental degradation oppose the new vision transmitted in the UN Report from 1987 which was exclusively optimistic. As Baker observes, the

focus on limitations, imposed by the state of technology and social organization, . . . presents a vision of the future that contains within it the promise of progress, opened up through technological development and societal change.\textsuperscript{102}

Anthropocentric optimism is visible in the blind confidence in limitation of environmental degradation through technological progress. An example in this sense is a Norwegian project which attempted to capture the carbon dioxide produced from natural gas factories at Mongstad and transport it onto the Norwegian continental shelf. Should the dramatic, expensive, unprecedented failure of the largest carbon capturing and storage facility in the world warn about the risks of relying on technological progress to resolve the environmental crisis? The same failure is visible in the Olympic Games held in Grenoble in 1968 – when reliance on technology led to disastrous environmental consequences. This is not to argue that such attempts will not ultimately produce positive
results; but during long periods in which such slow, painful processes materialize, either environmental collapse or depletion of available resources will occur.

The positivist tone of the Report may well have been fuelled by over-confidence in technological progress. Yet in the years prior to its publication, Georgescu-Roegen had rejected the excessive trust placed by both standard and Marxist economists in technology. He contends that it is impossible to find any substitute for a limited resource; or increase productivity "of any kind of energy and material". The idea of compatibility between environmental protection and economic development is refuted by Georgescu-Roegen and the Club of Rome's pessimistic interpretations. In what follows, the precision with which the positivistic arguments of the Brundtland Report were demonstrated false by Georgescu-Roegen will be shown. His singular work extracted environmentalism out of the counter-culture into a self-standing academic discipline; and laid the basis for the field of ecological economics.

The simplistic dismissal by the Brundtland Report of the sombre ecological interpretations of preceding decades must be re-evaluated, as it leads to such flagrant confusions. A rather empirical diagnosis of the situation reveals the fundamental distinction which this study would like to highlight: the use of scientific evidence and methodology. The Brundtland Report barely discloses its sources, and the reasons for the selection of the issues covered are largely subjective. In contrast, Georgescu-Roegen explains the findings of an in-depth scientific study anchored in economic fact, extracted from analysis of real life situations. Thus the categorisation of optimistic and pessimistic cannot be made, as the two research corpuses are unequally backed up by scientific evidence and fact.

**Development as Thermodynamic Process**

The environmental crisis had been linked to economic processes, development and growth long before the Brundtland Report. Georgescu-Roegen paralleled the economic process with the thermodynamic one. He argued that, according to the second thermodynamic law, heat flows exclusively from warm to cold bodies. Thus, closed thermodynamic systems tend to transform available stocks of heat into dissipated energy which cannot be used. Similarly, the economic process transforms available mineral resources into unusable energy, increasing the entropy of the closed system of planet Earth, leading to a situation where low entropy (available resources) is exhausted and transformed into high entropy (unusable energy), until the point that it disappears completely. This analogy neatly serves the purpose of this thesis, by showing what the Brundtland Report should have needed to include, for it to acquire the inspirational status it has wrongly been acclaimed for.

In his 1973 essay, "Energy and Economic Myths", Georgescu-Roegen raises the problem of economic education. The circular diagram of the economic process is represented according to a mechanical analogy, excluding intake of natural resources, which are assumed to be infinite, and output of waste and pollution, which are considered inexistent. In his technical refutation of economic myths stemming from association with a mechanical analogy rather than a thermodynamic one, Georgescu-Roegen demonstrates that man cannot create matter and energy. Moreover, he is critical towards the representation of the economic process as a circular phenomenon which cannot affect the ecological balance of the "environment of matter and energy in any way." He rejects the persistence of this myth within the education process of economists because it hinders the introduction of the environment into any analysis.
In Georgescu-Roegen’s view, the entropy law is the only natural law “which recognizes that even the material universe is subject to an irreversible qualitative change, to an evolutionary process”. He comes to the more pragmatic conclusion that “all the economic process does is to transform valuable matter and energy into waste”. However, he draws attention to the idea that “the real output of the economic process (or of any life process, for that matter) is not the material flow of waste, but the still mysterious immaterial flux of the enjoyment of life.”

He defines the environmental issue as the continuous transformation of low entropy into high entropy and further explains the reasons “why we can burn now the solar energy saved from degradation millions of years ago in the form of coal or a few years ago in the form of a tree”. This reveals a revolutionary understanding of fossil fuel as stocks of solar energy and highlights the potential of solar power. As he advises, instead of continuing being opportunistic in the highest degree and concentrating our research toward finding more economically efficient ways of tapping mineral energies—all in finite supply and all heavy pollutants—we should direct all our efforts toward improving the direct uses of solar energy—the only clean and essentially unlimited resource.

The difference between this viewpoint and that of the Brundtland Report who misses to discuss this essential solution to the ecological crisis, is stark indeed. The asymmetries between the “free energy received from the sun” and the “free energy and the other material structures in the bowels of the Earth” make the object of detailed analysis. He highlights six points, which are encapsulated here in an attempt to identify the importance that must be given to his work, which preceded the 1987 Brundtland Report by over a decade.

First, while material structures which are also sources of low entropy are, more or less, easily accessible for use, solar radiation is a flow that reaches the Earth constantly. The difficulties of exploitation are more reduced in the latter case. Second, “accessible material low entropy is by far the most critical element from the bioeconomic viewpoint.” This means that environmental survival depends on the accessibility of resources for future generations as well as present ones. The example of the piece of burned coal that cannot be recovered for future use, and the sunshine available for many generations to come, is illustrative of the overwhelming superiority of solar radiation as an available low entropy source. Third, “there is an astronomical difference between the amount of the flow of solar energy and the size of the stock of terrestrial free energy”. The amount of material structures stocked on Earth which can be used as available energy seems small when placed alongside the continuous flow of solar radiation. One can be considered finite; the other, infinite. However, fourth, solar energy reaches Earth in low densities, which makes its harvesting problematic. Fifth, solar energy has the large advantage that it does not produce pollution. However, production of the means to harvest it does generate waste. Finally, sixth, the exosomatic nature of man makes him dependent on accessible natural resources, while other animals are only dependent on solar radiation and only superficially on environmental resources. The use of these resources by man puts other species in danger as well as his own.

The technological process produces waste, degrading the conditions for human existence on Earth. Nevertheless, if the effort of this process is channelled towards technological advances that can keep humanity out of cosmic harm or exploring and finding other planets that can sustain life, the entropic process described by Georgescu-Roegen would no longer be closed. In other words, since the ecological question is a problem of the pace of consumption, it may well be better to accelerate this pace while fully aware of the
uncertainty of the future. Only time can tell, but what is certain is that such motivations are not detectable in the political document issued by the UN. A convincing discussion about exploration of the cosmos, closely linked to the ecological problems of the planet, is absent from the Brundtland Report.

Despite mentioning the question of cosmic exploration, Georgescu-Roegen seems to dismiss any chances of success, and develops his arguments amid the logic of a planet which amounts to a closed thermodynamic system, dominated by bioeconomic rules. He highlights that during the period preceding his writing, environmental awareness was limited to questions of deforestation, erosion of the soil, depletion of fish stocks and extinction of animal species, as well as the pollution of lakes and rivers. It was only after 1960 that researchers and ecologists began to "challenge the idea of continuous economic growth, which formed at that time (and still forms) the proudest article of standard economic faith". He further holds that understanding of the seriousness and gravity of the ecological issue is contaminated by numerous myths which stop economists from channelling their efforts towards "a solution compatible with the laws of matter-energy".\(^{123}\)

In contrast with the detailed technical and scientific scrutiny of Georgescu-Roegen, which was presented in a convincing, considerable, well-publicised body of research, the Brundtland Report may only be praised for having fulfilled the long overdue task of bringing the environmental problem into political discussion. However, this was imperfectly done, leaving aside the most conflicted questions raised by environmentalists and scientists alike. This is not sufficient to lift the UN Report to the level of an achievement. It can, at best, be interpreted as an initial, imperfect, unsuccessful attempt to merge an economic vision based on growth with increasing and alarming scientific demonstrations of the unviability of such practices.

**The Environment of Future Generations**

Georgescu-Roegen dismisses the idea that maintaining market mechanisms can help avoid an ecological crisis. "Nothing need be added to convince ourselves that the market mechanism cannot protect mankind from ecological crisis in the future (let alone to allocate resources optimally among generations) even if we would try to set the prices ‘right’."\(^{124}\)

Within this mechanism, future generations are seen as competitors, not as descendants. As Georgescu-Roegen argues, the only way to protect the future generations, at least from the excessive consumption of resources during the present bonanza, is by re-educating ourselves so as to feel some sympathy for our future fellow humans in the same way in which we have to be interested in the well-being of our contemporary ‘neighbours’.\(^{125}\)

Analogies between crimes against humanity and environmental crimes as well as the classification of future generations as an endangered species are the logical continuation of Georgescu-Roegen's thought.

The economist described in 1973 all that which was partly picked up by the Brundtland Report fourteen years later. However, wholly unlike Brundtland, Georgescu-Roegen argued for the requirement to limit economic growth to ensure the continuation of certain patterns of comfort and progress. His critique foregrounding that growth trends in development will become unsustainable in the future, was popular in the time preceding the Brundtland Report. For instance, the Club of Rome rehearsed the
Malthusian theory of population growth, concluding towards the impossibility of satisfying basic needs of an expanding population with available resources.\textsuperscript{126}

Herman Daly also points out the fact that a degrading environment is mainly the result of development.\textsuperscript{127,128} The only solution is to curb it; growth cannot go on forever. However, while Daly considers that the solution is a steady state of no growth, Georgescu-Roegen argues that only in a state of degrowth can a system reach environmental balance. Regardless of the distinctions between the two, the needs of future generations, identified by Brundtland as subsistence, protection, affection, understanding, participation, creation, leisure, identity and freedom do not at all require, at first glance, progress for them to be delivered. On the contrary, it seems that development based on accumulation and competition is precisely that which impedes the fulfilment of these values.

More recently, Baker notes that despite the Brundtland Report appearing to embrace and advocate for economic growth, limits should still be imposed by the capacity “of the biosphere to absorb the effects of human activities”,\textsuperscript{129} as well as the requirement to “adopt lifestyles within the planet’s ecological means”. These two impositions are closely linked, even overlap with each other. They could also be interpreted as one being the consequence of the other. However, the Report argues that the lifestyles which would be compatible with the ecological means of the planet are only necessary if it is established that the consequences of current human activity surpass the planet’s environmental balance. Since the agency burdened with this task is not pinpointed, the argument seems superficial and useless.

The Report further comments how the use of non-renewable resources such as fossil fuels and minerals “reduces the stock available for future generations”.\textsuperscript{130} However, what follows highlights its very loose grip on the management of these resources:

> But this does not mean that such resources should not be used. In general, the rate of depletion should take into account the criticality of that resource, the availability of technologies for minimizing depletion, and the likelihood of substitutes being available.\textsuperscript{131}

This is again very ambiguous; the question of who decides what resources are to be used at what point is left to the imagination. More ambiguity is evident in subsequent sections of the Report, which contradict its declared purpose:

> Thus land should not be degraded beyond reasonable recovery. With minerals and fossil fuels, the rate of depletion and the emphasis on recycling and economy of use should be calibrated to ensure that the resource does not run out before acceptable substitutes are available. Sustainable development requires that the rate of depletion of non-renewable resources should foreclose as few future options as possible.\textsuperscript{132}

The permissiveness here raises reasonable doubt as to the agenda of this Report. Linking human agency to depletion limits facilitates, not hinders, access of capital to the market.

Besides the issue of solar energy, the question of recycling is also unsatisfactorily treated in the Report. Georgescu-Roegen argues that complete recycling is impossible. However, often, economists ignore that recycling comes at an economic cost, and do not include this cost in their initial bid for the product. In other words, “waste, just like natural resources, is not represented in any manner in the standard production function”.\textsuperscript{133} He further compares the space in which human life develops as a “finite trash can”.\textsuperscript{134} Similarly, “disposal of pollution is not costless in terms of energy”.\textsuperscript{135} Georgescu-Roegen further holds that to
suggest . . . that man can construct at a cost a new environment tailored to his desires is to ignore completely that cost consists in essence of low entropy, not of money, and is subject to the limitations imposed by natural laws.\textsuperscript{136}

In light of the revealed ambiguity of the Report and the insufficient attention allocated herein to issues such as waste management and renewable energy, Brundtland’s definition of sustainable development as the “ability of humanity to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs”\textsuperscript{137} needs to be revised.\textsuperscript{138}

It is of note that before Brundtland highlighted the importance of sharing resources between generations, Georgescu-Roegen discussed the same notion in a much more critical, clear manner fourteen years in advance. He argued that one

of the most important ecological problems for mankind . . . is the relationship of the quality of life of one generation with another – more specifically, the distribution of mankind’s dowry among all generations.\textsuperscript{139}

Georgescu-Roegen argues that economics can only manage scarce resources for the current generation; it is beyond its scope to handle the necessities of the next,\textsuperscript{140} which dismisses the potential of development through economic calculation as a possible solution. Yet the Brundtland Report invokes this myth again without bringing evidence to contradict Georgescu-Roegen’s verdict. In fact, as far as the present research can conclude, the members of the UN Commission for the Environment were disconnected from scientific environmental discussions of their time, which places the Brundtland Report outside the spectrum of credible sources.

However, Brundtland points towards the need to responsibly harvest natural resources; but does not define how this can be done. Georgescu-Roegen’s perspective not only precedes the definition of the environmental crisis so often considered to be originally expressed in the Brundtland Report, but is also more inclusive and complex. The mathematician argues that each “generation can use as many terrestrial resources and produce as much pollution as its own bidding alone decides. Future generations are not, simply because they cannot be, present on today’s market”.\textsuperscript{141} Georgescu-Roegen discards the possibility of including future generations in the equation of survival, dismissing the very essence of why the Brundtland Report was praised over a decade later. This rejection of a model for sustainable development seems to have been ignored by the collective that authored the Brundtland Report.

The definition of sustainable development in Brundtland makes reference to future generations without specifying how many are to be considered, or what a generation is. Georgescu-Roegen provides a more accurate depiction. He argues that

the demand of the present generation reflects also the interest to protect the children and perhaps the grandchildren. Supply may also reflect expected future prices over a few decades. But neither the current demand nor the current supply can include even in a very slight form the situation of more remote generations, say, those of A.D. 3,000, let alone those that might exist a hundred thousand years from now.\textsuperscript{142}

It is argued in this research that the gravity of the ecological crisis is enforced by allusion to such cosmic timespans, whereas its importance is diminished by expressions such as future generations. Reference to such ambiguous denominations is one more symptom of the "dictatorship of the present over the future",\textsuperscript{143} as Georgescu-Roegen puts it. Hence, the
impossibility of sustainable development, which can only be considered if all generations bid on the price of resources, is demonstrated. As an example:

Should all generations bid from the outset from the total deposit of coal, the price of coal in situ will be driven up to infinity, a situation which would lead nowhere and only explode the entropic predicament of mankind. 144

How can the Brundtland Report, put together by credible researchers, rehearse the same theme – clearly rejected as unfeasible only a few years beforehand?

The imposition of limits to resource exploitation is then exclusively oriented towards the survival of future human beings, assuming that they would require the same resources to enable their existence. In this line of thought, Georgescu-Roegen inquires in conclusion why humans of the present should do anything for posterity. Even more so if it is uncertain that there will be any posterity to leave anything to. Indeed,

it would be poor economics to sacrifice anything for a non-existing beneficiary. These questions, which pertain to the new ethics, are not susceptible of easy, convincing answers. 145

This is why a notion such as sustainable development is obsolete. The very conception of the environmental crisis in economic terms – in terms of development – makes it void of meaning in the context of the UN Report.

Georgescu-Roegen puts forward an alternative agenda for sustainable development. He highlights eight points which would represent a bioeconomic program: prohibition of war and all instruments of war; aiding underdeveloped nations to reach a good, not luxurious life; limiting the population to a level at which it can be fed by organic agriculture; avoidance and regulation of all waste of energy; cease all dependence on extravagant gadgetry until large-scale means to harvest solar energy are developed; eliminating fashion; production of reusable, repairable and easily recyclable goods; and eliminating those professions which have as an end product ever-increasingly comfortable luxury goods. 146 Not only is this programme closer to a definition of sustainable development than that formulated in the Brundtland Report, but as Georgescu-Roegen demonstrates, it is the only possible one given the scientific evidence highlighted throughout his explanation.

Nevertheless, a return to prehistoric standards of life is unimaginable. It “would be foolish to propose a complete renunciation of the industrial comfort of the exosomatic evolution. Mankind will not return to the cave or, rather, to the tree”. 147 While at no point does Brundtland ever state the obvious choice which needs to be made, Georgescu-Roegen pragmatically and repeatedly voices the dilemma of giving up acquired exosomatic comfort for the sake of future generations.

Will mankind listen to any program that implies a constriction of its addiction to exosomatic comfort? Perhaps, the destiny of man is to have a short, but fiery, exciting and extravagant life rather than a long, uneventful and vegetative existence. Let other species – the amoebas, for example – which have no spiritual ambitions inherit an earth still bathed in plenty of sunshine. 149

The driver of entropic degradation of the environment is referred to as thrive towards enjoyment of life, a purely human characteristic. The clear formulation of Georgescu-Roegen’s programme seems more prone to translation into policy than the Brundtland Report.
Moreover, a solution to the ecological crisis cannot aspire to the reversibility of any environmental wrongdoing. The solution lies in a decrease in the rhythm of natural source depletion; directly linked to reducing the pace of environmental deterioration. This would provide time for humanity, during which new interpretations and solutions can be put forward. In Georgescu-Roegen’s words:

A great deal of confusion about the environmental problem prevails not only among economists generally... but also among the highest intellectual circles simply because the sheer entropic nature of all happenings is ignored or misunderstood. Macfarlane Burnet, a Nobelite, in a special lecture considered it imperative ‘to prevent the progressive destruction of the earth’s irreplaceable resources’. And a prestigious institution such as the United Nations, in its Declaration on the Human Environment (Stockholm, 1972), repeatedly urged everyone ‘to improve the environment’. Both urgings reflect the fallacy that man can reverse the march of entropy. The truth, however unpleasant, is that the most we can do is to prevent any unnecessary depletion of resources and any unnecessary deterioration of the environment, but without claiming that we know the precise meaning of ‘unnecessary’ in this context.150

Surprisingly, the Brundtland Report still draws on the myth that the environment can be improved in the future.151

**On Inequality**

Employing the broad term *humanity* in the definition of sustainable development instead of limiting agency to specific power groups, Brundtland dilutes the focus and urgency to protect the environment. On a similar basis, Trygve Haavelmo,152 Nobel Prize Winner in Economics in 1989, criticises the UN commission’s claim that the greatest environmental problem is poverty. Haavelmo “considers that this is tantamount to pushing the problems a long way from ourselves, so that we can be left in peace to continue our growth philosophy”.153 These two omissions enable a situation in which the public can no longer identify who is responsible for the environmental crisis. Harald N. Røstvik, Norwegian researcher and architect, notes that the terms *growth* and *sustainable development* allow for a great deal of arguments to be deployed.154

Georgescu-Roegen is also aware of the issue of unequal development and implicit say in the discussion of the crisis. He recognizes the relevance of those environmentalists who argue that population growth is used to deflect attention from the environmental abuse of rich nations. Those nations position themselves against a halt to economic growth to (supposedly) allow poorer nations to catch up.155 Brundtland was something of a novelty in this sense, inserting the idea “that environmental protection and economic development could become mutually compatible, not conflicting, objectives of policy”.156 This would be achieved by imposing limitations on development and growth in certain sectors of activity in an attempt to favour disadvantaged regions, allowing them to catch up and cover the growth gap.

On this note, Baker accurately observes that the Report does not determine “*when and what type of growth, is or is not, acceptable*.157 One could also add the question of *how* to establish *where* growth is necessary. In other words, the process of assigning development, the parties involved, and the decision-making is equally important as the level of acceptability of growth itself. The Olympic Games illustrate this omission. The implement of such ideas within an Olympic event for the first time defeats the purpose, because the decision on the next Olympic location is not made on the basis of development potential of host regions. Even if that were the case, it would be difficult to
determine whether the Games would ensure the development of the host region if the attractiveness of the site was not itself enhanced by the event.

Among the ways of reaching a sustainable future, and therefore lead humanity closer to equality, the Report highlights mutual understanding, dialogue, negotiation and strengthening of international environmental conventions and agreements. These are very broad claims. It has so often been proven that relying on international environmental agreements is highly inefficient; lobbying often influences leaders to reverse commitments previously made. In addition, many conventions and commissions, as well as their reports, are not binding in nature. Indeed, "while the Brundtland model provides a set of guidelines, it is not detailed enough to determine actual policies".159

What did constitute an improvement brought in by Brundtland was its acknowledgment of the link between need and want. In Baker’s words, the "Brundtland concept of sustainable development is global in its focus and makes the link between the fulfilment of the needs of the world’s poor and the reduction in the wants of the world’s rich". However, it "is difficult to distinguish needs from wants, as they are socially and culturally determined. . . . The industrialized world consumes in excess of these basic needs, because it understands development primarily in terms of ever-increasing material consumption".160 Again, the ambiguity of the Report fuels rhetoric which can work both in favour of suppressing inequality, and against it.

Despite the Report’s admission that “in the end, sustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs”, environmental protection is ultimately left in the hands of the political class, transforming ideal aspirations into pieces of very complex political games. The members of the Commission confess that they "do not pretend that the process is easy or straightforward", and that it may imply “painful choices”; but that “in the final analysis, sustainable development must rest on political will”.161 Questioning this fatalistic assumption may reveal other possibilities – but it is not the task of this research to follow up on this.

The Brundtland Report, despite cancelling previous limits by linking development and sustainable inhabitance of the planet, does not imply the existence of what Baker terms ultimate limits. Baker notes that the “Brundtland conception of sustainable development does not assume that growth is possible and desirable in all circumstances”.162 In effect, the Report highlights that technological and social development must be pursued in accord with the potential for absorption by the biosphere of the actions and by-products of human activity.163 Baker connects this idea to that of ecosystem health, which becomes the reference of- and imposes the limits on – development, so that it can be denominated as sustainable.

Conservation of ecosystem health thus becomes the limit of growth and development in the case of Brundtland. The environment in which development occurs takes the form of natural capital, which fluctuates within certain limits. If natural capital is put at risk, conditions for development are too. Hence, sustainable development is an anthropocentric project; in this approach, the ecosystem is protected because it is indispensable to human existence, not for itself.164 To the link between the needs of the poor and the wants of the rich can be added another, overtly declared in the Report: namely, that between the environment and development. If one can ask who decides the
demarcation between need and want, one can inquire by which parameters the degree of health of the ecosystem can be evaluated.

**Contesting Sustainable Development**

On more than one occasion, the UN Report on sustainable development has been criticised for ambiguity. “The broadening of the concept of sustainable development, coupled with its popularity, has given rise to ambiguity and lack of consistency in the use of the term.”165 Moreover, as some commentators argue, the benefits of the term are overshadowed by the ambiguity the term comes to be associated with.166 Lack of a proper definition enables symptomatic multi-valence in its use, leading to a situation where it can stand both for environmental protection and its opposite, environmental degradation. In addition, the largesse of the concept does not help delimit clear, quantifiable parameters of assessing the sustainability of development programmes.167 For example, Baker exemplifies the ambiguity by commenting on terms such as “sustainable yield”, “environmental sustainability”, and “social sustainability”.168

Georgescu-Roegen draws on confusion around the term growth. For instance, the distinction between growth and development is often overlooked. Georgescu-Roegen urges to “call the combination of the two terms – the first related to the increase in production of certain goods per capita, the latter related to the introduction into the economic process of technological innovations that optimize the use of resources and diminish the output of waste – economic growth.”169 This study argues that use of the word development in the term sustainable development is incorrect, if the array of technological innovations such as the use of solar energy, improvements in combustion processes, or decreasing friction in the technological process, are not clearly outlined. Rather, within the scope of the Brundtland Report, a more suitable term to use is growth.

Not only is sustainable development an empty signifier, but also an oxymoron. Judging by the work of Georgescu-Roegen, along with The Limits to Growth by the Club of Rome, growth and development are intrinsically unsustainable activities. This, coupled with the long span of technological innovation to address global warming and climate change, indicates the idealism embedded in the adjoining of such distinct categories. While development points towards growth, expansion, addition and high entropy, sustainability means multiple limitations to growth, dictated by strict rules and parameters of control unanimously accepted all over the world, as well as low entropy. Hence, any attempt to provide a definition of sustainable development should start by addressing the critique to development proposed by environmentalists in the 1970s.

The anthropocentric reading of the ecological crisis which would lead to solutions such as those implied by the term sustainable development has been rejected. These suppose, as has been shown, trust in future technological solutions to the crisis. Since these solutions are not outlined, the term development is not correct, and needs to be replaced by growth. From here, the dangers of exponential uncontained expansion of capital at the expense of the natural environment are revealed. Only at a moment in the future when technology does offer the means to limit the effects of such expansion, can sustainable development be considered as a faithful description of the objective to safeguard the continuity of acceptable environmental conditions for future generations.
Models for Growth

Georgescu-Roegen recalls the reception of reports such as The Limits to Growth and that of the similar A Blueprint for Survival. He argues that the former was criticised mostly by economists for the methodology employed to highlight the crisis: “Analytical models of the kind used in econometrics and simulation works”. He shows that this criticism is unfounded. This thesis will rehearse just two of his arguments. First, the Report was criticised for using computer simulations to model a negative scenario. Yet the mathematical models and computer simulations made it an object of interest to economists long before the Report was published. Second, it was criticised for employing the “assumption of exponential growth”. Yet the “very theory of economic development is anchored solidly in exponential growth models”. Despite this, the impossibility of “continuous exponential growth”, emphasised by The Limits to Growth is an “uninteresting tautology” according to its critics.

Georgescu-Roegen accepts the accuracy of this critique; but “this was one of those occasions when the obvious had to be emphasized because it had long been ignored”. In addition, he highlights that the Report revealed the element of time in ecological matters. Not only is a period of time necessary to reach superior levels of growth – but it is also required to reach those levels of growth that would ensure responsible consumption of natural resources and aware forms of waste production. This, Georgescu-Roegen argues, is routinely ignored by economists.

However, despite his acceptance of The Limits to Growth, Georgescu-Roegen highlights the lack of scientific evidence behind the Report’s conclusion (based on computer simulations) that only 100 years of growth remain until an ecological catastrophe threatening humankind. The relationships considered in the simulations were not the result of factual demonstrations, but mere suppositions. The “arithmomorphic models” do not take into account their evolutionary variability over time.

Moreover, the authors of The Limits to Growth as well as those of A Blueprint for Survival “were set exclusively on providing the impossibility of growth”. Due to this, they were easily deluded by a simple, now widespread, but false syllogism: since exponential growth in a finite world leads to disasters of all kinds, ecological salvation lies in a stationary state.

Georgescu-Roegen even considers that Daly's condition of necessity of the steady state economy is wrong; the “myth of ecological salvation... consists in not seeing that not only growth, but also zero-growth state, nay, even a declining state which does not converge toward annihilation, cannot exist forever in a finite environment”. Even a stationary state with a constant population would “be continually forced to change its technology as well as its mode of life in response to the inevitable decrease of resource accessibility”. Georgescu-Roegen pushes this still further, contending that a stationary state would not extend the balance between population and resources indefinitely in time; only “a declining one” would.

This thesis entertains the position that the use of resources should be limited by more precise calculation than that appearing in the Brundtland Report. The limits described by Georgescu-Roegen – envisaging the censoring of consumption and fashion, amongst other things – are necessary and would prepare humankind for a longer, less intensive exploitation of the environment. It should not stop technological development, as this would be necessary to face the challenges of an expanding, closed entropic system.
Georgescu-Roegen is not a pessimist as many have considered him. He masterfully plays the role of the biased, but also the unbiased observer. In the former, he deplores the ecological situation and argues that the solution lies in education; while in the scientist’s shoes, he reveals the misconceptions that fuel an unhealthy growth pattern. He therefore highlights choice as the most valuable weapon against environmental degradation. Either one chooses to progress spiritually, suppressing material consumption and comfort, or one accepts that the accelerating pace of enjoyment of life will inevitably limit the spectrum of human survival on this planet, unless drastic social measures are imposed on ever-greater sections of humanity.

_The Ball is in Your Court_

Both the Brundtland Report and Georgescu-Roegen employ the first person plural when discussing the shortcomings and solutions of the crisis. A critique of _we_ is urgently required. The reference to humanity as a whole is misleading. It implies that the responsibility of environmental deterioration is equally distributed among all members of the group called humanity. The truth is that lack of inequality of voices between generations is similarly manifested between members of the same generation. The determining agency implementing these ideals is not humanity as a whole, but certain circles of power which control the flow of capital. This foregrounds the suspicion for the choice of an Olympic event to materialize such environmental ambitions. By invoking the extended visibility of such matters on the Olympic platform, these ideas are submitted first to the elites of host countries within a context that offers limited increase in enjoyment of life in the long run.

Quoted by Røstvik in _The Sunshine Revolution_, Lloyd Timberlake, environmental expert and editor of _Earthscan_, makes the following criticism in 1988:

> The world will judge Norway by what you do to follow up the Report. Norway is a homogeneous, uncomplicated country with one language and no major conflicts. Norway also has a prime minister who is wholeheartedly involved in the cause. How is the rest of Europe, with all its conflicts and antagonisms, going to manage to follow up the Brundtland Report if Norway cannot? 183

One year later, he follows up on the previous challenge:

> The eyes of the world are turned upon Norway. Upon the Norwegian government. If the Norwegian government’s follow-up of the ‘Brundtland Commission’ Report remains as non-committal as it is alleged to be, it will be an enormous disappointment to the international environmental movement.184

As mentioned earlier and shall be further discussed in the next section, more oil and gas business followed the Report; while the Lillehammer Olympics were held seven years after its publication. It should also be reiterated that environmental claims were added to the Olympic bid after the Games were awarded to Lillehammer. One can then speculate here that the moment the Norwegian government took over, it became a showcase for good intentions, aimed at silencing criticism similar to that of Timberlake.

Upon further reflection, it seems that the environmental agenda in Lillehammer was constructed to deflect attention from the authentic purpose of the event: consolidation of the position of Norway in international commerce of natural resources such as petroleum, oil and gas. It can be argued that this represents the uniqueness of the Lillehammer Games. Following Roche, this feature fell coherently into place in the
contemporary world order, but was not emphasised as such and not transmitted as a fundamental mass characteristic of the event.

Puijk argues that the focus fell on “traditional Norwegian elements” because of the historical association in Norway between winter sports, mainly cross-country skiing, and the rural tradition alongside “former national sports heroes”. Moreover, stressing modern aspects of Norwegian society and culture, such as its importance as an oil-producing country, would hinder the potential for the “production of a distinct identity and media image on the international arena”. Given the information revealed in this study as well as the opinion of more critical voices, presented in the next section, this thesis disagrees with Puijk’s view. An ethnographic study, such as that produced by Puijk, is partially limited by the field: tracing clues on that which is visible, rather than occult. One of the hopes for this study is that it manages to introduce a greater variety of issues and questions than previous attempts to scrutinize Lillehammer 1994 have done.

It can therefore be argued that the organisers did not simply choose between tradition and the modern economic status of Norway. Instead, they cleverly used one to enforce the other, by way of getting the best out of both marketing campaigns under the protective umbrella of the IOC. Discrete references to the geopolitical status of Norway were repeatedly made in the Design Handbook, which proves that commercial aspirations well beyond tourism and Olympic memorabilia were pursued. The status of Norway as a Scandinavian country with access to valuable petroleum and gas resources, offers the state a privileged position in the world order. This enabled the benefactor of the event, the Norwegian government, not to have to spare anything in financial terms: raising the question of what was at stake for this oil-invested government.

The government’s reliance on oil and gas – a key distinguishing feature – was not portrayed in the event. In the absence of tangible evidence, one could reasonably speculate that this was because of it hugely contradicting the environmental agenda put forward at the Games. What was on show in Lillehammer was, in essence, a fiction of environmentalism – which is in opposition to what was not shown, natural resource exploitation. The latter appears in the background as the justification and driver of the international sports event. The stakes in this case were higher than usual: the result of this interplay of standards was a confused environmental image, placing access to resources and a clean environment for future generations at great risk. This double standard needs to be addressed in order to signify the dangers of appropriating false environmental standards as generally valid.

In what follows, the double standards of Norwegian politics, and links between the media and natural resource industry, will be explored through the work of architect Harald N. Røstvik, among other critics. The study will then move towards reading certain trends in neoliberal capital movement and accumulation within mega-events (Boykoff): which explain how it became possible to merge such opposing lines of argument within one very well defined political and geographical context. This is even more contradictory, as these opposing trends occur in a social democratic state. Next, in Part 3, the role of contemporary architectural practice as a translator of disjunctive political attitudes regarding sustainable development practices will be discussed.
**LWOG, a Fossil Fuel Affair**

Environmental awareness, although an essential part of Norwegian tradition, stands at odds with the strong contemporary lobby for petrol and gas exploitation around the world, restlessly pursued by Norwegian companies. The Norwegian economy’s reliance on fossil fuel is in contradiction to the conclusions of the Brundtland Report, the Bergen Conference and the UN environmental summit in Rio de Janeiro, Brazil: all of which recommended abrupt disconnection from fossil fuel exploitation. The reliance on the Oil Fund (now renamed the Pension Fund) was never alluded to in the 1994 Olympic event. Moreover, its enablers did not draw attention to this contradiction in their work.

Norway is one of the top polluters and a “climate-damaging nation”. According to the Carnegie Institute of Washington, Norway is the largest polluter per capita. In 2004, only ten years after Lillehammer, Norway was responsible for the extraction of what was equivalent to 687 million tonnes of CO2, of which 92% was destined for export. CO2 emissions per capita in Norway range from 10 to 12 tonnes per year. Other nations, termed “future focused”, aim towards a target of 1 to 3 tonnes per person per year. In addition, if “we were to include all the annual oil and natural gas exports from Norway and divide it by the number of inhabitants, it would be another 149 tonnes CO2 per person per year on top of the 10-12”. This places Norway above Australia, which ranked second with only 44 tonnes of CO2 per person per year. Third in this ranking came the Middle East and Canada, with roughly 28 tonnes; while each American citizen emitted 15 tonnes. As Curtis quotes from a UNEP Report: “If all countries in the world were to emit CO2 at levels similar to Norway’s, we would exceed our sustainable carbon budget by approximately 758%.”

**A Tentative List of Double Standards**

Mark Curtis’ *Doublethink: The Two Faces of Norway’s Foreign and Development Policy* evaluates the repercussions of internal decisions which, contrary to its global ethical claims and constructed image of environmental custodian, erode human rights and climate change progress, and offer it competitive advantages in the resource extraction market. He points to five issues which condense how global breaches of human rights and environmental degradation are favoured by Norwegian government.

First, he reveals the investment of the Norwegian pension fund in companies which abuse human rights and the environment, despite it supposedly having established ethical criteria in this regard, and taken active measures to exclude problematic companies from its investment portfolio. Second, the Norwegian oil industry, a massive contributor to national wealth, is active in states that breach human rights. Third, the Norwegian arms industry raises questions, not for its size, but the destination of its products, mostly used in offensive operations by NATO countries. Fourth, he criticises the passivity of the government in sanctioning private and state-owned Norwegian companies involved in degradation of the environment. Fifth, the oil state enforces practices of market privatisation which benefit the in-house petroleum and gas industry, at the same time as advocating for other countries to drop such practices.

Maybe the most plausible explanation of these contradictions lies within what Røstvik calls the Norwegian *double standard*. This notion may help explain how apparently strong
environmental rhetoric can be practiced alongside the fiercest international advocacy for natural resource exploitation. Oil exploitation in Norway was beginning to reach its peak in 1994. The zenith was attained around the turn of the millennia. The proliferation of this double discourse became common practice among Norwegian politicians, such as Gro Harlem Brundtland and Jens Stoltenberg. As Røstvik, among others, notes in Corruption the Nobel Way: Dirty Fuels & the Sunshine Revolution – a Witness Report, published in 2015, this practice still goes on. Considering events after the completion of the Olympics in 1994 gives no reason to believe that there was any intention to translate the much-preached environmental discourse into action.

He expands on this throughout his writing; at least four points of interest to this thesis can be identified as follows: armed conflict and inequality are preferred in order to create a favourable context for an industry which attempts at all cost to inhibit external criticism, while rejecting renewable energy because fears of profit loss.

**No Peace**

First, despite hosting the Nobel Peace Prize ceremony annually, Norway is involved in wars around the world. Moreover, through production of warfare equipment, Norway is one of the most active players in the international war industry, producing ammunition, napalm and weapons. Norwegian fighter jets, alongside fleets from other NATO member states, bombed Libya in 2011. However, Røstvik argues that before the war in Libya, Norwegian companies were making repeated attempts to obtain lucrative contracts to develop the dictatorship’s oil fields. Moreover, he finds evidence that the war in Iraq considerably increased the Norwegian weapon and military services industry’s exports. This makes Norway unquestionably the world’s second largest arms exporter per capita, after the US, leading Røstvik to question whether the title “defence industry” should not be replaced by “attack industry.”

That the Norwegian government is an important exporter of arms, ammunition and napalm, owning companies which fuel conflict by providing warfare technology, contradicts the idealistic aspirations commonly associated with the Nobel Peace Prize. Its intention is to encourage and reward individuals or organisations that distinguish themselves by remarkable efforts “for fraternity between nations, for the abolition or reduction of standing armies and for the holding and promotion of peace congresses”. Such words belong to other times, when Norway was not the geopolitical power it is today.

Indeed, times were very different when Alfred Nobel formulated his will establishing Nobel Prizes for physics, chemistry, medicine and literature to be awarded in Stockholm; and the Peace Prize in Oslo. At that time, Norway had never attacked or appropriated foreign land; and its Parliament was a supporter of international peace movements. Moreover, Norway was a functioning democracy governed from the neighbouring capital, Stockholm. As a result, the Scandinavian country did not have its own foreign policy.

Røstvik describes Norway as a social democratic oil state that “has positioned itself all over the world through its fossil fuel companies, predominantly in the most corrupt regimes”. The Democracy Index 2011 highlights that many petroleum extracting and oil producing states are authoritarian regimes. That world oil prices have dropped substantially in recent years has forced states like Norway, which have an interest in the oil industry, to reach agreements with such states, in disregard of ethical and human rights issues.
Silencing Environmental Criticism: Our Oil is Safe!

Second, the Norwegian state makes substantial efforts to suppress criticism aimed at it. In 2006, participation to the Oil Fund, later known as the Pension Fund (Government Pension Fund Global, GPFG) was opened up to Norwegian citizens who, for the first time, had the possibility to acquire a small part of the Fund. Many critics believe, however, that what appeared as a generous, democratic opening up of Norwegian wealth to its citizens, was in fact a political decision designed to silence increased criticism among the population, who worried about the destruction of traditional Norwegian values associated with environmental protection.201 Around that time, it had become clear that by exporting such vast amounts of fossil fuels, despite keeping the domestic environment clean, the rest of the world would inevitably suffer the consequences of burning them.

In 2005, 20,000 Norwegians were tempted by Statoil to buy shares at a reduced price. A considerable amount of the shares of the company (6%) was transferred into the ownership of Norwegian citizens. Røstvik argues that their interests aligned with those already working in the industry. In other words, their co-interest was that the oil business continued to prosper.202 Røstvik reveals that, at the time, top Statoil employees feared that only limited oil reserves remained in the North Sea; which was why the risk of not finding any more fields was shared with the population. The result was that criticism of the industry was muted, as part of the population was now directly interested in the evolution of their shares.

Moreover, in 2006, Statoil invested 9 billion euros in goods and services in Norway. Røstvik notes that 1.5 billion euros of that money ended up in Rogaland, the county in which Stavanger hosts Statoil’s headquarters. Such a large amount of money sent to a region of only 200,000 inhabitants raised suspicions. According to the Norwegian researcher, this "appeared to be more than enough to silence most oil critics and please the oil services company employees as well as the taxman and the pizza shop owner on the corner."203

Røstvik offers further staggering statistics. In 2010, the amount spent on goods and services by Statoil was 16 billion euros, of which 12 billion were destined for Norway. While this can be interpreted as an effort to please the population and silence potential criticism, it can also be read as an investment in the local economy to boost conditions for the business. Regardless, the following arguments give credibility to the former alternative: 69% of total Norwegian exports comprised of oil and gas;204 among a population of around 5 million, fully 200,000 Norwegians now work in the oil and gas industry; and the spending in Rogaland multiplied by four between 2006 and 2010.205 All in all, it seems that the country is overwhelmingly dependent on oil and gas exports. In an effort to defend and enhance this industry, large sums of money were spent to improve infrastructure, and a significant proportion of the population was involved.

In addition, even before Lillehammer, for critical people with critical views, Norway is . . . a difficult place to live and operate. The alternative truths are difficult to present to a broad audience. Inconvenient truths are not popular, especially not if they question the beauty of our oil, natural gas, hydropower, and arms exporting industries that feed us.206

In his critique of Norwegian society, the Bergen architecture professor argues that Norwegians
have turned into a shrewd nation where climate change discussions are marginalised and the radio and TV studios are manned with people that do not seem to worry about climate change.\textsuperscript{207}

He feels it necessary to inform his audience that “around us climate change is happening – now – and [Norway is] one of the fossil fuel pushing nations, one of the key suspects”.\textsuperscript{208}

Hence, the increased reliance on the Pension Fund had the result of limiting critical voices against the intensive exploitation of natural resources. As a society, [Norwegians have] forgotten how to blow the whistle. We have gone from a critical-thinking print-press culture to a spoon-fed TV culture in a few decades. The level of cultural and ethical debate seems to have been lowered. Philosophy is ‘out’. Counting money is ‘in’. Wealth leads to power. Intellectual capacity leads to power only if it can generate wealth. It is a sad and rotten decline.\textsuperscript{209}

A critical position is difficult to construct, as the establishment keeps on hammering their message and dominating most media arenas and channels. Norwegian media hence rarely reflect the activity of the movers and shakers out there, those that fight to reveal the truth but have a hard time getting access to the media. As a result, the readers lose out on crucial alternative views and the debates become less exuberant and remain predictable.\textsuperscript{210}

The role of the media is very important in disseminating environmental awareness. Røstvik detects a decrease in variety and a marked tendency to channel media rhetoric against a fossil fuel-friendly attitude. This one-sided message dominates the arena. This leads to some difficult questions about roles and freedom of speech. Authors that want to publish in Norway play along with a system that does not seem very social democratic. It rather seems to be comparable with controlling regimes that we do not want to be associated with.\textsuperscript{211}

In other words, there are suspicions that the country which hosted what many argue to be the first environmental Olympic Games tunes out criticism of its natural resource exploitation industry. Røstvik, an architect, sees his work on renewable energies lacking the visibility which an environmentally friendly government would surely give it.\textsuperscript{212}

Røstvik concludes that journalists invited by the Directorate of the Norwegian Agency for Development Cooperation (NORAD) to visit projects in the developing world and comment on them, failed to provide an accurate account. Too “many such reports have had the character of sheer praise and the necessary critical distance has not been established”.\textsuperscript{213} This distance towards problems related to the environment only increased in the decades following the discovery of petroleum in the North Sea.

Røstvik also considers that journalists commissioned by the Norwegian state to travel around the world and write about the country’s aid programme in developing countries cannot remain objective.\textsuperscript{214} While being paid by the same organisations which promote the interests of the fossil fuel and arms trade, they cannot but convey an idealised, romanticised image of Norway. He expresses his confusion over press employees describing idyllic geographical locations in Norway which either do not exist, or are much less appealing, in words which compete with and surpass similar attempts by Norwegian tourist brochures.\textsuperscript{215} Røstvik further highlights the role played by publishing agencies in reducing the visibility of critical voices arguing for renewable energies. Røstvik even notes that a survey of books about Norway also reveal an idealised image. “Most books
about Norway paint a glossy picture of beautiful natural landscapes, waterfalls and a vernacular architecture that now hardly exist.”

As a further illustration of how the contemporary image of Norway is constructed, not inherited, politicians have sought to be perceived by the public as defenders of environmental positions. Their work seems limited to creating an expensive image of environmental action. Røstvik goes as far as exclaiming that politicians have used this [environmental rhetoric] to build their personal reputation as good Samaritans . . . Building such images cost a lot of money and it takes a lot of obedient journalists to do the image-building job.

No Equality

Third, Norway is a class-driven society, in which the extraordinary wealth of those involved in the oil industry has created a shift: condemning other, less favoured Norwegians to having to leave their homes. This stands in contradiction to references to Norway as an egalitarian state, clearly stated in the Design Handbook and marketed as a distinguishing feature of the Nordic country.

It can be assumed that such conflicts and contradictions found a favourable breeding ground within the Olympic Movement as the relationship of the former to the issues associated with the ecological crisis is conflicting, at times, even antagonistic. It is undoubtably that the movement remains unquestionably an emancipatory instrument which resounds with the original ideal of equality inherited over the centuries from the inception of the Games in Ancient Greece. Over recent decades, it has incorporated concerns regarding the environment. According to Roche, it is seen as a significant force in the promotion of a genuine universalistic humanistic ideology. Also, arguably, it has been a largely progressive force as far as working-class and women athletes are concerned. The same could be said about the Olympics, in the post-war period, in relation to racism.

Nevertheless, the decisions and actions of the IOC seem to contradict the Movement's declared humanistic values of peace and equality. The IOC has repressed equality, ignored repeated international criticism, and sided with extreme political positions: contributing to the infringement of human rights and proliferation of discrimination. The 1936 Berlin Olympics were only the most extreme example of this; followed by Mexico City 1968; Seoul 1988; and Beijing 2008.

This multivalence of extreme positions – at times, advocating for democratic values; at others, making strong statements against them – points towards the essential incoherence of the Olympic Movement, which reaches large audiences, yet is easily manipulated from the inside, as its members are not accountable for their actions. The force of this undeclared political agency does more harm than good, as it can so easily shift from one position to another. Associating notions of environmental awareness with unaccountable institutions such as the IOC allows for an opposite result to that expected.

Often, host cities and nations have exploited this ambiguity, and Norway was no exception. As Røstvik explains, there is a distance between how the country really is and what the image of it appears to be. The Norwegian example is particularly puzzling because of a great number of double roles we often find ourselves in as a result of our huge vested interests in fossil fuels, the arms
trade, and many other things . . . Yet we seem to manage to fool the world to think that we are peace-loving and kind.221

Moreover, critics highlight the lack of commitment of the government to global redistribution of wealth. Curtis is critical of the exponential growth of the market value of the Pension Fund, and the relatively small amount allocated annually for foreign aid.222 In addition, Curtis notes that despite Norway's almost exclusive internal reliance on electricity produced in hydroelectric plants and its adoption - among the first nations to do so - of a carbon tax to address climate change, it emits 2% of the world's greenhouse gases, a large amount when considering it only has 0.1% of the world's population.

Indeed, the promise of the Norwegian government to make the country carbon neutral in the near future will be achieved by acquiring carbon reductions in other countries: to compensate for emissions from internal oil and gas exploitation and the burning of that fossil fuel in regions outside Norway, which the government does not intend to reduce.223 This will detract from the opportunity of other countries to progress. Less developed countries need cheap energy to develop, and if they sell their share of carbon emissions to countries such as Norway, there is little hope they will do so. Hence, apparent compliance with international standards of environmental conservation is achieved at the cost of promoting international inequality. As Curtis asserts,

there is now widespread recognition that carbon offsetting - the centerpiece of the Kyoto protocol and a key plank of Norway's climate policy - is ineffective and unjust and that it allows big industrial polluters to conduct business as usual.224

The objective of Røstvik's criticism is to trigger an alarm over the risk posed by the government's reliance on fossil fuel income (as though the oil era will not ultimately come to an end), and inhibiting of investment in renewable energies. Røstvik's attitude counter-balances the sombre evidence and even darker conclusions about how the country's contemporary image is contradicted by so many double standards. He argues that

the grim but useful and exciting truth behind the Norwegian 'miracle' and contrary to what some observers abroad have predicted, Norway is not at all the next super model. On the contrary, it is heading for a steep downhill fall if climate change and environmental taxes lead to punishing the use of fossil fuels.225

No Renewables

This leads to the fourth and final aspect of the environmental claims over which the Norwegian double standard casts a long shadow. Counterintuitively, in 1994, no mention was made of any interest in investigating renewable energy sources. The trend was already in place and numerous projects already built around the world had been advertised since the 1970s. Why is it, then, that the Norwegian Olympic Games, calling, if not for environmental sustainability, at least for environmental awareness, did not include any new renewable solutions? The competition here with the fossil fuel trade is obvious, but can one assume that this impeded the advertisement of new renewables in 1994? Interestingly, as was shown, references to renewable energies are also very rare in the Brundtland Report.

Since petroleum was discovered in the North Sea, the wealth of the Norwegian state has grown dramatically, as profits from state-controlled oil companies have poured in. However, this came with the danger of inflation, should it all be invested into Norway. Therefore, politicians agreed to establish the GPF in January 2006. The agreement was, since 2001, that no more than 4% of the yield obtained over a year could be used in the
government budget. With so much money to be invested, the government employed private financial operators to ensure constant growth for the Fund. Before 2010, the Fund invested in tobacco and arms companies, for which it was criticised on numerous occasions: to the point that it was forced to sell them due to growing external pressure.226

One of the initial intentions of establishing the Oil Fund was to diversify the risk and invest part of its profits in other, less environmentally damaging industries. Officials consider it a device to conserve the wealth of the country for future generations of Norwegians. The Fund’s decision to retrieve from 52 countries because of their interests in coal mining and commerce seems compliant with risk diversification expectations. Moreover, the Fund recently pushed for companies such as British Petroleum, Royal Dutch Shell, ExxonMobil and Chevron to reveal plans to tackle climate change.227 However, it also makes divergent statements. For example, the proposal to allow the Fund to invest in renewable energy infrastructure, “to the bewilderment of many in Oslo”, did not form part of the 2016 plans drawn up by the finance ministry for the Fund.228

Proof that the government did not translate the values exhibited at Lillehammer into action lies in the fact that today, the Fund is still one of the main investors in coalmining companies and coal-based utilities.229,230 The withdrawal from 32 companies due to environmental and climate concerns had no material consequence on the Fund’s assets in the industry.231 As the GPFG grew in size, it became clear that the best way of making large profits was to secure the economic environment for the fossil fuel business. What better way of doing so than by investing in more fossil fuel? Curtis notes that investments by the Fund in renewable energy were 100 times smaller than the fossil fuel industry.232 His conclusion looms large:

Together with the failure to actively invest in companies promoting best-practice, Norway is in effect reinforcing unethical corporate behaviour and failing to use all the influence available to it to promote positive change.233

Despite arguing to do so, the Norwegian state does not push towards renewable energies. The country does not meet its carbon dioxide reduction targets under the Kyoto Protocol. For the period 2008-2012, Norway was set an objective of a 1% increase in emissions compared with 1990. Yet only because of the global financial crisis did Norway end up increasing its emissions a mere 10, rather than 20 times (as had been predicted before the crisis broke out). The reasoning put forward in “Kyoto, CO2, fossil fuels subsidies and renewable energies”234 indicates that the problem of CO2 emissions was never addressed in Norway.

Instead, the Norwegian government seeks alternative ways of lowering its disastrous statistics. It works on expensive and, many argue, unrealizable mega-projects. For instance, the natural gas power plant at Mongstad was advertised as the first large-scale project to capture CO2 emissions at source as briefly discussed in the previous section. The by-product of gas production was to be transported into underground storage on the Norwegian continental shelf.235 The plant, the first of its kind, was compared in its importance for human evolution to the moon landings. Many criticised the large sums of money invested in this project – which has not been implemented; but retains the commitment of the government. It vows its delivery by 2020. The project can be seen as an honest attempt to solve the problem by eliminating the consequences. However, some argue that the abundant resources employed should have led to more encouraging results. It is argued here that its failure of realisation thus far has left the Norwegian
government vulnerable to criticism from activists, who contend that it was only ever an image cleansing project, not an air purifying one.

Further, Carbon Capture and Storage (CCS) is seen as an important means to reduce carbon dioxide from the atmosphere, avoiding the consequences of increased fossil fuel consumption. However, this proposal cannot be a solution to CO2 emissions caused by fossil fuel burning, because by the time positive results are obtained, it will be too late. “The UNDP has stated that under planned rates of deployment CCS systems ‘will arrive on the battlefield far too late to help the world avoid dangerous climate change’.” Curtis refers to studies estimating that CCS technology will only become viable at a global level in 2030, when the time for relevant environmental measures to be taken will long have passed. He concludes that “CCS could be at worst a distraction and at best just one technology among many others that must be deployed to address climate change.”

If, as Roche argues, mega-events have the function of anticipating certain trends in the universal evolution of modernity, the thesis of this research should be questioned. For it may well be that the idealised environmental image will materialize in the future. The alarming acceleration of climate change, however, against which Røstvik and others have been warning for more than three decades, does not allow such indulgent, optimistic projections. The discussion of CCS is a case in point: The International Energy Agency (IEA) 450 Scenario, the matrix on which the Norwegian government constructs its position towards climate change, “makes generous assumptions about technological success in Carbon Capture and Storage (CCS)”, in the absence of any progress of this technology and in disregard of the lack of international confidence in it.

It seems that Norway will not be prepared for a change in energy sources towards renewable ones. Subsidies for fossil fuels are due to be stopped while the price of exploring the oilfields in the North Sea rises continually. Additionally, the infrastructure to produce and transport cheap electrical energy will not be in place because the Norwegian state actually hinders investment in renewable energies. In the meantime, infrastructure such as oil platforms in the North Sea need to be disposed of, at a significant monetary and environmental cost. In this light, indeed, Lillehammer 1994, with all its shortcomings, might have been the apotheosis of environmental concerns.

**Architecture and Environmental Image-Making**

Røstvik criticises Norwegian architectural firms, Snøhetta, and Dark, for obtaining large commissions by establishing close links with the government’s foreign aid programme. The buildings do not work as described in the environmental plans advertised during the design phases. They end up being expensive consumers of fossil fuels. And ironically or not, the result of coincidence or not, these buildings become icons of architecture, icons and bearers of national pride.

The Oslo Opera House, visited by so many, has become to be recognised as emblematic of the Norwegian capital. Yet what very few know, beyond the glossy images and appreciative words describing its iceberg-like form and spectacular interior views of the lobby, is that it was designed to become a sustainable building. However, these goals have progressively been downplayed. Røstvik’s critique of the building concerns the imbalance between environmental expectations and their materialization. He demonstrates that the amount of solar cells on the façade produce an amount of energy equivalent to the savings generated by the hypothetical reduction of the immense glass façade by ten square meters.
He raises the important question of the role of design in achieving sustainability goals and reducing the carbon footprint of buildings. Examining the small opening left behind by Tafuri at the end of *Architecture and Utopia: Design and Capitalist Development*, where he sets the premises for re-evaluating the roles played by the technician, the organiser of building activity and the planner, one might consider that in terms of achieving sustainable development, the architect needs to become a good technician. It is no longer sufficient to design sensible forms and act at a symbolic level. Nor is it sufficient to become associated with an ideology of sustainable development; as it has repeatedly been shown that such an approach is doomed to be ineffective and easily corruptible by capitalist, accumulative practices. Instead, ideology may be replaced by technical expertise. Unfortunately, this path is also filled with dangers – as in the quest for profit, costs for complying with standards of environmental awareness and sustainable development are too often reduced to the bare minimum.

Could it be argued that the environmental design in Lillehammer was part of a long-lasting tradition of environmental awareness, which endured after the event concluded, defined the architectural credo of the designers and was materialised in their work afterwards? How much have environmental concerns and elements of renewable energy been integrated in the work of those architects who operated at Lillehammer 1994 since then?

The work of the two main Lillehammer designers, ØKAW MNAL and Niels Torp Arkitekter MNAL, does not stand out as drawing on notions of environmentalism and sustainable development. Their approach at Lillehammer of hiding the volume of the large sports programme to conserve the appearance of the line of the ground does not seem to be a representative feature of their work. These two companies failed to refine an architectural position so well stated over two decades ago. The absence of any project following on from the legacy of the 1994 Olympic architecture is saddening; almost a betrayal of those features of Norwegian architecture which, despite not responding to the requirement of environmental awareness, at least laid the basis for a promising inquiry in this sense. The explanation for this discontinuity may well lie in Norway’s main source of income coming from fossil fuel exploitation and trade. To remain part of the competitive market, architects need to follow prevailing trends. Therefore, in the absence of any critical agency, the profession can be used as a marker of the extent of such environmentally destructive practices. Part 3 of the thesis will elaborate on this subject.

If architecture is stripped from ideology, how can one assume it can be of any more use than reflecting the problems, tensions and conflicts inherent in the environmental crisis? How can building finite objects in time and space reflect any relevant critical position expressed by architects or their clients if they become mere repositories of capital? Unfortunately, architecture and its expressions become instruments in drafting an image which ensures the ever-shifting forms in which capital can find expression. Part 3 will examine how an architectural representation rooted in tradition served the purposes of the Norwegian government, the main investor in Lillehammer, remarkably well.

In Tafuri’s words, the systematic criticism of the ideologies accompanying the history of capitalist development is ... but one chapter of such political action. Today, indeed, the principal task of ideological criticism is to do away with impotent and ineffectual myths, which so often serve as illusions that permit the survival of anachronistic “hopes in design”.248
Yet is architecture not the ideal stage on which these ideologies of capitalist development are manifested in full extension? If so, architecture becomes a cultural space entirely corrupted by capitalist ideologies, dispossessed of any critical stance.

**Double Standards: A Discussion**

To what extent did the oil lobby in Norway access and exploit the Olympic audience for further enrichment of the so-called oil network – in so doing, making Olympic athletes, organisers, designers and spectators part of the environmental crime? An attempt to tackle this question may be made by exploring critical functionalist approaches of Olympic Games. They interpret mega-events as processes which have been called into existence by the capitalist system’s requirements, its needs to reproduce itself, and generally by the ‘logic of capital’ and of capital accumulation. Such analyses can either emphasise the economic role of commercialism and profit-seeking in mega-events, or their ideological role in legitimating capitalist consumerism and commercialism, or their ideological role in legitimating the nation-state and inter-state systems used by the capitalist system, or a mixture of these.249

Certainly, Roche does not refer to small commerce of souvenirs and other Olympic memorabilia. He targets the tendency of market-driven interests to penetrate the very matrix of Olympic events. Lillehammer 1994 also represented an opportunity to reduce or even silence criticism of the powerful Statoil, Hydro and other environmentally questionable state-controlled, profit-seeking companies.

Thus the regulatory functions of mega-events projected onto social, cultural and economic flows have two consequences. On the one hand, as Roche argues, they offer stability amid a world of dynamic, ever-shifting values. On the other, they provide an entry point for larger economic interests to penetrate those spheres of society which would otherwise remain inaccessible. The broad audience of the Olympic Games, Summer and Winter editions alike, constitutes an opportunity for capital reaffirmation.

The parallel agenda of such events, which is not visible to the general public and seizes the festive functions associated with these celebratory historical moments, is of great interest here. The intrusions of market driven multi-national institutions reinforce their practices by association with this periodical, agenda-setting global event.250 Putting into words what was never said throughout the Games in Lillehammer, but represented the backbone of its intention, would produce the following message: despite being involved in the oil industry, the Norwegian state can organise such environmentally friendly events. Their exploitation of fossil fuel is not such a bad thing after all!

This study’s criticism of the Olympic Games in general, and its sustainability component in particular, is based on synchronicity. One might expect what are promoted as environmental approaches at these mega-events to be translated into material objects or politics almost instantly. Failure to do so represents one more argument questioning the IOC as an efficient environmental watchdog or ambassador. The slow pace at which social, technological and cultural changes are incorporated through Olympic Games is insufficient when it comes to addressing climate change. Other mass media devices may prove more effective and less costly.

Lillehammer 1994 appears a clear example of how constructing an expensive environmental image delays environmental measures and damages the effectiveness with which issues related to climate change need to be addressed. It is argued here that
precious time is wasted by implementing environmental strategies in mega-events. The cost is high and the result is largely non-existent in the long term.

In any case, the Olympics in Lillehammer were held during the most beneficial period for the fossil fuel industry in Norway. After peak yields in fossil fuel exploitation were reached around 2000, the decline in production was accompanied by a refusal to commit to research into alternative forms of energy. This leads to the unpleasant question of the role of the Games as one more channel through which false environmental rhetoric was designed, to conceal the hidden Norwegian agenda.

As opposed to that, the government repeatedly refused to allow American prospect companies to search for petroleum in the North Sea back in the 1960s and early 1970s. This resistance can be interpreted as an attempt to remain faithful to a tradition of affiliation to Nature by avoiding activities which would lead to the worsening of environmental quality. Norway was known before 1970 – and indeed still is – as a leading nation in the technology of hydroelectric plants. Added positive features of the Norwegian stance are attempts to promote alternative ways of improving energy efficiency and search for renewable energy, such as upgrading existing energy-efficiency standards for buildings, or stimulating enterprises and private citizens to use biomass and wood as sources for power and heat. However, these measures, as Røstvik convincingly argues, are superficial; and if not conducted under close supervision by informed agencies, may result in greater hazard to the environment than the action they substitute.

Norway was and still is heavily reliant on electrical power produced in its own hydroelectric plants. This is not to argue that such plants were deployed without any tension or conflict. On the contrary: for example, serious tensions occurred when the Alta River was dammed in order to produce electrical energy. Environmentalists were dissatisfied. Brundtland, in charge of the Alta River project at that time, later admitted this was an error. Was this an image-conscious statement from the person leading the UN environmental commission, or an honest appreciation of the injustice done to displaced populations?

Setting aside these controversial bursts of environmental enthusiasm, Norway continued its natural resource exploitation practices after Lillehammer. Moreover, the increased economic importance of the Pension Fund speaks to the difficulties in replacing the extraordinary source of wealth obtained through natural resource commerce. Entertaining even the possibility of an end to this dependency seems a large conceptual leap. In addition, since active measures to hinder investment in renewable energies are continually made in Norway, it is hard to believe that anything of the message preached in Lillehammer was or ever will be implemented in the near future. Certainly, no evidence of progress can be detected thus far. Business as usual emits increasingly vast amounts of carbon dioxide into the atmosphere, despite commitments to curb them through, for example, the Kyoto Protocol. Considerable profits are being made as a result.

In sum, the Brundtland Report was not followed by a convincing, sustainable Olympic Games; which in turn, were not followed by a continuation of the ideas formulated by Lillehammer’s presentation to the world. Apparently, the only merit of the event, if any, is that it contributed to the discussion about environmental protection and implicitly, sustainable development. This is certainly not sufficient to label the event as pioneering or informative. On the contrary, the cautious, edited dialogue on notions of environmental protection, and apparent motive of greenwashing, may well mean that the disadvantages
of sustainable development being incorporated into Lillehammer 1994 outweighed the benefits. The misleading set of values associated with sustainable development actually contributed to an increase of fossil fuel consumption – thanks to pampered, complacent, over-optimistic rhetoric on sustainability and the environment.

Lillehammer, which can be clearly seen as a politically motivated Olympic event, did not actively contribute in setting an example of how to manage the environment and make it sustainable, in the sense of ensuring the same living conditions for subsequent generations. Instead, the same quest for profit which began with Los Angeles 1984 was the order of the day. However, in Los Angeles, money was made through marketing; whereas in Lillehammer, if any profits were registered, they were a result of governmental backing. The dissociation between making money and sports, marked so clearly by Avery Brundage, is not only invalidated in the case of the IOC; but the quest for capital accumulation seems to engulf anything in the way, even as tangentially as sustainable development: transforming it into a marketing tool to accommodate the ever-shifting forms of capital dynamics.

Although beyond the scope of this study, a research proposal to inquire into the processes through which sustainable development becomes an image of environmental destruction can be put forward. This statement may well become a working hypothesis in itself, and evolve into a broader investigation beyond Lillehammer, Norway and even the context of the Olympic Games. Such a project can be articulated around Ulrich Beck's reading of wealth distribution, which depends on “the risks and consequences of modernization, which are revealed as irreversible threats to the life of plants, animals and human beings”. Sustainable development merely treats the symptoms of the ever-aggravating condition of progress; but never the causes of the problem.
Celebration or Capitalism?257

Researchers argue that the Olympic Movement became a catwalk for neoliberal capitalism. This trend seems to have resulted from the successive economic struggles of previous Games. Even the larger Summer Games had consistent difficulties in generating profit, leading to heavily indebted host communities. As a result, the IOC opened up the Olympic Movement to intense commercialisation and branding since the Olympic edition in Los Angeles. Boykoff highlights the moment of the shift:

By the time Juan Antonio Samaranch took the IOC helm in 1980, neoliberalism was ascendant and Samaranch was ready to attach the Games to capital’s rising star. Thanks in large part to Samaranch and his successor Jacques Rogge, the modern Olympics cohere with neoliberal capitalism in several ways. The Olympic Games have become much more commercialized, branded, and commoditized as private capital has taken on a more high-profile role – former IOC marketing head Michael Payne once approvingly branded the Games ‘the world’s longest commercial’.258

The total immersion of Olympic Games into “commercial aspects of neoliberalism” occurs by means of sponsorship programmes. In their dealings with the IOC, sponsors have priority in terms of annual renewal if they participate once.

“Pre-Cooked” Olympic Promises

Nevertheless, the use of public-private partnerships (PPPs) to fund the costs of the event is “plagued by conceptual slippage that can lead to misleading predictions and contrary outcomes”.259 PPPs are regarded as mechanisms which favour market creation. However, this takes place by employing “deceptively fuzzy terminology”: as Faranak Miraftab’s argument about the ambiguous, all-encompassing notion of private sector, which can stand for anything from “local small businesses to multinational behemoths”,260 exemplifies. The failure to distinguish between these various dimensions implies the problem of vested interests by large industries affiliated to the private sector.261 Researchers warn that promoters “of PPPs promise small-business success but more often play their corporate trump cards”.262

Boykoff terms this phenomenon celebration capitalism which he sees as a derivative of disaster capitalism that is placed within exceptional conditions263 where democratic mechanisms are suspended. Boykoff argues that “celebration capitalism manipulates state actors as partners”.264 Celebration capitalism may imply more reliance on public-private associations to produce the large capital required to build such imposing infrastructure in a reduced amount of time; but in so doing it severely downplays the costs and inflates the benefits of hosting the Games.

As it happens, during “both the bidding process and while preparing to stage the Games, host cities routinely overstate the economic benefits the Olympics will supposedly stimulate, while downplaying the costs.”265 Among the practices leading to optimistic and misleading appreciations of the benefits and costs of the Olympics, Crompton highlights: inclusion of local residents in the decision-making process, excessive reliance on multipliers, marginalising the costs supported by the local community, downplaying or ignoring opportunity and displacements costs, unrealistic expansion of the scope, over-estimating visitor numbers, as well as considering consumer surplus.266
Multipliers are not the most effective means of building up realistic projections. Expectations of a rise in local employment, for instance, assume that those employed were previously unemployed, which may not be entirely true. Often, though, there is migration of the workforce from one industry to the Games’ organisation. Moreover, in terms of projected numbers of visitors, often, regular clientele of resorts are not willing to visit them during the Olympics, to avoid overcrowded hotels and facilities. They are replaced, not added to. For instance, the number of foreign visitors actually fell at Barcelona 1992. Statements of economic impact also depart from the premise that prior to the event, there is very limited or no economic activity. 267

Moreover, the sudden deployment of the Games generates an imbalance in the region, an argument which favours dispersed Olympic schemes. Usually visited locations where citizens’ spending is focused find themselves lacking these sources of income during the Games, as their clientele migrates to the Olympic settings. This results in imbalance from the “relocation of leisure spending”. Another destabilising element is that money goes out of the community, as most services and objects manufactured for the Olympics are produced elsewhere and supplied to the organising region. These costs are covered by local public funds. 268

In addition, Olympic Games damage local businesses because, as Boykoff argues, first, they are excluded from prime Olympic locations and do not have access to the main market. This is largely due to the “IOC’s fierce brand protection”: the priority given by the IOC to the consumer goods and brands promoted by the companies labelled as Olympic sponsors. 269 Second, local businesses face sudden competition from the increase of firms selling the products and goods usually associated with the Games.

As a response, one can highlight the economic advantages of a decentralised territorial layout over compact versions. In Lillehammer, a compact scheme, with the Olympic Village confined to a reduced area, would have led to the exclusion of local shops and merchants from accessing consumers. The more dispersed scheme included the semi-urban layout of the settlements of Hamar, Gjøvik and Lillehammer in the Olympic Village, blurring the boundaries between the event and pre-existing economic exchange structures.

Boykoff’s conclusion expresses the disjunction between that which is advertised and produced as a result of Olympic Games. More often than not, expectations are deceived and large debts are left behind by the ephemeral spectacle, often in the form of mega-structures and unusable infrastructure.

As with the political spectacle, there is a sizeable gap between pre-cooked gesture and hard-baked reality. Spectacles are not necessarily a means to achieving an end but gestures to carry meaning and significance through their connection to symbols, hopes and fears. 270

Myths of Environmental and Social Sustainability

Among the six important aspects of celebration capitalism, Boykoff pinpoints that the processes associated with this form of capital accumulation are “stoked by the feel-good claims of environmental and social sustainability”. He explains that sustainability “may swerve us toward intergenerational equity, but it can also serve as a costume for capitalist chicanery”. 271
Against the argument of social sustainability within Olympic Games, Boykoff, like other researchers, notes that the

process of celebration capitalism includes the displacement of those who might like to put a damper to the party, whether through repression, forced removal, gentrification, or temporary bans.²⁷²

This gives way to extreme situations of tension between whistle-blowers, who warn of disruptive processes ahead of such events, and local authorities. It is not so much assumed as required that once the decision to host the Games is made, the entire country’s population has to get behind them and support their organisation. A scenario in which such complex, intense organisational processes can take place simultaneously with taking into account and mediating dissent is difficult to imagine. However, the decision is often made, as in the case of Lillehammer, on incomplete information and partial representation of a simulated variety of benefits, with the disadvantages greatly downplayed.

Olympic Games appear, at first glance, to defend the interests of weak sections of the population by employing “loose” terminology. However, they end up backing up the often opposing interests of the largest Olympic partners. The outcome of this double game results in the dispossession of the more fragile and disadvantaged, who embrace the Games as a present, but end up offering unlimited access to local resources.²⁷³,²⁷⁴

Whereas when it comes to environmental sustainability, the promises made, as Part 1 showed, are not followed through. This thesis argued that even in Lillehammer, the aspirations towards environmental sustainability appear as political calculations orchestrated by a state that can be considered a relevant actor of environmental destruction (previous section).

Following the surprise award of the Games to Lillehammer in 1994, environmentalists, who gathered themselves under the name Environment-Friendly Olympics Project (EFOP), attempted to guide the project in a way which avoided the mistakes made in Albertville. The repositioning of the Hamar arena to conserve a bird sanctuary, however, proved to be an isolated and limited attempt to minimize environmental damage as will be shown in Part 3. Moreover, in respect of the Lillehammer case, one might ask why it was necessary for the IOC to align itself with external critics if the 1994 Olympics were to be the first environmentally-friendly Games. Not long later, the EFOP was included in the LOOC, an opportune political decision which treated the merit of ecologists as equivalent to that of the IOC and the LOOC.

**Risk Games**

The Norwegian government stepped into the organisational process in Lillehammer after it became clear that the local administration opposed financing the Games. This has been customary for Olympic Games since their inception. As argued by Boykoff,

hosting the Olympics on the world stage provides host governments with the incentive to bail out fiscal mishaps so as to avoid embarrassment under the global media spotlights. Knowing this, allows private firms to relinquish responsibility when the going gets rough. And when things go wrong, the state – or, rather the taxpaying public – is usually left with the bill. Thus, with many PPPs, in a bait and switch brimming with bonhomie, the public takes the risks and the private entities scoop up the rewards that may accrue.²⁷⁵
In exchange for financing large investment in the venues and adjacent Olympic settings, the Norwegian government requested diversification of the risk. Hence, the compact scheme which won the bid in 1987 was threatened. At this point, the first Director resigned and the new protector of the Olympic Games appointed a new one. What was advertised as a local, small footprint suddenly required large infrastructure to move visitors along a 120 kilometres extension of the Olympic area at Lake Mjøsa.

The advantages and disadvantages of compact bids versus decentralised ones were discussed in Part 1. It is added here that the shift to a decentralised setting in Lillehammer improved the usability of the venues and its legacy. Existing infrastructure was employed and existing public transport providers united their forces to cover the requirements of the two-week event. Contrary to initial aspirations of the compact scheme, the decentralised one became a powerful argument towards a reduced environmental impact. Locations for concealing the venues inside the landscape were more easily found, while the number of potential settings increased.

Conversely, the initial compact scheme would have generated a collection of venues which would have been difficult to use by a limited local or adjacent population following the Olympics. From this perspective, one can easily be deceived into believing that Lillehammer was indeed a success in terms of environmental awareness and economic viability. Tor Selstad, for instance, argues that for the town of Lillehammer, the Olympics were a beneficial experience, resulting in its population increasing by 14% (from 22,000 inhabitants to 25,000).

He concludes that “even if we can only claim that half of this can be attributed to the sports extravaganza, the local organizers have achieved everything they set out to do – and more”. According to him, unlike national trends of falling employment, the event brought 2,500 jobs in and around Lillehammer, especially in hotels and restaurants, sports and entertainment, culture, media, libraries and interest organisations. Public services appear to have benefited most. Gjøvik and Hamar benefited rather less, with a stagnant or only very modest increase in employment.

Nevertheless, the context of the Norwegian Games must be shaped by the understanding that the Olympic bonanza came to curb economic downfall. Despite the fact that, in the 1970s, Norway developed a form of counter-urbanisation which led to an increase in the prosperity of large and small towns (Lillehammer was among the towns that benefited most from this trend), the early 1980s were marked by industrial decline in Norway. Only in the second half of the decade did economic growth resume, but only large urban centres and peripheral areas benefited from this.

As Selstad notes, the “counter-urbanization of the 1970s had been transformed into a strong urbanization trend”. He further argues that Lillehammer was affected by these changes: presumably because of its closeness to the capital. Lillehammer “had developed into a relatively significant industrial district, and the effects were dramatic when the town’s largest industrial concern, Mesna Karton, was forced to close its doors”. Hamar and Gjovik were also affected, and experienced a sharp decline in employment rates.

The abundance generated by a dynamic petroleum industry only reached regions bordering the North Sea. Lillehammer, Gjøvik, Hamar and most of the Norwegian inland “was stuck in the shadow of the oil world”. Compensation for less developed regions was awarded; but this was limited, leaving it to the local communities to take things into their own hands. The solution for Lillehammer was to bid for the Winter Olympic Games.
Environmental Planning in Lillehammer

The idea of Lillehammer hosting the Games was proposed by the business sector. No environmental claims seem to have been made in that proposal. Selstad comments that "it was maintained from the very outset that the primary objective of hosting the Winter Games was not to organize a sports extravaganza, but to promote regional development." In this phase of the process, it seems that the main driver of the project was financial calculation; an effort to compensate for the downfall of the regional economy. However, one might ask whether stable jobs, such as those associated with industrial development and production, can be replaced by seasonal ones in the hotel and restaurant industry.

Similar questions were asked in Lillehammer in the period preceding the IOC's decision regarding the 1992 Games, ultimately won by Albertville. Apart from fears of financial collapse and ruin of the local administration and population, sceptics posed numerous questions regarding the degree of extensive degradation of the environment should the Games be hosted by such an unprecedentedly small community. Critics also highlighted that gains in employment would be marginal and unimportant. Defenders of the 1992 Lillehammer bid argued in response that the benefits following afterwards would be large, and that these would outweigh the environmental risks, which could be dealt with in any case.

In Lillehammer, criticism of Olympic interventions in the landscape were made on three grounds. First, certain projects, such as ice rinks, were considered too bulky, and extreme solutions sought to minimize their visual impact on the landscape. Second, the open venue of the freestyle facility contrasted too much with the surrounding landscape, because of the dimensional requirements associated with the organisation of such winter events. Third, the roads connecting the various Olympic locations were considered too wide and over-dimensioned compared to the small size of the semi-urban settlements hosting the venues. However, on the upside, urban centres were improved in the locations chosen to host the venues, such as Lillehammer, Hamar and Gjøvik. Moreover, the road network connecting Lillehammer to Oslo was upgraded and a new drainage purification facility was built.

Further research in this direction might prove of significant importance. However, for the purposes of this thesis, it is enough to acknowledge that Norwegian researchers recognize the importance of planning when mitigating often antagonistic views of informed analysis, public debate and political decisions. This reveals that under detailed scrutiny, urban planning produced at the level of municipal commissions becomes the most efficient tool to counteract aggressive capitalist practices. Architecture, on the other hand, becomes the tool of the latter to disguise its rapacity. Lillehammer, seen this way, may be interpreted as an interesting disjunctive case between architecture and planning.

Hence, one can refine Nystad's conviction that the key to Lillehammer's success was the "triumph [of] the Norwegian planning system": which proved hermetically closed to the external interests so often associated with mega-events. What secured an apparent success was a particular settlement morphology and distribution, coupled with conservation of traditional architectural and semi-urban values.

Researchers further argue that the incorporation of environmental considerations was a priority in setting the physical surroundings of the event. This, in their view, demonstrates that "full environmental impact assessments are not absolutely necessary provided that these elements are sufficiently included in the ordinary planning activity."
This observation may jeopardise the relationship, however torn it may be, between environmental protection and the IOC. Full environmental assessment may prove obsolete in locations such as Lillehammer, where anti-urban culture is prominent and the size of the host region is small and remote, protected as such from financial interests. However, if the Games are hosted by larger settlements, where interests lobbying for financial gain are more intense, planning is a poor tool with which to protect the environment.

Rejecting Capitalism’s Festive Extension

Boykoff notes that celebration capitalism emerges as something which relieves “ecological and financial fears”. Seen from this angle, Olympic Games, prominent representatives of celebration capitalism, emerge as a necessary component in the making of capitalism. Entertainment through suspension of fear and its replacement by an expression of the best characteristics of humanity is the recipe of a successful Games. It is argued in this thesis that the unspoken message of the Lillehammer Games – the apparent compatibility of extreme natural resource exploitation with a clean local environment – was such an instance of suspension of ecological fears characteristic of Olympic mega-events.

While “disaster capitalism exploits social trauma to eviscerate the state and force-march us toward free-market fundamentalism,” and is instated under the urgency of promised salvation, celebration capitalism is optional, always accompanied by the alternative of not having to deploy such large investment. Olympic events, maybe the clearest example of celebration capitalism, are often preceded by a democratic decision process, which often results in rejection of the bid by the local population. Deciding in favour of a particular bid appears to depend on the capacity of politics to capture citizens’ imagination and enact "quick and magical", yet illusory cures to long-lasting social problems.

If one Olympic host city is chosen, it is often because another one has rejected the project. The way in which the choice of Olympic hosts is advertised within the Olympic Movement as an honour or a privilege does not reflect the tensions of the bidding process and the internal national or regional struggle which proponents face. Moreover, if an edition of the Olympic Games is held, it is because of very precise economic objectives clearly outlined within elite spheres and, very often, premeditated. The rest is marketing and campaigning to convince the population to back the project.

Behind its festive aura, capitalism operates by dispossessing the public who very often rejects the Olympic project. Part 1 highlighted that many times when the question of whether to host the Olympics was posed to the population of a potential bidder, the result was negative. In 1974, Denver provided a clear example of an informed population refusing to host the Games. Interestingly, this has often occurred in locations which once hosted the Games. This speaks of the disenchantment with the process.

Similarly, there were several investigations into the Norwegian populace’s views regarding the 1994 Games, although an official referendum was never organised. These studies were conducted after the success of Lillehammer's bid, and revealed that acceptance increased as their organisation advanced: ranging from a less favourable reception before the Games to a staggering 80% of Norwegians and 88% Lillehammer residents showing enthusiasm towards them by the post-event phase.

In the eve of Lillehammer 1994, the event had been opposed by one third of the Norwegian population. It is argued here that the efficacy of the image of environmental
awareness and transmission of cultural and traditional values through the event contributed to a drastic change in its reception. An overwhelming majority of Norwegians ended up supporting the Games and validating the declared motivations of the organising committee. However, over two decades later, the proposal to even submit a bid for the 2022 Games was ultimately rejected in Norway.

A referendum, this time held long before any bid was put together, had very interesting results. The authorities of the city of Tromsø failed on various occasions between 2004 and 2008 to galvanise national interest into hosting the Games. From the outset, Oslo’s 2022 bid met with the opposition of authorities in northern Norway. In 2012, the decision was taken to submit the issue to a referendum. The themes discussed in the press included sporting facilities, economic questions, urban development, and sporting goods.

The decision on whether to host the Games in Oslo was unusual in that it escaped regional debate and entered, uncharacteristically for sport in Norway, the public political agenda. Political interests forced the Christian Party, in need for an alliance with the Progress Party, to accept the latter’s request to hold a referendum on the bid together with the Parliamentary election. The result supported hosting the Games.

However, the referendum had only limited relevance for the build-up of Norwegian national identity around the Oslo bid. First, the question was asked in a municipal election, marginalising the views of the rest of the nation. Second, it had no legally binding character. Third, there is limited evidence of organised opposition to the bid, partly because the debate did not extend to the whole of Norway; partly because the case for the bid was stronger on the part of the IOC than the local authorities. It appears that tensions between the IOC and Oslo’s authorities, based on excessive demands for comfort and special treatment for IOC members, led to the disenchantment of the Oslo authorities with the bidding process. Moreover, parties in Norway regarded the large cost of the event as excessive. Therefore, one year after the referendum, Parliament put an end to the bid by deciding not to provide the required financial support.
Conclusions Part 2

The intervention of the state in the Lillehammer Games coincided to a certain extent with the introduction of the green goals which made Lillehammer a reference point for environmental sustainability and the first environmental icon for the IOC. The same state which controlled the fossil fuel trade thus acquired access to the media market of the IOC at reasonable cost. The shift of the financial burden of the Games from the local administration to the government appears to have been motivated by a lack of funds available to the former.301

Lillehammer’s questionable success owed to a fortunate combination of factors. First, the reduced size of the event made it possible to propose something unprecedented with great – if only at a level of communication – potential for environmental awareness. Second, the opportune intervention of a rich state took control from a struggling local economy. However, the successful organisation process came with a high price tag: the projection of a politically determined agenda.

It was shown in this part that the intention of hosting the Games is rooted not in the altruistic dedication of politicians to celebrating the noble values associated with the first Olympic events. On the contrary, it is a result of political calculation and quest for profit. Moreover, more often than not, Olympic events channel the enthusiasm and idealism in order to dispossess large sections of the hosting population. Finally, organising interest groups seek international acceptance of routine practices of accumulation which often project themselves violently over the territory concerned.

In this sense, Olympic Games can also be classified via the criteria of financial opportunity, ordered on a scale reflecting their attempts to enforce and justify politics of inequality by gathering tacit international approval, or access large audiences to propose a culture of acceptance of certain practices which benefit capital accumulation. This all takes place against a background of increased social euphoria.302 One could add that social euphoria can be more specifically labelled as national euphoria, capitalising on fictitious, individualising national values, often marketed as superior to those of other nations or regions.

However, the failed and subsequent successful Lillehammer bids reveal that design comes in last and has little to do with the decision-making process. Much more important are pragmatic concerns associated with creation of surplus value. In this equation, architecture is the practice which creates the setting for spectacle, blurring ethical values and channelling, often in a manipulative way, whatever the message of the day may be.

The social and environmental questions in Lillehammer in 1994 were asked outside the space of architecture. Architects simply adapted the scheme from compact to nucleate by reshuffling the venues and enabling its functioning. That the same group of architects proposed two very different proposals is the clearest evidence dismantling any defence of architectural agency in the major infrastructural and territorial decisions of the Lillehammer Games. This observation limits the architecture of the event to the role of environmental barometer, revealing the symptoms of anti-environmental practices.

Moreover, this part established that the association between Norwegian identity and sustainable development is problematic for the following reasons: first, in spite of Norway being considered the locus par excellence of care for the environment and
cultivation of practices of ecological awareness, per capita, it is the largest oil and arms exporter in the world; second, the Lillehammer Olympics were largely limited to the local context and covered only a marginal array of problems, which the notion of sustainable development should engage with; and third, the promotion of sustainable development within the context of an Olympic event was contradictory in itself, as such events are unsustainable, economically driven, enhance competition and lack accountability of their impact on the environment.

However, despite its contradictory environmental stance, the Olympic Games of Lillehammer left behind the most intensively utilised Winter Olympic legacy. Following the events in 1994, the Norwegian town joined forces with the cities of Oslo and Hamar to host competitions such as the Men’s Ice Hockey Championship in 1999. Moreover, indoor cross-country races, cycling and equestrian competitions, and indoor soccer championships were organised in the Olympic arena at Hamar. In 2016, Lillehammer also hosted the Youth Olympic Games, with very few modifications to the facilities used in 1994. The success of the venues since the Games largely appear the result of their distribution within the territory. This, as was shown in Part 1, constitutes a distinctive trait of the Lillehammer Games – unlike previous Olympic events, following which venues were either abandoned or very poorly managed and used.

It could be concluded that the work of historians in relation to Lillehammer, analysed in Part 1, was limited to an economic and social reading of the historical evidence. In this thesis, a further level of criticism is revealed, provided by analysing the material legacy of the event. The opportunity to trace the evolution of the architectural designs in formational terms reveals the following question: was the objective of the designers of the venues in Lillehammer aligned, or opposed to the political agenda projected onto the event by transnational interests?

Sections 6 and 7 canvassed the absent fragment of contemporary Norwegian features of capitalisation on natural resources. A critique of the notion of sustainable development remained, however, still pending. Section 5 attempted to fill in this conceptual gap, while Section 4 revealed the omnipresent national component of such mega-events. It was then argued that the traits highlighted as Norwegian national identity were carefully selected and encapsulated an idealised, false image of contemporary Norwegian values which eluded problematic geopolitical, social and political conditions. In what follows, some architectural objects produced for the Olympic Games from 1994 will be analysed, revealing how an image of environmental awareness was conveyed through architectural representation to justify practices of natural resource exploitation instead of those traditional environmental values comprised within the notion of self-sufficiency.
Notes

2 Ibid., 52
3 Ibid.
4 It is interesting to note that the set of constraints are not known under the name guide, but handbook: an allusion to the close relationship of Norwegians with the object of their work, the material. The guide is seen as something to be handled, almost something to be carried around as if it was a lighter or box of matches.
5 This was possible through the involvement of a highly specialized group of professionals, mostly related to the practice of graphic design and architecture in the organisation and design process of the event.
7 In this respect, Roche makes an important point: “Although [Olympic Games] were usually largely dominated by the nationalism of the host country they also provided apparently “international” stages and arenas for the display of current versions of ideals of international world order, that is of national identities and differences in a transient context of relatively peaceful coexistence and of common absorption in the ideals of the progress of “Western civilization”, and in the practices of touristic consumerism”. Roche, M. (2000) Mega-Events and Modernity: Olympics and Expos in the Growth of Global Culture, London: Routledge, 198.
9 See Part 1.
12 Interview on 17 June 2015 at the office in Frederik Stangs Gate in Oslo, with Tom Wike from ØKAW
14 Ibid.
15 Ibid.
17 Ibid., 9-10
19 Evidence shall be extracted from visual analysis of the schemes proposed for the territorial planning and architectural setting of the Games, alongside elements of oral history, photographs, video material and architectural drawings, models and sketches produced before, during and after the event.
21 Ibid.
23 The word honesty has been adapted from the extract which refers to the adjective genuine. Design Group ’94 (1991) Design Handbook, LOOC, Section C.
24 “Wood and stone are the natural building materials that predominate in Norwegian architecture. From time immemorial these materials have been used in a functional manner to provide shelter from wind and weather. . . . Accordingly, distinctive features and national characteristics together constitute one of the main themes for design and architecture, which will be: simple, practical, sound, vigorous, functional, genuine, bold, aesthetic”. Design Group ’94 (1991) Design Handbook, LOOC, Section C.
25 “Equality is a fundamental percept of both legislation and social institutions: people and the quality of life of each individual occupy a central place in Norwegian society. It is desired to convey this to the rest of the world, and affinity between people is thus another of the main themes for
design, which will emphasise: the individual as norm, quality of life, friendship, equality, care and consideration, solidarity”. Design Group ’94 (1991) Design Handbook, LOOC, Section C.


27 Ibid.

28 Ibid.

29 Norwegians “respect the changing seasons, natural forces and the ecological vulnerability of nature in an industrialised world. The Norwegian people’s closeness to nature is a quality that will be expressed in design and architecture through: environmental awareness and sensible ecological management (non-polluting production, non-polluting utilisation, recycling, non-polluting refuse disposal), outdoor life (feeling of freedom, rucksacks and packed lunches, adventure, lure of the unknown, beauty, unspoiled natural environment), contrasts (light and darkness, heat and cold, night and day, winter, spring, summer, autumn, closed and open, foreground and background), manifestations of nature (wood, rock, show and ice, crystals, northern lights, soil and plants)”. Design Group ’94 (1991) Design Handbook, LOOC, Section C.


31 Ibid., Section D, 1

32 The influence of the Design Handbook beyond the limits of sport is linked to the revival of national identity, as stated in the document: “The Winter Olympics in Lillehammer should reflect Norway’s traditions as a prime winter sports nation and be rooted in Norwegian culture and Norway’s national character, in order that they may mirror Norway’s approach to people and society in a context that encompasses more than just sport”. Design Group ’94 (1991) Design Handbook, LOOC, Section 3.


34 “The sports pictograms have been inspired by rock carvings that are thousands of years old. The oldest known portrayal of a skier is a Norwegian rock carving on Rødøy island, Alstahaug, in the county of Nordland; it is estimated to be four thousand years old”. Design Group ’94 (1991) Design Handbook, LOOC, Section E, 1.

35 In 1991, Petter T. Moshus was tasked with putting together a team of designers to come up with a proposal for the Design Handbook of the Games.

36 Reference to the film, The Inconvenient Truth.

37 “Scales of Belonging: Notes on Sustainability and Geographical Citizenship”, presented during the European Symposium on research in Architecture and Urban Planning in October 2016


44 Ibid.

45 It is not clear who the author of the mascots is. In the Design Handbook, the LOOC assumes authorship. However, Andrew Jennings assigns it to the son of an IOC member.

46 From the perspective of national projection of the Games, competition can be detected between the traditionally emblematic role of the mascot in conveying national narratives, and Moshus’ more successful signage logo concept. The latter is more relevant, so the analysis has been pursued in this direction.

47 An additional example of historical ambiguity appears in the signage of the event. The pictogram meant to represent cultural events spreading over a two-year period during and after competition was the mythical figure of goddess Máhttaráhkku. She is linked to the mythology of the Sami people according to the explanations provided by the Design Handbook. Inspired by an illustration by Nils-Aslak Valhkeapää, the pictogram stands for origin of life, fertility and
creativity. “She is Mother Earth, the Source from which all life springs. She is the goddess of fertility and artistic creativity”. Design Group ‘94 (1991) Design Handbook, LOOC, Section I, page 2.

48 Returning to Nietzsche: “How could history serve life better than by anchoring the less gifted races and peoples to the homes and customs of their ancestors, and keeping them from ranging far afield in search of better, to find only struggle and competition?” In other words, history becomes a self-referential feature of community, which comprises geographical affiliation. Trans-regional migratory practices only harm historical belonging to a community by effacing its individualising traits. Nietzsche continues: “The influence that ties men down to the same companions and circumstances, to the daily round of toil, to their bare mountainside, seems to be selfish and unreasonable; but it is a healthy unreason and of profit to the community, as everyone knows who has clearly realized the terrible consequences of mere desire for migration and adventure – perhaps in whole peoples – or who watches the destiny of a nation that has lost confidence in its earlier days and is given up to a restless cosmpolitanism and an unceasing desire for novelty”. Nietzsche, F. (1949) The Use and Abuse of History. Macmillan Publishing Company: New York, 19.


53 The Design Programme is the tool by which a unified visual profile can be achieved. The Programme contains basic elements which, applied in different ways, contribute to this profile. Rules for their use are contained in a Design Handbook. The premises in relation to the event’s surroundings and architecture are included in the Design Programme. It is important to note that the Design Handbook is distinct from the Design Programme. They are two different publications. Design Group ‘94 (1991) Design Handbook, LOOC, pt.3.


55 Ibid.

56 Moreover, the increased decentralisation of Olympic settings during the second half of the twentieth century can be also interpreted as a response to the decentralisation of capitalist centres of power and their distribution within larger territories. The venues of the Lillehammer Games were spread out over 120 kilometers, along the natural landmark represented by the Mjøsa Lake. Thus, territorial homogeneity was ensured and the IWC acquired access to otherwise remote communities. Hence, the system of signs became a tool for control of the territory.


58 Ibid., pt.2

59 “The Design Handbook is an authoritative document. It is to be used by designers, advertising agencies, artists, craftsmen, architects and others whose task it is to design Games-related activities and products...”. Design Group ’94 (1991) Design Handbook, LOOC, Section 3.


61 Ibid., Section 3

62 Ibid.

63 Ibid., Section C, 1

64 Ibid.

65 Ibid.


The case of Berlin in 1936 is maybe the most clear. They became a platform exhibiting the discriminatory regime of Hitler’s Germany. The racial supremacy promoted by the Third Reich’s political aspirations was not only allowed to become part of the event, but enforced by the members of the Olympic Committee (Gold, JR., Gold, MM. 2007. Olympic Cities: City agendas, planning, and the World’s Games 1896-2012. City: Routledge, 3). The Games were awarded to Germany in 1931, when the Nazis were not yet in power. They were inherited with scepticism by Hitler because of its dangerous international implications, as well as the overwhelming financial burden for an economy still recovering from the war reparations. However, the offer to host the Games was soon embraced with enthusiasm by the National Socialist elites (Ward, S.V. 2007 Promoting the Olympic City in Gold, JR., and Gold, MM. (eds) Olympic Cities: City Agendas, Planning and the World’s Games, London: Routledge, 123). They recognised a tool to project the image of German origins to the world (Gold, JR., Gold, MM. (2007) Athens to Athens: The Summer Olympics, 1896-2004, in Gold, JR., and Gold, MM. (eds.) Olympic Cities: City Agendas, Planning and the World’s Games, London: Routledge, 30). Another example of the affirmation of national identity through the Olympic Games is provided by the 1992 Summer edition hosted by Barcelona. Barcelona ’92 was conceived as a “vehicle of Catalan national identity and national pride”. Maurice Roche argues that overwhelming political influence assigned the Games to Barcelona; and suggests that the Catalan President of the IOC at that time, Juan Antonio Samaranch, played a key role. The claims for a separate Catalan National state are made constantly, the latest attempt being an unsuccessful attempt at administrative separation from Spain in 2016. The 1992 Olympics edition were also employed as a vehicle to promote the differences between Catalan and Spanish identity.

Rich countries such as Norway generally can afford the great economic cost of efficiently constructing images of national identity through expensive displays of sports events.

Thesis submitted by the author in 2015 in partial fulfilment of the requirements for the degree of Master of Arts at the Architectural Association School of Architecture in London.


Harald N. Røstvik and Herman Scheer ensured that renewable energies were on the agenda of this important international conference.


In Roche’s view, four arguments make the study of Expos and Olympic Games relevant. The “personal” argument relates to periodisation of subjective time, providing citizens with “temporal and cultural markers”; the “national historical” aspect nurtures the rise of nation state consciousness; the “cultural historical” argument, which inserts Olympic Games within the wider project of modernity; and the “general sociological” argument, placing such mass events as yet another case study of cultural globalisation through media. (Roche, M. 2000 Mega-Events and Modernity: Olympics and Expos in the Growth of Global Culture, London: Routledge, 5). From this
exhaustive repertoire, the national historical argument and that related to general sociological awareness emerge as the most relevant.

However, the question of national revival and projection has to be cautiously addressed. As Roche notes, "Olympic Games events have always been capable of being used by national political elites to promote their own power and ideologies". (Roche, M. 2000. *Mega-Events and Modernity: Olympics and Expos in the Growth of Global Culture*, London: Routledge, 185). The cases of Berlin 1936, Mexico City 1968, and Moscow 1980 illustrate the argument here. In fact, in the inter-war period, mega-events, including Olympic Games, interfered with questions of "nationalism, civil society and empire-building . . . the development of authoritarian political cultures" (Roche, M. 2000. *Mega-Events and Modernity: Olympics and Expos in the Growth of Global Culture*, London: Routledge, 1). This trend has continued throughout the twentieth century, when mega-events became catwalks for ideals such as liberalism, multi- and sub-culturalism, environmentalism and feminism. "Mega-events were capable of transiently taking on the substantial ceremonial and ritual appearance of nationalist, imperialist, socialist and fascist movements in the early nineteenth-twentieth century periods. In a comparable fashion, in the late twentieth century, mega-event organizers have attempted to connect them with liberal versions of multi-culturalist, environmentalist and, to a limited extent, feminist ideals and movements, projecting them in part as periodic mass festive ceremonies connected with these movements in contemporary consciousness". Roche, M. (2000) *Mega-Events and Modernity: Olympics and Expos in the Growth of Global Culture*, London: Routledge, 234.


Ibid., 41


"Olympic environmental principles often lead to the public – rather than the polluter – funding remediation. This undermines the principle of “polluter pays” while surreptitiously shifting the burden of economic externalities onto the shoulders of the taxpaying public. In other words, IOC sustainability measures tend to intensify the dynamic at the heart of celebration capitalism: the public pays and the private profits". Boykoff, J. (2014) *Celebration Capitalism and the Olympic Games*. London: Routledge, 42.


Ibid., 28


Only one year after Roegen’s publication of *The Entropy Law and the Economic Process* in 1971, The Club of Rome, with which Georgescu-Roegen had a bivalent relationship, published what became the most well-known approach and interpretation of the ecological quandary. Donella H. Meadows, Dennis L. Meadows, Jørgen Randers, and William W. Behrens III, alongside their colleagues, argued that maintaining current trends in population growth would lead to ecosystem collapse, famine and war.

This working method seems to have been disclosed to Georgescu-Roegen in his time at the University of Bucharest where he became acquainted with mathematician Traian Lalescu, who was interested in applying mathematical working methods to statistical evidence extracted from on-site evaluation.
How can it be determined if a system is closed? Georgescu-Roegen assumes that planet Earth is a closed system, but also argues that energy is constantly brought in from space in the form of solar radiation. Does this mean this is a closed system? The reciprocal relationship is also valid, as it could be argued that explorations of space consume energy from Earth.

The only organism which evades this are plants, which "store part of the solar radiation which in their absence would immediately go into dissipated heat, into high entropy." Georgescu-Roegen, N. (1976) Energy and Economic Myths. New York: Pergamon Press Inc., 6.

As a marginal note to this study, however, while Georgescu-Roegen accepts that even harvesting solar radiation will still require materials, he does not explicitly mention the harm caused to the environment in the absence of safe methods of managing the waste produced as a result of employing solar radiation as a source of clean energy.

Initially, it appears that Georgescu-Roegen was affiliated with the ambitions and objectives of this critique; he was briefly a member of the Club.

within a finite environment? An appreciation of the notions of finitude, resource management and a thermodynamic understanding of the economic process are crucial to the formulation of an answer to this question.

142 Ibid.
143 Ibid., 31
144 Ibid.
145 Ibid.
146 Ibid., 33-4
147 Ibid., 33
148 In his view, with “the exosomatic evolution, the human species became addicted to the comfort provided by detachable limbs, which, in turn, compelled man to become a geological agent who continuously speeds up the entropic degradation of the finite stock of mineral resources”. Georgescu-Roegen, N. (1976) *Energy and Economic Myths*. New York: Pergamon Press Inc., XIV.
150 Ibid., 19
151 Bruntland’s success must, in any case, be contextualized. It was published at a time of great environmental unrest and two major environmental crises. First, the nuclear accident at Chernobyl; second, the increasing hole in the ozone layer above the Arctic.
152 Trygve Magnus Haavelmo, born in Skedsmo, Norway, was an influential economist, whose main research interest centred on the field of econometrics. He received the Nobel Memorial Prize in Economic Sciences in 1989.
154 Ibid.
157 Ibid.
158 Ibid., 22
159 Ibid., 22-4
160 Ibid., 20
165 Ibid., 27
166 Ibid.
167 Ibid.
168 Ibid.
172 Ibid., 21
173 Ibid., 22
174 Ibid.
175 Ibid.
176 Ibid.
177 Ibid.
178 Ibid., 23


188 Ibid., 19


192 This section has drawn abundantly on Harald N. Rostvik’s work for the simple reason that he is an architect discussing the environmental contradictions visible in his home country, Norway. However, one must apply a certain amount of caution here. First, he works through comparison with other countries and often draws on statistics. Despite the importance of these documents and their apparent accuracy, the arguments he makes are subjective and often partial: featuring more of an aura of intuition than fact. This, though, does not diminish their critical position. Second, the conclusion of his book is over-optimistic. The belief that architecture can change the face of environmentalism and architects can become ambassadors of sustainable development is far-fetched. However, his extreme position is necessary in a panorama where, as he mentions himself, critical activism is missing.


195 Ibid., 78

196 Ibid., 81


198 In brief, “Norway was no superpower, had very small foreign influence and was seen as neutral and inward looking”. Røstvik, HN. (2015) *Corruption the Nobel Way: Dirty Fuels and the Sunshine Revolution*, Oslo: Kolofon, 55.

199 Ibid., 19

200 Ibid., 100
Most of the sources consulted for this thesis on the topic of the Norwegian double standard include this affirmation.

201 Most of the sources consulted for this thesis on the topic of the Norwegian double standard include this affirmation.


203 Ibid., 120


206 Ibid., 25

207 Ibid.

208 Ibid.

209 Ibid.

210 Ibid., 43

211 Ibid., 45

212 His project for an electric car was never financed; and his winning scheme for a low-energy development was not recognized and never built.


214 Røstvik puts together a moral kit composed of a set of questions, building up to a guide for journalists tempted to play a double role. He argues that “from the journalists’ point of view, the question asked should perhaps be: Do I feel uncomfortable? Am I in an awkward position? Is this a double role? Is it corruption? Am I being paid for to soften my attitude towards what I see?” It could be argued that the same questions should be asked by architects when accepting commissions.


218 See Section 4.


220 See Part 1.


226 Ibid., 86


228 Ibid.


Ibid.

Ibid.


Roche observes that the periodicity of mega events offer structure to the increasingly unstructured space and time of modernity. “Their calendar and cycles . . . offer modernity a vision of predictability and control over time, over the pace and direction of change, in a world where social, technological, ecological and other changes can often appear ‘out of control’ – unpredictable, too fast to adapt to, purposeless and generally anomie”. Roche, M. (2000) Mega-Events and Modernity: Olympics and Expos in the Growth of Global Culture, London: Routledge.


As argued by the researchers and authors cited in this section.


Røstvik believes that Norway is a “moneymaking state: Today, the annual Norwegian state budget is approximately 125 billion Euros. Income from fossil fuels, arms, fish and other industries that has not been spent ends up in the world’s largest sovereign fund; the Oil Fund. It has now been renamed the pension Fund, contains 725 billion Euros by 20 November 2014 and keeps growing. If we add the value of all the state’s direct ownerships in Norwegian companies, we could add at least another 125 to 250 billion Euros to the fund, depending on their varying share value”. Røstvik, HN. (2015) Corruption the Nobel Way: Dirty Fuels and the Sunshine Revolution, Oslo: Kolofon, 20.

In Architecture and Utopia, Manfredo Tafuri questions the failures of modern architectural design and urbanism in embodying “advanced and formally elevated hypothesis of bourgeois culture”. Drawing on Le Corbusier’s projects for cities in Europe and Africa, he asks why his work had remained without a material echo. Tafuri attempts to answer this by describing how Le Corbusier studied and designed in an intellectual manner, rather than in close collaboration with administrative apparatuses stemming from public administration. As a result, Le Corbusier often found himself working for years on projects for which he was neither recompensed nor encouraged in any way by the eternal prospective client. Tafuri argues that Le Corbusier “invented his commission, made it generally applicable and was disposed to personally pay for his own active and creative role”. Tafuri concludes that this approach to an architectural project is similar to an experiment confined to the ideal conditions of the laboratory, and therefore not at all ready for the hard-baked reality of the environment, especially those of political and economic nature.
Moreover, the “general applicability of his hypothesis clashed with the backward structures it was intended to stimulate”. However, since “the aim was that of a revolutionizing of architecture in accord with the most advanced tasks of an economic and technological reality still incapable of assuming coherent and organic form, it is hardly surprising that the realism of Le Corbusier’s hypotheses was regarded as utopian”. In other words, the urban projects of Le Corbusier’s late career were ahead of their time and anachronistic to political, economic and technological development.

“The crisis of modern architecture begins in the very moment in which its natural consignee – large industrial capital – goes beyond the fundamental ideology, putting aside the superstructures. From that moment on architectural ideology no longer has any purpose. The obstinate insistence on seeing its own hypothesis realized becomes either a surpassing of outdated realities or an importunate disturbance”. Hence, architecture is, in Tafuri’s view, condemned to eternally searching for formal expression under overwhelming forces of ever shifting capital. The eternal project of capitalism is doomed to be seen as a process; a finite object, the features of which are fixed in time and space. This is the second reason why Le Corbusier’s work lacked clientele.

According to Tafuri, his projects were regarded as superstructures which would not allow for transformation and capital accumulation. In Tafuri, M. (1976 [1973]) *Architecture and Utopia* (trans. from Italian by B. L. La Penta), Cambridge: The Massachusetts Institute of Technology, 182.


250 Ibid., 7,8


252 The Alta Dam was finished in 1987, backed up by the Norwegian Prime Minister, then Gro Harlem Brundtland. A decade later, she acknowledged that this was not the right thing to do. Howitt, R. (2001) *Rethinking Resource Management: Justice, Sustainability and Indigenous Peoples Routledge*: New York, 293.


254 Ibid.


257 Boykoff voices the close link between Olympic Games and structures of capital accumulation. “With celebration capitalism, the spectacle scintillates our senses, while tapping into rich symbolism and marking a line between actors and spectators. In conjuring the spectacle, Olympics organizers slide us” in a spectrum of appearance which operates to a background of dispossession. Boykoff highlights an economy of appearances “that galvanizes spectacular accumulation”. Boykoff, J. (2014) *Celebration Capitalism and the Olympic Games*, London: Routledge, 18.


259 Ibid., 13


262 Ibid.


265 Ibid., 13


268 Ibid.
Boykoff suggests that Olympic spectators spend less money, focusing their spending exclusively on the sports events and avoiding local restaurants, venues or events; Boykoff, J. (2014) *Celebration Capitalism and the Olympic Games*, London: Routledge, 16.

Ibid., 5

Ibid., 6


Ibid.

Ibid.

The anti-urban mentality of the people of Lillehammer contributed greatly to what some researchers consider the positive outcome of the Games and what can be more cautiously termed as limited positive impact.

This is what Norberg-Schulz might have called counter-urbanism, identifying it as why Sverre Fehn’s projects were not particularly successful in Norway.


The story of Albertville and the abundant environmental criticism it generated was set out in Section 2.

Together with his business partners from the commercial sector, Wolfgang Muller, a hotel owner originally from Germany, proposed the idea of bringing the Games to Lillehammer.

Based on Naomi Klein’s observation that capitalism generates extreme military, ecological or financial situations. The unpleasant consequences generated by disaster capitalism are alleviated by celebration capitalism.


Ibid., 4

One might consider that there are no grounds for criticising Olympic events if they are the result of informed votes of large parts of the population of host cities or regions.


The referendum took place alongside the 2013 Parliamentary election.


Ibid., 448

The overall problems of the ecological crisis shall be discussed in further research.

Among the additions, an Olympic village was built at the feet of the jumping installation.

Part 3

Fabrications of Environmentalism
Self-sufficiency or Sustainable Development?
The first part of this thesis has challenged readings of the 1994 Winter Olympic Games as a success in terms of organisation, implementation and legacy. By disseminating wrongful understandings of what the solutions to contemporary environmental problems could involve, the event, through its complex and effective media machinery, captured world attention and condemned previous advances and research into ecology to oblivion. Part 3 hints in a distinct direction: the Lillehammer Games were the Olympic event with the least effective approach to the ecological crisis; and in fact, were the most damaging of its representations. This section concludes the study with an analysis of how this edited message was transmitted through particular architectural practices.

A reflection on the architectural and spatial configurations of LWOG should take into account the context defined by the Norwegian culture. An initial understanding of the concept of Norwegian self-sufficiency involves minimal material intervention into the environment, allowing for human survival. Further, self-sufficiency seems to suggest limiting resource consumption: which features as its main objective the establishment and maintenance of a responsible relationship between the built and un-built; natural (in terms of first and other Natures) and constructed environments. Finally, initial contemplations of the concept reveal strong architectural and spatial implications.

However, potential misinterpretations of self-sufficiency were enabled throughout the event in Lillehammer, as archaic forms of efficient territorial inhabitation overlapped with contemporary readings of sustainable development in the broader context of the international ecological crisis. The environmental interest exhibited by the local architects and community found a favourable context in terms of increased political discussion around the idea of sustainable development. In fact, dilution of the boundaries between self-sufficiency and sustainable development might have been one of the politically motivated aims of the event, in defence of interests seeking added value and accumulation.

Whether a mere coincidence, or the consequence of a politically determined decision, the embodiment of the UN’s green ambitions found their expression in an architecture produced in the context of a culture notorious for its sensitive approach towards the environment. However, did cultural conditions shaped over time by a unique relationship to land determine the character of the buildings designed for the Games?
Readings of Self-sufficiency

The modernity of Fehn’s projects was the cause of their failure: as what prevail in Norway, according to Norberg-Schulz, are psychological characteristics linked to a specific way of life that determines material production and the shaping of the built environment by the same people who occupy it. The Norwegian philosopher gives the example of a farmer living an isolated life in Norway, who is also the architect of the buildings he inhabits; and concludes that such a way of living led to "a profound and selective relationship with the environment", which encouraged Norwegians to entertain a conflicted relationship with urban traditions and, it could be added, modernity.

Similar depictions of Norwegianness are common. For instance, Klausen argues that in Norway “play for the sake of play itself is a morally dubious activity”. It could therefore be stated that self-sufficiency signifies awareness of the requirement for inter-generational collaboration for survival within an adverse environment rather than enjoyment of life. Indeed, others describe the Norwegian paradox, which entails a depiction of the Norwegian as “no homo ludens”. Building on Tord Larsen’s “Peasants in the Town”, Klausen argues that order, responsibility and seriousness are the requirements of Norwegian culture. In this light, the definition of self-sufficiency put forward by Norberg-Schulz as “to be oneself as much as necessary” may be associated with the reformulation of the Jante Law, according to which “you must not think that you are better than anybody else”, unless you represent a community. This implies the existence of moral and social codes of conduct inherited over generations and usually associated with life in small communities, such as villages. As Klausen explains, “the town and urbanism are a foreign element of culture in Norway. [These] features call to mind traits which we associate with stable, small-scale, local rural communities”. It could therefore be argued that “to be oneself as much as necessary” is not an accurate depiction of self-sufficiency, as it misinterprets agency. Perhaps a better definition of self-sufficiency is: to be oneself as much as permitted. In this way, the limiting agency of the community and environment is expressed.

In any case, following Klausen, it could be considered that the categories of community and environment are in competition with each other. He argues that Nature is a “strong candidate” for “Norway’s uniting totem symbol”, drawing on Hans Sørhaug, who establishes the symbol of Norwegian culture as based in the “local community”. Thus, self-sufficiency can also be traced back to primitive forms of inhabiting the region in territorial organisations such as villages. In this context, architecture was seen primarily as a shelter from the adverse conditions of the environment. Accordingly, the principles of construction respond to the requirements of the local climate and geography.

Norwegian Affiliation to Nature

Jacques Le Goff argues that European culture offered a variety of responses to modernisation. Among them, he highlights the notion of conflictual modernization, which stands for a modernism offering an alternative to tradition, which it eventually replaces completely. Opposed to the lack of consideration of inherited cultural values characteristic of conflictual modernisation, Le Goff defines the notion of hesitant modernization as a process which appears intertwined with the revival of local, regional, traditional values. He argues that in the latter, tradition is also prone to modernisation;
and in the words of Amadou Hampâté Bâ, that it may provide an equally effective vehicle for achieving progress and development:14

To speak of “tradition” is to speak of a heritage accumulated by a people over millions of years, and to speak of “modernism” is to speak of a taste or even mania for whatever is current. I do not think everything that is modern always represents an absolute progress with respect to the customs handed down to us from generation to generation.15

From a similar vantage point, Norberg-Schulz places the designs of Arne Korsmo and Knut Knutsen in opposition. On the one hand, the work of Norwegian architect Arne Korsmo provides an isolated example of what Norwegian tradition is not. His projects can be considered as representative of the Modern movement. The design of the Villa Dammann (1932), in particular, recalls the clear geometrical lines of contemporaneous buildings in Germany or France. The flat roof of the villa opposes the traditional Norwegian pitched roof in a quest for a new formal expression, in tune with the canon of the international style.16,17 In brief, Korsmo, who together with other Norwegian architects aspired to create the Norwegian delegation at the International Congresses of Modern Architecture (CIAM), opposes traditional forms of designing and building. However, under no circumstances can it be argued that this architectural trend was a mainstream tendency in Norway.

On the other hand, according to Norberg-Schulz, Knutsen was a forerunner of the Norwegian Regionalist Movement. The design for his summer residence in Portør, proposed in 1949, envisaged a building integrated within the surrounding landscape. Slightly submerged below the line of the ground, the house left only its roof exposed to the view of the observer. The multi-faceted pitched roof imitated the geometry of the rocky soil that surrounded it.18

The intent to integrate the building with the surrounding landscape in Portør was fundamentally distinct from the same attempt in Lillehammer, almost half a century later. Whereas in Lillehammer, the mimicking of the landscape was intended to deliver a Norwegian feature to the international audience, the IOC and its Olympic partners, in Portør, Knutsen designed and built a small sized house of organic plan, using locally sourced materials. His project was modest and hardly had any international visibility. Its national cultural representativeness, if intended, was discreetly downplayed. Not enough information is available on this very interesting project, but the location chosen for the house in a remote part of Norway points towards a search for closeness to Nature: a condition that the Olympic Games seemed to reference five decades later.

From the outset, it must be recognised that such practices of environmental integration stand in contradiction to the transnational character of the Olympic Movement. While architects such as Knutsen seemed to design and build not for international recognition but in response to and awareness of the sum of Norwegian geographical and cultural values, the aim of Lillehammer’s architecture was to transmit Norwegian values to the world. In this attempt, the specificity of self-sufficiency – “to be oneself as much as necessary” – was lost, and replaced by a simulation of its environmental benefits embodied in an imperfect representation of sustainable development.

Reflections on Critical Regionalism

An additional argument in defence of regional affiliation and the requirement for international recognition in 1994 can be found in the opposition detected by Norberg-Schulz between local cultural values and international Modernism as a movement.
Nordic architecture has ... come to play a pioneering role in the development of the “new regionalism” of the post-war years. The need for an architecture rooted in place can be seen as a reaction against the international style that dominated the interwar years and contributed to making our surrounding increasingly characterless and anonymous. It is therefore highly relevant to attain a deeper understanding of Nordic architecture.\textsuperscript{19}

While one may agree with the historical truth embedded here, it should be borne in mind that, as the example of Villa Dammann by Korsmo signals, Regionalism was not a unanimous Nordic trend (Fig. 8).\textsuperscript{20}

Norberg-Schulz writes that in the years preceding Lillehammer,

\begin{quote}
\begin{center}
it has not been easy for architects to find expression of the Norwegian environment. A time that sets functionalism as a goal appears to preclude nature’s interplay, but an architecture that cannot manifest the unity of life and place falls short ... As a result, some have begun to again interpret the Norwegian environs as built form.\textsuperscript{21}
\end{center}
\end{quote}

The opposition identified here between a functionalist and environmental design method precedes the issue of Critical Regionalism discussed at the start of the 1980s.\textsuperscript{22}

\begin{figure}[h]
\centering
\includegraphics[width=1\textwidth]{Villa_Dammann_Oslo.jpg}
\caption{View of the Rear Façade of Villa Dammann, Oslo; \textit{Photographed by Christian Norberg-Schulz}}
\end{figure}


The villa in Dammann and house in Portør (Fig. 9, Fig. 10) cannot be envisaged as two opposing architectural visions, despite what Norberg-Schulz seems to imply. They belonged to different times and responded to distinct social and cultural constraints. The house in Portør can be incorporated in what Norberg-Schulz qualifies as post-war Nordic architecture, an illustration of architectural Regionalism. Conversely, the house in Dammann represented an experiment with modern ideas in a context when Regionalism did not emerge as a reaction to it.
According to Keith L. Eggener, Critical Regionalism “described a type of recent architecture that engaged its particular geographical and cultural circumstances in deliberate, subtle, and vaguely politicised ways”. In “Placing Resistance: A Critique of Critical Regionalism”, Eggener argues that the aim was “to eschew both the placeless homogeneity of much mainstream modernism and the superficial historicism of so much postmodern work”. Eggener emphasizes the position of Kenneth Frampton: according to whom, the aim of Critical Regionalism was to provide a platform for interaction between values of universal civilisation and the particularities of place.
In this role, [Critical Regionalism] was said to mark a form of resistance – a decided reaction to normative, universal standards, practices, forms, and technological and economic conditions.\textsuperscript{27}

It is shown here how Lillehammer was determined and conditioned by the economic circumstances of the Norwegian geopolitical context, instead of reacting against them. Resistance to generalised types only occurred because the event remained intrinsically aligned to typical forms of consumption. However, it is argued in this research that affiliation to the characteristics of a global mega-event and their likeness to theme parks only appeared to legitimize and permit the design and construction of such forms of reaction. In fact, the “\textit{normative, universal standards, practices, forms, and technological and economic conditions}” controlled the event by means of reproducing traditional forms, not their functioning.\textsuperscript{28}

Support in this criticism can be found in the words of Eggener who quotes Lewis Mumford in his account of the stages leading up to the creation of the term \textit{Critical Regionalism}:

\begin{quote}
Regionalism is not a matter of using the most available local material, or of copying some simple form of construction that our ancestors used, for want of anything better, a century or two ago. Regional forms are those which most closely meet the actual conditions of life and which most fully succeed in making a people feel at home in their environment: they do not merely utilize the soil but they reflect the current conditions of culture in the region.\textsuperscript{29}
\end{quote}

It is argued in this thesis that this epitomised the downside of the 1994 Winter Olympics. Copying the formal expression of outdated inhabitation models and using locally sourced materials because they belonged to tradition, without highlighting the advantages of any other economic and social order, was a romanticized, unrealistic interpretation of architectural agency. Eggener argues that \textit{“Mumford’s was a modern, self-reflexive regionalism that shunned revivalist pastiche and cheap nostalgia”},\textsuperscript{30} In the absence of any such alternatives, the Games’ architecture was rather nostalgic, seeking to revive an outmoded, outdated tradition; not a contemporary interpretation of Norwegian social and cultural values, not to mention geopolitical circumstances.

Both Critical Regionalism and Norberg-Schulz’ anti-classical genre represent the same attitude of opposition to unifying global trends. But while \textit{Critical Regionalism} is a reactionary movement which cannot exist without that which it opposes, the anti-classical interpretation of Norwegian architectural culture seems to have evolved not from a dialogical interaction with its classical counterpart of the European South, but as a process of translating environmental conditions into architectural form.

Norberg-Schulz argues that geographical distance and isolation from the European mainland made it difficult for classical values to advance into Norway. This, according to him, was why modern trends were adopted so hesitantly. In Norberg-Schulz’ view, northern culture has been no more than a \textit{“white fleck”} on the European map. Although a powerful argument against the validity of such pessimistic, isolationist rhetoric could be made – citing the international projection of Edvard Munch’s art, or Knut Hamsun’s writing (Hamsun’s novel, \textit{Hunger}, was published in 1890 and enjoyed international recognition) – this distinction lays the basis of Norwegian self-sufficiency. He interprets the Southern world as classical – finite, easily quantifiable – and the northern world as anti-classical: infinite, incommensurable.
He explains that the description of the nature and basic forms of the Nordic countries shows that the Nordic search for the natural entails an anticlassical attitude. For though the classical also has its origins in an understanding of nature, its aim was the ideal, that is, the archetypal form that could represent a standard for all simple phenomena. In the unified space of the South, where things emerge proudly with their proper identity, such an objective is natural. The incomplete and unstable world of the North, conversely, cannot be represented and completed in this manner. Here, nature implies nearness and empathy; here one lives with and among things, as a participant in a web of phenomena. Mood is the basis for participation, also in the sense of cause.31

The closeness supposed by belonging to a network of natural phenomena has its roots in the incompleteness and instability of the Nordic regions. This is far too ambiguous a definition and cannot represent the basis for a critical interpretation of Norwegian values. One might ask in which ways the world of the North is incomplete. How is it unstable? Is Norberg-Schulz referring to geopolitical instability or geographical and environmental unpredictability?

Norberg-Schulz’ national rhetoric resounds in the Design Handbook for Lillehammer. For example, as shown in Section 4, more than once reference is made to the participation and empathy of Norwegians,32 rooted in the adverse climatic conditions which Norwegians of so many generations had to face. However, appealing Norberg-Schulz’s proposition may seem, this reason is not sufficient to consider closeness between people an exclusively Nordic attitude, as it could be argued that what he defines as an anti-classical attitude towards the natural environment is, in fact, a fundamental characteristic of any people living in similarly constraining conditions. Thus what Norberg-Schulz treats as uniquely Norwegian is, in fact, a universal response to the environment. It can therefore only be cautiously incorporated among the distinguishing pillars of one national identity. However, human adaptability to the environment is a suitable value to promote in global cultural and sports manifestations such as the Olympic Games. Yet recognition of it should occur in the absence of national promotion, and not as an attempt to assert cultural supremacy over other nations.

What does seem to be a distinguishing Norwegian trait is revealed in that a feudal system was never adopted in Norway, unlike other Scandinavian countries. “Norwegian socialism and welfare ideology were built on pre-existing egalitarian social structures”; which contributed to the independence of the Norwegian peasant, who was not a tenant.33 This distinguishing trait was never referenced to either in the design agenda, nor in the media around the events in 1994. This omission and exclusive reliance on geographical and climatic regional uniqueness resembles what Eggener refers to as “revivalist pastiche and cheap nostalgia”; with a very weak basis in accepted historical fact.

In addition, as Part 2 has demonstrated, despite constituting an essential point of the Olympic programme in Norway, equality was suppressed in Lillehammer 1994: partly because of inherent constraints of international Olympic sports and partly due to the overwriting of the local component with transnational commercial ambitions. Thus, equality between people, advertised as an important component of the Lillehammer Games’ agenda and of Norwegianness is absent from the Olympic event.

Finally, Norberg-Schulz paints a Norwegian nostalgic revival as he identifies what he regards as the physiological traits of the Norwegian countryside which dictate the anticlassical definition of the built environment.
In the North, the sun does not rise to the Zenith but grazes things obliquely and dissolved in an interplay of light and shadow. The land consists not of clear massing and distinct spaces; it disperses as fragment and repetition in the boundless. The vegetation is not characterized by particular species, such as stone pine and cypress, but is instead network and thicket. And the buildings lose much of their figural effect; houses lie scattered and hidden. Moreover, they consist for the most part of wood, a material that lacks the permanency of stone.34

While in general one could agree with the aesthetic analogy and the elegant comparisons put forward, the components of the environment (light, land, vegetation and built environment) could only be considered among the multitude of factors defining pre-modern Norwegian identity.35

The over-simplification of the relationship with the environment may suggest a series of architectural attributes which are not the exclusive outcome of this dichotomy. For instance, the low-density occupation of Norway may be a further cause of the lack of “figural effect” of Norwegian architecture. In any case, many cultures, which use wood as prime building material and occupy mountainous, rocky lands, have the same architectural preferences. One could then rightly question the uniqueness of the close relationship with the environment implied by Norberg-Schulz; and hence, based on such precedent, question the supremacy invoked in respect to the architecture of Lillehammer.

**Peer Gynt, another Interpretation of Self-sufficiency**

Moreover, Regionalism cannot be considered a self-standing direction; but needs to be studied in accordance with multiple other tendencies, such as reminiscent modernist ideas. In fact, most Norwegian architects working during the post-war years fused elements of modern with regional architecture, rooted in place. The work of Sverre Fehn, for instance, exemplifies this fusion and implicit loss of Norwegian specificity in its international projection. This study argues that self-sufficiency dissipates in Fehn’s work because of global influences.

Fehn was the most visible member of the Progressive Architects Group Oslo Norway (PAGON),36 a group he co-founded alongside Norberg-Schulz, Korsmo and others seeking to establish a Norwegian delegation for CIAM.37 His link to the Modern Movement is thus incontestable. However, Fehn envisaged local, cultural, social and architectural features as a working premise of his projects. These often translated into innovative constructive solutions which fused local traditional designs with modern materials, mostly concrete and glass. The projects for the Vikings Museum and Hamar Museum illustrate his specific working method. Furthermore, his projects were often conceived in remote locations, disconnected from any urban context and embedded in natural surroundings. According to Norberg-Schulz, Fehn was concerned with the primordial conditions of the landscape surrounding his buildings:38 “Fehn refers to the concrete world of the earth, the sky and horizon, and the many sketches that accompany his projects prove this”.39 Fehn gives similar importance to functional innovation paired with modern building techniques; and what might be viewed as the plastic integration of the architectural object within its natural surroundings.40

However, Fehn’s ambiguous relationship to modernism, assimilating its conceptions while condemning its violence over pre-existing environments, avoids interpretation of the geopolitical context of Norway. He argues:
I have never thought of myself as modern, but I did absorb the anti-monumental and the pictorial world of Le Corbusier, as well as the functionalism of the small villages of North Africa. You might say I came of age in the shadow of modernism.  

But he also confesses:

> When I build on a site in nature that is totally unspoiled, it is a fight, an attack by our culture on nature. In this confrontation, I strive to make a building that will make people more aware of the beauty of the setting, and when looking at the building . . . to see the beauty there as well.

However, a look at his most frequently praised buildings, such as the Hedmark Museum in Hamar, reveals wood utilised for structural but also voluntarily decorative purposes, alongside glass and concrete (Fig. 11). The large, glazed openings and beautiful wooden frames – the latter, a reminder of the past, when this was the most valued building material in Norway – have a high environmental and economic price tag, which do not recall the modest modes of inhabitation in pre-modern times.

![Figure 11: Hamar Museum by Sverre Fehn; Interior View of the Upper Gallery](image)

> Wood is employed for its plastic potential, as a structural but also a decorative element.

Source: Author’s personal archive

This description of Fehn’s work maintains validity in its projection to the next generation of Norwegian architects. As has been observed before and will continue to be highlighted in the last section, traces of this design approach can be identified in the major venues in Lillehammer, such as the Olympic ski jump or the Olympic arena. It is argued in this study that the outward influence of the Norwegian architect through international recognition contradicts the essential characteristics of self-sufficiency extracted from the Norwegian context. Through Fehn’s influence on the architects working in Lillehammer – he taught at the Oslo School of Architecture, and most architects interviewed acknowledge the influence of Fehn’s work on their own performance in 1994 – it can be posited that the architecture of the Lillehammer Games was closer to the ambitions of a national identity project – constructed through affirmation of a national sustainability brand rather than a sturdy affiliation to self-sufficiency understood as closeness to Nature.
Further to the discussion of self-sufficiency, it is noteworthy that, through drawing, Fehn attempts to determine the process which led to the self-sufficient living unit within the characteristic desert climate (Fig. 12). It could be argued that the act of drawing acquired for Fehn the role of trans-migratory device between the quantifiable conditions of the site and the architectural object. For instance, this process becomes evident in the sketches Fehn produced during his trip to Morocco, which envisage the relationship between the built object and the sunlight and landscape. In other words, Fehn is attempting to establish the mechanisms of an architectural response to specific regional (cultural, social and climatic) constraints. The application of a design method based on analytical environmental considerations (light, heat, wind, temperature, geographical configurations) within a distinct geographical and climatic context such as the Moroccan one reveals its universal validity.

However, the specific conditions of the Norwegian environmental context, where many believe such a design method originates from, largely pioneered by Fehn, are lost in a process which stripped cultural specificity from environmental exterior and analytical awareness, reducing it to generally valid principles. When interpreting the Moroccan environment, Fehn plays the role of the foreigner who learns, not the dweller who inherits the legacy of accumulated life experience within those specific conditions.

Following on Fehn's method, it could be inquired whether values associated with other notions describing universal visions of climatic and geographical cultural affiliations may prove more suitable for the purpose of constructing the Norwegian sustainability brand within the international context of Olympic Games. For instance, the philosopher Lucian Blaga, explores the space matrix theory. In the context of the construction of national identity, he posed the question of affirmation by means of an acknowledged common legacy, stemming from the cultural, geographical and climatic values shared within a specific territory.
The concept of *space matrix* stands for the sum of geographical features of a realm, influencing its cultural production. In his seminal work, *The Trilogy of Culture* Blaga highlights that architecture has acquired an important position at the crossroads of the reflexive relationship between human subjectivity and the practices of place. In other words, the specific configuration of a land impacts on the formation of the individuals who occupy it. In turn, through cultural practices of which architecture is viewed as most prominent, dwellers of that region act back on the land, transforming it. This universal understanding of the human-environment relationship is suitable for any context, eluding the less visible, yet important variations which may occur at a regional level.

It is argued here that by limiting regional specificity in Lillehammer, and dismissing self-sufficiency through the international projection of the event, an attempt was made to enforce a simplistic understanding of geographical and climatic affiliation. This fed into the recently constructed narrative of sustainable development found in the UN Green Agenda. Unfortunately, all-encompassing, politically-driven concepts such as space matrix are better drivers of global environmental discussions than self-sufficiency or any other local label. Notions of environmental awareness with global reach and adaptability are more susceptible to political manipulation, as they refer to the general and escape the uncomfortable constraints of the local.

Indeed, Gregory Bateson reveals the “context in which extreme constraint” combines “with runaway change and the distinctive blindness and inflexibility of the political process”. He posits that complex systems need very fine interventions to find a state of balance; but as he acknowledges more than once, “the process of systemic adjustment would require a degree of self-awareness not easy for politicians”. This is why local environmental constraints are only vaguely addressed by political action, much to the dissatisfaction of ecologists. As in the case of Lillehammer 1994, the required systemic fine-tuning of regional values such as self-sufficiency was absent, leaving the scene open to gross manipulations of politically constructed narratives of closeness to Nature.

The idea that the Lillehammer Games were an expression of profound Norwegian values needs to be therefore dismantled. Self-sufficiency, perhaps the most important feature of Norwegian culture, was excluded amid a political attempt to construct an image of national identity compatible with global economic and social forces. What remained from this devaluation of the local currency of self-sufficiency were aesthetic characteristics convincingly, yet only formally, put into practice by the designers of the event.

In accord with the thesis put forward herein, another definition of self-sufficiency is introduced by Norwegian historians and critics. To describe what could be termed Norwegianness, Norberg-Schulz, uses the term *self-sufficiency* in the introduction to the book on Fehn. The term explains the failure of the architect to materialize the design competitions he so often won in Norway. This, in his interpretation, was the result of the “Norwegian psychology: the individualistic, ‘self-sufficiency’ that Ibsen stigmatized in his Peer Gynt”. After all, in his play Ibsen places the notion of self-sufficiency among negative Norwegian traits, somewhere between egoism and narrowness. In apparent contradiction with his idealised interpretation of Norwegian tradition, the interpretation of *self-sufficiency* proposed by Norberg-Schulz as the Norwegian expression “to be oneself as much as necessary” acquires a new valence.

Indeed, embodied in Ibsen’s character, Peer Gynt, the term dwells on the notion of egoism. By breaking with the traditional context of his existence, Gynt embarks on an adventure driven by the quest for profit. In this process, he constantly avoids any affective bond to
objects or humans. Eventually, he returns to his place of origin in a plot which involves encounters with trolls and other fantastic characters. Hence, it could be argued that the practices of accumulation that took over the Olympic event in Lillehammer in 1994 are part of Norwegianness. This may well point in the direction that agencies involved in the Norwegian Olympic Games from 1994 did not reject, but enacted self-sufficiency, defined in this latter form. And by doing so they rejected a remnant inconvenient national past, which was in the way of development, sustainable or not.
Between Earth and Sky

In pragmatic terms, the organisers and designers of the Lillehammer event were responsible for an aesthetic interpretation of an idealised, yet imaginary and irrelevant, relationship with the environment, mediated by architecture as a material construct. This was due to an exclusively formal interpretation of inherited tradition, which provided a decontextualised and superfluous reading of self-sufficiency in an attempt to construct a national sustainability brand.

In other words, the relationship of the built structure to the ground, constructive thought, and the event’s territorial distribution, all tenets of Norwegian self-sufficiency in Klausen’s definition, were employed not in relation to the local context, but in the name of national supremacy in a global context. Next, each of these tenets will be considered in order to demonstrate that the two most important, well-known venues in Lillehammer did not become such expressions of self-sufficiency. The architecture of the Hamar Olympic arena and the Lysgårdsbakken ski jump site did not project traditional Norwegian values, but rather, a brand of national sustainability in keeping with the expectations of environmental awareness put forward during the preparation phase of the event, intended to distinguish the Nordic country from its competitors.

According to John Horne and Garry Whannel, Olympic Games tend to produce landmark objects that stand out formally and as unique and expressive, representing the contemporary architectural values of the host country. Yet in 1994, these venues were built at ground level – or in Hamar’s case, were even partially submerged. The tendency to hide large programmes on, in or under the ground seems to have been a common feature employed by all the design teams involved. This could lead to a false conclusion that the design was embedded in the notion of self-sufficiency, in an effort to ensure the integration of large built volumes within a non-urban material culture. In what follows, it is argued that the traces of architectural tradition were carefully choreographed to construct an image of self-sufficiency. The result was a revivalist-designed theme park.

Above, On and Below – Relation to the Ground

Torp’s Hamar Olympic arena was the product of experimentation with form to avoid the venue resembling a conventional vertical extrusion of an oval. The line of the horizon seems to have played an important role in the project; according to Torp, the intention was to generate a form which would not break the continuation of this line when observed from afar. This creative approach stemmed from the natural landscape of the fjords in Norway: the project owed much to the architect’s fascination with the coastline observed from the sea. This feature of the design might be evaluated as anchored in a certain sense of pride and belonging, as the concept was based on a natural feature of the Norwegian landscape. Torp acknowledges that his design was inspirational before being influenced by any constraining agendas.
To minimize the mass visible above ground, the venue was partially submerged. The voluminous presence of the programme was thus accommodated in the flat landscape of Hamar becoming an interpretation of Norwegianness filtered through the personal experience of the architect, not the result of a careful study of inherited, inter-generational regional values (Fig. 13). The way that the structure at Portør was submerged was fundamentally different. The Hamar Olympic arena was not an expression of Norwegian self-sufficiency, because of the extension of the programme and location chosen: the outskirts of Hamar. Moreover, visible efforts were made to make the venue fit the restrictive matrix, such as its relocation to protect a bird sanctuary or the line of trees to limit its visual impact.

Moreover, the way the venue was photographed in architectural magazines suggests careful study of the relationship between the building and the environment. However, an on-site visit in 2016 revealed that the venue is cut off from the waterfront by a fence (Fig. 14). Furthermore, the extensive parking lot at one end also breaks the much-praised continuity of the landscape (Fig. 15). Finally, an industrial and commercial zone composed by rectangular, extended volumes, conceals the venue from the city of Hamar and breaks the physical connection with it.
Figure 14: Hamar Olympic Arena; Exterior View
The fence to the left cuts the venue off from its surroundings
Source: Author's personal archive

Figure 15: Hamar Olympic Arena; View from Afar
The parking lot and adjacent commercial area further isolate the venue.
Source: Author's personal archive
Similar to the Hamar Olympic arena, the design of Lysgårdsbakken ski jump aimed for minimal intervention in the landscape, by negotiating the presence of the built volume within the profile of the ground. The venue was conceived in such a way as to minimally transform the existing landscape. Further on-site examination reveals its compliance with the Design Handbook: namely, the venue was designed not to stand out from the surrounding landscape. In the years before the event, the newly built venue and its location are described as follows:  

The Olympic ski jumping arena is situated in the magnificent landscape at the Northern end of Lake Mjøsa, etched into the hillside above Lillehammer and clearly visible from the centre of town. The need to adapt the arena to the surrounding cultural landscape has provided a stimulating and demanding architectural challenge. The ground conditions at Kanthaugen make it more suitable as a flying hill. . . . 63

Indeed, a glimpse of it from the town of Lillehammer reveals a discrete intervention, which would lead to assume that the surrounding setting was minimally altered to accommodate all components. The location and execution seem to suggest a careful analysis of the context, the benefits of which aimed to out-last the immediate gains from the transient Games. Material describing the preparation phase of the event also reveals that the "stimulating and demanding architectural challenge" of the technical constraints which accompany sports programmes was solved with the help of Torgeir Nordby, a specialist in the design of ski jumping sites. 64 He helped manage the compliance with specific sports regulations.

In line with Norway's respect for ski jumping, a possible interpretation of the elegant, minimal visual intrusion of the venue emerges. The aim of such a venue was to enable the jump, the main attraction of such events. The reading of the Lysgårdsbakken ski jump proposed here is that of a translation into architectural terms of the complex act of jumping. The in-run and landing platform are aimed to support the jump and create the backdrop for it.

Ski jumping is the Norwegian national sport. It is distinguishable from other winter sports in that it is composed of two phases, which require very distinct techniques. Athletes must gain as much speed as possible on the in-run, but also need to counteract the acceleration of the gravitational force during flight. Specialists argue that the most difficult part is the landing. How the athlete negotiates the transition from flight to standstill is crucial to success. Unlike venues at preceding Olympic editions, which stood out as landmark objects, the jump at Kanthaugen is designed around the relationship it has with the ground it sits on. A complex structural solution, elevating the structure from the ground, would not only require strong foundations, use more material, and severely alter the environment, but would also compete with the elegant flight of the athlete. Thus, the protagonist value of the flying athlete would be diminished. So Lillehammer's organisers sought a contrast between a heavy, concrete jumping installation and the light, elegant flight of the athlete. This was in keeping with the provisions of the Design Handbook. 65

However, the effects of this design approach were exclusively visual; do not amount to a reduced ecological, environmental impact on the site in question; and certainly do not correspond with the idea of self-sufficiency. The decision to keep the structure as close to the ground as possible – creating the illusion of a floating volume – can only be seen as a creative one, not a quantifiable, intentional approach to minimize the impact on the environment. The building's description in the main media output covered relevant
details of the construction phase; but these call into question the effectiveness of the environmental design strategies, which betray the initial intention to make a statement of self-sufficiency.

The ski jump in Lillehammer was portrayed in an idealised way by the Norwegian media, which overstated the good intentions of environmental awareness and downplayed the damaging consequences for the environment. That trees needed to be cut down to fit the venue and the adjacent cable-car, contradicting the aura of environmental awareness assigned to the event, was not highlighted in any publication during LWOG. Although the damage inflicted on the environment may be judged as smaller than in Albertville, as some of these trees, for instance, were replanted, it was real and considerable. Yet the media machine of the event censored certain aspects of the organisation and execution of the venues, as it sought to portray a flawless environmental Olympics. Nevertheless, credit must be given to the designers and organisers for tacitly diminishing the negative consequences which seem to be unavoidable with Winter Olympic Games.

Extensive alterations to the hillside were inflicted at Kanthaugen. After all, according to its textual description, the venue seems to have been etched into the hill, rather than superimposed. The excavation process at Kanthaugen hill was not the least invasive way to accommodate the building. Apart from the reduction in the number of trees, the principle of mass compensation seems to have been both an excuse and an object of pride. The many options developed for the section of the slope highlight the minute calibration of extracted rock and earth from the hillside necessary to level the circular landing platform at the base of the hill (Fig. 16, Fig. 17).
The required inclination of the two in-runs, marked as a continuous line, overlaps with the pre-existing hill profile (depicted using a dotted line in many of the drawings), in an apparent attempt to reduce the mass extracted from the hill and added to its base. The slides produced after photographing the hill before the intervention reveal a different configuration: there are more trees covering the slope and the inclination of the hill seems less steep than that after the intervention. It is based on these images that it could be argued that the intervention was excessive, fundamentally transforming the geological profile of the landscape. In brief, despite the efforts of the architects to diminish invasive constructive operations, the end result permanently altered the setting, reconfiguring the hillside.

This damaging environmental operation was camouflaged using traditional features of local culture. The solution used to retain the side of the circular platform at the base of the jump, after rock and earth from the hill was deposited, recalls traditional stone walls. Large pieces of rock resulting from the carving process were piled up to compensate the lateral loads of the amassed earth. The principle of mass compensation may be interpreted as self-sufficient, as the debris were used entirely to solve a design issue. Yet use of existing materials is not equivalent to ecological awareness and minimal environmental impact – ideas intensively marketed in Lillehammer. Moreover, the extent of the intervention in relation to the retaining wall overshadows the discrete size of the retaining wall pictured in the image used by the architects as a reference. In addition, the amount of energy spent to move the large earth mass to its new position cannot be justified within traditional building techniques.
Figure 18: Lysgårdsbakken Ski Jump by ØKAW; View of the Site Before Intervention
View from South-West
Source: ØKAW Arkitekter MNAL AS, Oslo

Figure 19: Lysgårdsbakken Ski Jump by ØKAW; View of the Site Before Intervention
View from North-West
Source: ØKAW Arkitekter MNAL AS, Oslo
Figure 20: Image of Traditional Retaining Wall in Norway
Source: ØKAW Arkitekter MNAL AS, Oslo

Figure 21: The Retaining Wall for the Out-run of the Ski Jump; Perspective Section
The earth removed from the hill was used to level the ground. The side towards the bottom of the cliff is sustained by a retaining wall that reinterprets the traditional constructive solution in this region. The human figure reveals the size of the intervention.
Source: ØKAW Arkitekter MNAL AS, Oslo
Furthermore, close observation of the venue reveals that it does not sit on the ground, but is elevated from it with the help of metal plots, creating an air-gap (Fig. 22, Fig. 23). This architectural feature allows vegetation to grow very close to and even beneath it, in a gesture that can be interpreted as respectful towards the environment (Fig. 24). Moreover, the distance between the body of the in-run and the ground varies to accommodate pre-existing functional conditions of the site, such as the footpath crossing under the venue close to its highest point. This may be seen as a masterful display of constructive thought, discharging the bearing load through a minimum number of structural elements. This was identified in the various combinations of concrete and steel solutions drawn and issued by the architectural firm during the design phase (Fig. 25).\textsuperscript{70}

\textit{Figure 22: Support of the In-run by ØKAW; Photograph}
Source: Author’s personal archive

\textit{Figure 23: Support of the In-run; Design Sketch and Lateral Projection}
\textit{The articulated element elevates the structure from the ground.}
Source: ØKAW Arkitekter MNAL AS, Oslo
Figure 24: Lateral of the Ski Jump In-run; Photograph
Source: Author’s personal archive

Figure 25: The K120 In-run of the Lysgårdsbakken Ski Jump by ØKAW; Study Sketches
A key element of the architectural design process was constituted by the project for the intermediate support of the sliding platform. The extensive series of options developed in this study speak clearly about the architects’ interest in the relationship with the supporting terrain. It is not only a discussion around constructive or structural issues, but a quest aimed at achieving a harmonious flow of efforts into the hill.
Source: ØKAW Arkitekter MNAL AS, Oslo
The elevation of the in-run had similarities with the design of traditional Norwegian barns; examples of traditional architecture at the Norwegian Folk Museum in Oslo provide evidence of the inspiration of the designers. Norberg-Schulz clarifies the design approach as a process of updating traditional building methods and types:

Building tradition . . . connotes an open yet bounded manifold of interpretative possibilities. When these are employed in resonance with the demands of time, life may take place, and tradition may, in the best case, be realized as architecture.\(^71\)

The paragraph opens up the possibility that the material shift from wood to steel and concrete can be classified as pertaining to the spirit of the time when the Olympics were organised in Norway. Moreover, it is further speculated that this may have led to an innovative constructive language that "inherits traditional constructive methods".\(^72\) Is this how the similarity with traditional building forms should be understood in the case of the venues for the 1994 Olympics?

While it is true that traditional types of barns are raised from the ground, to which they distribute their load through wooden pillars, the motivations for such a design feature are purely functional, before any aesthetic or decorative functions could be assigned to it (Fig. 26). Thus, in summer, air circulates under the enclosed space to ensure that it remains dry; while in winter, the elevation of the structure ensures continuity between the snow accumulated around the building and the finished floor level of the interior. In the case of the ski jump in Lillehammer, the elevation of the in-run does not seem to respond to such pragmatic necessities. In addition, a false conceptual identification must be noted. The reference to barn structures cannot be accepted in a critical analysis of the venue since the distinction between the two programmes – the contemporary one, an open-air winter sports facility; the old one, an enclosed storage facility – disables the benefits promised by such a comparison.

*Figure 26: “Stabbur pa Borgen Gard. 1942”; Drawing for an Elevated Barn Structure*


Oslo: H. Scjepig & Co.
In other words, the ski jump at Kanthaugen refers to traditional building methods without responding to the same programmatic and functional constraints. Seen in this way, the value of the venue only goes as far as its volumetric appearance and constructability. It cannot be considered an exponent of self-sufficiency. Moreover, even if it can be regarded as a successful design exercise if considered in isolation from its Olympic and Norwegian context, given the problems discussed, its design qualities do not justify the high praise given to the venue during the Games.

The argument that the building process represented a response to the geographical and climatic characteristics of the environment does not stand up either. The invariability of these conditions over the past two centuries was not sufficient reason to allude to the same building techniques, despite an upgrade in the material deployed. The cultural conditions of habitation have changed. For one thing, the impositions of an international organisation such as the IOC cannot be placed side by side with the efforts of land-bound peasants to protect their crops and ensure the survival of their families and neighbours. For another, Norway has ceased to be the agrarian system it was during past centuries. Now, just as in the early 1990s, Norway is a potent agent in the extraction, distribution and manufacturing of some of the most globally sought after commodities, such as gas, petrol and arms. Recalling Mumford, clinging onto a tradition for which there is no longer any material necessity seems irrelevant, even futile.

All in all, the camouflage technique visible in the ski jump and ice skating rink does not necessarily imply either highly ethical environmental values or self-sufficiency. The attempt to conceal the programmes can also be interpreted as one more means of conveying only a partial interpretation of the environmental implications. Hiding the volume or embedding it within the landscape is not equivalent to reducing the material impact on the environment in which it is inserted. The only achievement is a visual concealment which may deceive the observer; establishing a relationship of equivalence between appearance and impact. That these interventions were cosmetic was intended to transmit an impression of minimal ecological impact. Moreover, considering the effort to excavate the hill so that the required inclination of the in-run matched that of the ground in the case of the ski jump, the interpretation of respect for the environment falls apart. Close reading of all the clues demonstrates that this was merely an artifice intended to construct a positivist image of Norwegian tradition. The resemblance to Norwegian traditional structures only deepens the concerns raised here.

**Constructive Thought**

In addition, Norberg-Schulz argues that throughout Norwegian history,

> detailing and articulation [allowed] to maintain the immediate qualities of an environment, establishing links to a context of use that gave all phenomena deeper meaning. … The world-image was both universal and local, and resulted in practice from the variation of common types, in accordance with place.\(^{73}\)

The organic inter-relationship between building and its environment as understood here does not manifest itself directly through immediate, clear references. The connection to the environment is an interpretative process, translated into constructive details that perform structural and symbolic functions in relation to the surrounding environment. One must therefore reject the interpretation that the Olympic venues constructed in Norway were rooted in Norwegian tradition. How the environment was embodied in buildings in the past was fundamentally different from the simplistic, direct, obvious goal
in 1994. The materiality of the LWOG buildings was only an interpretation of models of deeper symbolic relevance.

For example, the use of wood as the principal construction material of traditional Norwegian architecture was extensively discussed in the context of the Olympic event. Norberg-Schulz argues that

the Nordic world is conserved and manifest when wood is employed as building material, even though there is always at issue a choice, among its particular qualities, with respect to the character of place. In general, wooden building is dynamic; its elements form a cooperative, elastic whole, reflecting the vital ramifications of wood. And correspondingly, the world is understood as an interplay of forces, rather than a collection of characters, and the interplay of forces results in moods.74

The interplay of natural forces may suggest an ecological perspective on building methods. Rather than being the object of intensive industrial processing, wood is used in traditional Norwegian architecture in a form close to its original condition. The exhibits at the Norwegian Folk Museum provide numerous examples of such constructions. (Fig. 27, Fig. 28) The Norwegian cottage, as in any other region where timber is the main building material, is made of wood. The roof is insulated and waterproofed using cork and mud alongside the plants that grow on it.75 The requirement of the Design Handbook to resort to wood originated in the dependency of the local construction industry, which continues today, on this material.

Yet in 1994 wood was not employed in its brute form for the Olympics. Rather, it was used in the Hamar arena, for instance, in an intensively processed form of laminated beams, which respond to clearly quantifiable standards and leave little room for natural "vital ramifications". The venue’s appearance was made possible by the implementation from the design phase, not of traditional constructive methods, but of the cutting-edge technology of advanced computation to determine the geometry of the beams, which are distinct from one another. Moreover, the team behind the Hamar Olympic arena broke with precedent by designing the largest span of laminated wood beam ever attempted at that time.76
Another case where the use of wood in traditional constructive sequence was interpreted in contemporary building techniques and language is that of the Lysgårdsbakken ski jump. In the case of the ski jump at Kanthaugen, not only the landing platform recalls elements from the Norwegian architectural tradition, but the entire building is adorned with references to it. A closer look at the building itself reveals the intention of the architects to mimic self-sufficiency rooted in traditional building methods and design features. The linear concrete side elevations of the in-run are divided by shadow-gaps alluding, according to Wike from ØKAW, to traditional Norwegian log construction.

Hence, the shadow-gaps covering the entire extent of the exterior elevations of the in-run, access volume and waiting room, may be interpreted as a representation of the spaces between two overlapped logs in a traditional Norwegian hut. Yet it is a necessary constructive element adapted to the requirements of the used material, in this case, concrete. The shadow-gaps also divide the concrete surface in smaller continuous areas, avoiding premature cracking due to the extreme climatic conditions to which the outdoor building is subject to.

It becomes then visible that the Lysgårdsbakken ski jump condenses archaic references to the earth and sky alongside traditional sports (such as movement and stillness) by using modern architectural language and modern materials, such as concrete. It could be interpreted that the distribution of the shadow-gaps along the elevations of the ski jump mirrors the movements of the skier. The lines are distributed horizontally when the athlete is stationary; yet become oblique – tilted 45 degrees left and right – when they decorate the laterals of the in-run.

Reproducing in concrete the interspace between two logs in traditional Norwegian building represents the original construction methods – but does not stem from the local cultural and geographical environmental conditions. Therefore, the link to self-sufficiency is broken, as what is revived is only the formal expression of very complex relations between the archaic dweller and the environment, summarised in the notion of self-sufficiency. The emphasis placed by Norberg-Schulz on constructive thought and representation of the environment is absent from the design of the ski jump. The "Nordic built form is . . . founded in a combination of representation and complementation", Schulz argues. He adds that in
In this manner, nature's web is manifest in anti-plastic skeleton construction and ornament. The line is its primary expressive element, which takes the form of half-timbered and stave construction. However, in the case of the ski jump installation, the skeleton is replaced by a monolithic structure, moulded to simulate the appearance of a dialogue between the environment and architectural expression through analogy with historical precedent.

Nevertheless, Norwegian architectural education seems to stress constructability. The most popular architecture magazine in Norway, edited by Norberg-Schulz from 1963 until 1978, is Byggekunst (The Art of Building). Not surprisingly, then, the motto of the architecture firm, ØKAW, is “Clear dream, real things”. Wike explains that as “a Norwegian, you have construction inside you!” The generalised constructive sensibility implied here explains, to a certain extent, the design of the shadow-gaps in the elevations of the ski jumping arena. In ignorance of the fact that it wholly contradicts Norberg-Schulz’ poetic vision, one might argue that the pragmatism of the architectural approach in Lillehammer enabled – albeit only to a certain extent – constructive innovation to incorporate contemporary, mass-produced construction materials such as concrete; while also recalling local materials, among which wood was most representative of Norwegian culture.

It was at the level of constructive thought that the architects opposed the impositions of the Design Handbook. Various interpretations of the Handbook, established via a long negotiation process aimed at eluding their hegemony, are traceable in the design and execution sequences of the buildings. For instance, in an attempt, perhaps, to escape constraints and limitations imposed by the false affiliation to traditional modes of construction imposed by the Design Handbook, the ØKAW team exploited the plastic and aesthetic potential of using concrete instead of wood.

Moreover, by adding iron oxide to the concrete during its mixing, the designers managed to control the colour and the tone of the material. The darker tone contributed to the effect of camouflaging the venue within the landscape during summer, when it is less used; and highlighting its presence against the background of the snow in winter, when its use reaches its peak. It seems that a way was sought to mediate between excessive reliance on an artificially constructed set of traditional architectural values, and the expressive potential offered by contemporary construction techniques. The sketches remaining after the event, which describe the design process, reveal a concern for updated construction techniques (Fig. 29). However, the simplicity of the constructive sequence for the ski jumps, the choice of materials, their composition and superposition are not, however, the most visible aspects of the 1994 Olympic event. It is something that only a trained observer may notice.

This material experimentation cannot be mistaken for a quest for sustainable development, nor self-sufficiency. Experimentation with new materials should not be limited to decorative and aesthetic effects if the project tackles urgent constructive problems, such as those associated with the ecological crisis, to which the notion of sustainable development is viewed as a possible solution. The refined exercise of highlighting the presence of the building against the background of the snow is disconnected from the tenets of self-sufficiency which describe discrete, non-iconic structures.
Norberg-Schulz, as was noted, identifies the particularities of the Norwegian building tradition as stemming from a conflicted relationship with modernity. "Norwegian building tradition has not been as amenable as the Danish or Swedish to unification with the modern". He makes a clear distinction between Norway and its Scandinavian neighbours on the criteria of their relationship with Modernism. He argues that "this is undoubtedly the result of its compound and ambiguous character, and its incomplete liberation from original methods as well". Thus the root of this distinction lies in an affiliation to traditional building techniques and living conditions.

This seems to be the consequence of the low density of occupation in Norway, as well as its more adverse geographical configuration. Confirmation of this assumption could be found in the fact that "Norway is the most 'difficult' of the Nordic lands with respect to nature, and this is reflected in the lack of certainty among its modern architects". What Norberg-Schulz describes as uncertainty means the search for an alternative to Modernism, through architecture that negotiates between imported ideas and specific local conditions.

However, this attitude towards construction and materials was not reproduced in Lillehammer. Buildings such as the Hamar Olympic arena and Lysgårdsbakken ski jump were liberated “from original methods" of building – types such as barns and cottages – as well as from traditional uses of materials – at least in the case of wood. It is therefore assumed in this thesis that self-sufficiency was abandoned in an attempt to portray a nation at the forefront of the latest architectural trends. If Olympic events are to become emblematic of the entire cultural production of a country that tries to showcase its best values on such occasions, this brief analysis of Norwegian construction and design culture reveals consonance with, not opposition to contemporary design experiments and values.
**Territorial Distribution**

Norberg-Schulz describes the Nordic world through words such as interplay, fragment, repetition, boundless, network, scattered, and hidden. These features could be considered the drivers of the territorial reading of the Games. The buildings were intended as hidden forms within the environment: never dominating their surroundings, but subordinated to it. The Lysgårdsbakken ski jump was designed with the intention of reflecting the environment in which it was inserted, giving way to an interplay with Nature. Finally, the more common compact Olympic scheme was fragmented in a network of discrete venues scattered along the Mjøsa Lake, the natural feature bordered by the two communes hosting the Games, Oppland and Hedmark. Thus, the boundless Norwegian landscape was not interrupted, but continued by the insertion of such relatively mass-neutral venues alluding to its repetitiveness.

This merely constituted moves towards aesthetic compliance with self-sufficiency. So far, it has been shown that the concealment of the venues was insufficient, falling short of traditional Norwegian values. An attempt was made to demonstrate that the most important building in Lillehammer, the Lysgårdsbakken ski jump, did not reflect the conditions of its environment, contradicting the premises of self-sufficiency. Next, it will be shown that the apparent uniform distribution of venues in different locations was the result of administrative decisions dominated by economic calculation, not an attempt to comply with self-sufficiency requirements.

Two aspects of the project behind the insertion of the Lysgårdsbakken ski jump enable a discussion whether the design process and outcome of the territorial scheme were in tune with the notion of self-sufficiency. First, the distinction between compact and decentralised schemes offer valuable insight. The more compact the event, the less territory is affected by it. In other words, a contained event would also offer the opportunity for contained environmental intrusion and damage. Conversely, the less dense the event, the smaller the impact of isolated venues on the environment. In this second vision, transportation infrastructures become necessary to move visitors from one site to another. The stakes were high, because the previous edition in Albertville, decentralised though it was, did not manage to speculate on the opportunities offered. Moreover, the more compact Olympics promised accessibility and relative success by the proximity of the venues to one another.

A so-called compact scheme was first proposed by Håkon Mjelva in 1989 as a response to an initiative from the local council. Judging by his work, minimal intrusion in the environment was the driver of the design intention. However, not even the accompanying text of the proposal made explicit reference to the idea of environmental awareness. At no instance is the impact on the environment, which such mega-events usually entail, mentioned. Instead, the project stressed the advantages of focusing on a compact Olympic setting (Fig. 30, Fig. 31, Fig. 32).

The sketches and drawings of the proposal reveal elegant ephemeral structures sustained by minimal compressed sections and a multitude of tensed cables. Moreover, the tensile roofs of the venues suggest an Olympic setting which would be easily dismounted after the conclusion of the transient mega-event. The modularity of the proposal (the same module appears to be the irreducible unit of all the venues) comes in contrast with the environment: illustrating a strong opposition between the permanence of the natural setting and the transient character of Olympic mega-events. Moreover, in the text accompanying the boards, special reference to the position of the venues so that they take
advantage of environmental conditions such as sunlight and wind, and inflict minimum impact on the land, is made. In addition, visitor access is carefully considered in an attempt not to overwhelm the environment, and ensure the usability of the permanent venues such as the ice hockey rink after completion of the event.

Mjelva raises the issue of landscape integration of the larger venues for the first time in the design process – but does not want to give in to mimetic subtraction processes. He argues that

> even with its moderate heights, the hall will obviously be visible in the landscape, in spite of the separated and dynamic shape that will reduce the impression of a large building. It is clearly an expression of the use of the building. There will be no attempt to flee from the problems by digging the hall into the ground.

This thesis argues that Mjelva's position entails critical issues associated with such programmes; and marks a design process more in tune with the prerogative of environmental awareness. Mjelva's proposal reflects the tensions between conservation and growth inherent at almost all Olympics. That the design maybe emerged too early or was not sufficiently defended condemned it to an anonymous presence on the shelves of the Oslo Architecture Museum, instead of becoming a required objective architectural and territorial critique, condensing all the problems associated with Olympic Games.

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Figure 30: *Proposal for the Olympic Site by Håkon Mjelva; Elevations and Sections*  
Source: The National Museum of Art, Architecture and Design, Oslo
Figure 31: Proposal for the Olympic Site by Håkon Mjelva; Perspective
Source: The National Museum of Art, Architecture and Design, Oslo

Figure 32: Proposal for the Olympic Site by Håkon Mjelva; Wind and Modular Coordination Diagrams
Source: The National Museum of Art, Architecture and Design, Oslo
The Oslo-based studio, ØKAW, proposed their own interpretation of a compact scheme on 15 February 1990. According to it, all Olympic venues were to be placed in the same location, to minimize their impact on the environment (Fig. 33, Fig. 34). This scheme offered clear advantages, highlighted on many occasions by the design team. The town of Lillehammer would find itself at the centre of international attention, and acquire increased protagonist value. The design team speculated on a lesser amount of land being directly altered. This point allows for debate, as a more concentrated impact also involves increased disturbance in the ecosystem. Finally, administrative control over the Games was to be given to one commune. This would result in less troubled management of the event.

The compact scheme was criticised from within the LOOC for being too dense. The idea that territorial optimisation had been pushed to the extreme became popular among the LOOC. The main argument against it involved Lillehammer simply being too small to host the large number of visitors. Transporting them daily from Oslo would also put excessive stress on the existing railway system. The Norwegian Olympic Committee was forced to recognize the unviability of the compact scheme.

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Figure 33: Proposal for the “Compact Scheme” by ØKAW; Massing Study

This drawing shows the various possibilities envisaged for the insertion of the venues at Kanthaugen.

Source: ØKAW Arkitekter MNAL AS, Oslo
The energy with which the compact scheme was promoted became the object of humorous critique among the LOOC. A poster depicting an extreme version of the compact scheme (Fig. 35) was designed. The Olympic venues were drawn in a cumulative vertical structure, to show that such a scheme would hinder any attempt to organise a functional event. Tormod Holbrekken, LOOC team member at the time, now the Chief Archivist at the Lillehammer Olympic archive (Fylkesarkivet i Oppland Fakkelgården), notes that the aim was to draw a comparison between the compact scheme and a shopping mall.\textsuperscript{102}

The underlying message compares the notion of minimal environmental impact at any cost with real estate land optimisation efforts. The denser the occupation, the more land is freed from the destruction associated with mega-events. However, the by-products of such a dense scheme may be even more damaging, as extremely invasive practices lead to deterioration of the local environment beyond recovery. In other words, the compact scheme's main aim is the unequivocal separation between the human-made and the environment, in an attempt to ensure the preservation of as much land as possible in pre-Olympic conditions.
Figure 35: Satire of the Compact Scheme by LOOC Staff Members; Poster
This drawing is conceived as a critique towards the compact scheme.
Source: Fylkesarkivet i Oppland Fakkelgården archive
This compact scheme was rejected for economic reasons, some of which were highlighted previously. The post-event use of such dense hubs has been shown to be problematic. The legacy is difficult to use because of the high maintenance and use costs, which a regional budget can hardly afford. Moreover, the message evoked by the LOOC explains that had such a compact scheme been implemented, the venues would have lost their individual character, making it impossible to capitalize on the Olympic legacy after the Games. The poster highlights that implementing compactness at any cost may lead to destructive consequences comparable with spreading venues throughout the territory. In other words, remaining faithful to self-sufficiency understood as isolation of the economic, social and cultural threats posed by mega-events, results in the misuse of the potential such events entail.

Scattered territorial distribution represented a response to the compact scheme in the form of the third proposal considered in this research, also by ØKAW; a categorical reaction to the previous two. Maintaining the specificity of every chosen location, the venues were spread along the villages and towns belonging to two different communes. Thus, Hamar hosted the skating competitions in a newly built Olympic arena; Hunderfossen organised the luge and bobsliegh competitions; while Gjøvik held a number of ice hockey matches. Alpine ski competitions were set in Hafjell and Kvitfjell. The town of Lillehammer was to host the opening and closing ceremonies as well as the ski jumping events. The Håkon Hall, built at Stempesletta, Lillehammer, hosted the ice hockey tournament. The Birkebeineren ski stadium was the setting for the cross-country and biathlon competitions; while the Kanthaugen arena in Lillehammer hosted the freestyle Olympic contest.

The opposition between the compact schemes and the decentralised one informs the category of self-sufficiency. According to its definition – to be oneself as much as necessary – a reaction to the invasive, transnational Olympic Movement, isolating the threat and containing the potential damage caused by a large increase in visitors over a short period of time – can be considered self-sufficiency. The decentralised scheme can however also be considered the expression of self-sufficiency as, conversely, it entailed the acceptance of the premises of the Olympic Games and absorption of the damage and benefit associated with it. However, while the former entailed affiliation to an inherited tradition, the latter only represented its formal interpretation.

In addition, considering the precedent, the question of compactness or decentralisation of the venues seems not to result in more environmentally successful Olympic episodes. Calgary, a compact scheme, six years before Lillehammer, displayed little awareness towards the pre-existing conditions of the Olympic site. Similarly, the more scattered Albertville proposed a functional system of connections and venues which was superimposed onto the configuration of the land. Conditions of the site before intervention were violently adjusted to fit requirements of the venues.

In Lillehammer, too, there were proposals to adopt a similar destructive attitude towards the environment both in the compact and scattered instances. Next, a brief analysis of the specific case of the Lysgårdsbakken ski jump’s connection to the town of Lillehammer, will explore various options for how to make the venue accessible from the town. This shall reveal that the design process was the result of an effort to only formally adhere to environmental awareness and tradition, discarding the implications of their functional benefits.
As set out in the Design Handbook, “Kanthaugen is a wooded hillside which forms the eastern rim of a large expanse of countryside in which Lillehammer is set. It is in the shape of a prominent dome and marks the end of the build-up slope to the east.” In the same document, the site of the Lysgårdsbakken ski jump is emphasised in terms of its relationship with Lysgårdsjordet, part of a large span of fertile and productive farmland. This natural feature separates the town of Lillehammer from the hill, impeding a direct connection between the two. Thus, the problem of the connection of the venue to the town of Lillehammer emerged.

Two options were put forward by the architects at ØKAW. First, as part of the compact scheme, the connection between the train station and the venue would be realised through what Wike refers to as a monumental walkway. As he explains however, despite creating an impression of festive monumentality, this approach was excessively invasive to the environment. Indeed, the drawings show that the stretch of farmland was insensitively cut through by the walkway. Then, some of the options proposed in Lillehammer would have repeated the serious mistakes made in Albertville. Credit must be given to local architects for avoiding this undesired situation as they challenged the views and the exigencies of the IOC. This further recalls subsequent Olympic editions when, in the absence of an ambition to revive a marked environmental tradition, with all the issues this entails, the Olympic Games exponentially pursued economic profit over environmental considerations.

The second proposal connecting Lillehammer to the ski jump site involved a sinuous path bordering the forest to the right of the venue and was associated with the decentralised Olympic aspirations. The editors of Byggekunst describe the stance of the designers as anchored in tradition: “In keeping with local tradition, all the roads and other areas connected with the arena have been located at the borders between the forest and the . . . landscape.” In an attempt to construct an image of environmental awareness at any cost, such affirmations allude to a local tradition that is not defined. Moreover, some of these environmental arguments do not necessarily reflect the ambitions of the designers, who more often than not seem to have acted under the influence of their inspiration rather than adhering to strict moral and environmental codes.

For instance, the decision to move the access path to the ski jump may have been the result of a quest for increased scenography value, not environmental awareness or self-sufficiency. This solution provided approaching spectators with lateral views of the venues. This perception of the ski jump was in tune with the nature of the sport: the position of the athlete in mid-flight can be fixed in depth as well as height. The previous option had only provided a frontal, symmetrical view for spectators, with the athlete’s jump perceived only as vertical displacement. Moreover, the access path followed the level lines marked on the topographic plans, saving the level difference in a more sensible and comfortable way. The previous scheme required an inclination of the pedestrian walkway, turning it into an ascension towards the stone-retaining wall of the venues. Such functional design arguments went apparently unnoticed in the descriptions of the adopted approach path.

The choice of the sinuous path instead of the shorter, more invasive first option speaks to an ambition to use the conditions of the surrounding environment as a fundamental constraint. In this way, a minimally invasive solution was implemented. At the same time, the layout chosen for Lillehammer 1994 exhibited the idea of self-sufficiency, envisaged here as economy of resources, managed in a way which would maximize their functional
potential, in keeping with the morphology and distribution of pre-existing features of the landscape (Fig. 36, Fig. 37). Yet this intention was vehemently contradicted by the extent of the spatial requirements associated with programmes such as parking spaces, roads and, above all, the Olympic venues. Some critics considered that the roads and parking spaces around the ski jump were over-proportioned and did not meet the requirements of the area after the Games had finished.

It is therefore argued that the decentralised scheme was not the product of environmental considerations. Moreover, it did not materialize the environmental benefits it was praised for, despite complying with the economic advantages it promised. The continuity of the landscape was hindered as shown in the case of the Hamar Olympic arena, whereas the decisions to move the connecting path in the case of the Lysgårdsbakken ski jump was likely taken for reasons other than environmental considerations. However, the distribution of the venues throughout a larger territory ensured their economic exploitation in the decades following the Olympic event. Read this way, the development triggered by the LWOG, was indeed more sustainable than the previous editions. What makes it unsustainable is the promise to the world that such episodes are possible without revealing the entire extent of their context which is strongly linked to precisely the causes of the crisis calling for sustainable development in the first place.

Figure 36: The Ski Jump Installation; Site Plan
The dotted lines show the desired shape while the continuous ones represent the natural configuration of the slope.
Source: ØKAW Arktitekker MNAL AS, Oslo
Figure 37: The Ski Jump Installation; Presentation Panel Depicting the “Monumental” Walkway Option
Source: ØKAW Arkitekter MNAL AS, Oslo
Conclusions Part 3

As far as the architecture of LWOG goes, it was observed that the interest of the architects in Norwegian tradition was aesthetic, not substantively material. The fairy-tale impression of many live viewers, but also those who watched the event on television – the eye of the world – alludes to a theme park of environmental awareness constructed by recalling symbolic and traditional values of self-sufficiency. Furthermore, the condition of becoming the centre of attention for a few days in February 1994, limited the agency of the event to interrogate critical aspects of environmental sustainability.

As required by the Design Handbook, the event had to create signal elements that would concentrate attention from “salient vantage points, approach roads and TV-camera sites”.112 Moreover, when describing the specific, imposed shape of the ski jumping complex, the authors of the Handbook argue that for

the spectators, the drop shape will probably result in their getting different views of the competition jumping, because the installation consists of two separate jumps of different sizes. [This] will be an advantage for television viewers, as it will make it possible to include jump and spectators in the same picture sequence.113

Thus the live spectator becomes part of the performance of the athlete; a background for the performance to the benefit of the television perception of the event. This reveals the scenographic intentions in the event which appear to be put at the service of conveying a positive image of Norway, leaving aside defining, yet less appealing components of the country’s contemporary national image. Moreover, design compromises for the sake of appearance were made in accordance with the exigencies of the international, delocalised audience; “the eye of the world”.114

The potential for an interpretation of the international values of ecology was not exploited during or after the Games in 1994 – but replaced by the banality of an affiliation to Nature which could only be legitimised by historical precedent. In Norway, creative inquiry into a balance between local and global ideas about architecture had been conducted since the 1950s, and was continued by the Olympic architects. Norberg-Schulz’ affiliation to Modernism that calls for a revaluation of the country’s traditions115 was at odds with the quest for an identity which eludes traditional models. This tradition presupposes not the rejection of imported ideas, but their critical interpretation and assimilation.

Instead, what was attempted was the recycling of tradition, which was viewed as environmentally neutral. In other words, material necessity was replaced to ensure conservation of the quality of environmental factors over time, as in Brundtland’s definition of sustainable development. But is this not a limited scope? In a context heavily marked by debates around clean energy sources enabled by advancements in technology, isn’t thinking about past models of construction and inhabitation nostalgic and naïve?

Yet when it came to tradition, what was of interest was the national component, not that of minimal environmental impact. Sustainability was invented as a national brand. And, it seems, it was implemented through the organisers’ claim to self-sufficiency. The strong advocacy through architecture for self-sufficiency and sustainable development, dubiously implemented through a romanticized, idealised reclaimed tradition, stood in strong contradiction to the international politics of the Norwegian state.

The idea of a national sustainability brand was inherent in the belief that Norwegian architectural culture should be perceived as the most prominent, representative
promoter of the ecologically responsible relationship between inhabitants and environment. Norwegian architectural identity was portrayed in the Design Handbook as innovative and barrier-breaking, underscoring the tone of superiority within the event:

To survive in a harsh climate and improve their living conditions, Norwegians have always had to innovate and take chances. By utilising the best features of Norwegian life, it will be possible to achieve the design objectives without exceeding the financial limits and deadlines that have been set for the planning and staging of the Games.\textsuperscript{116}

As could be noted in Blaga’s space matrix theory, all traditional cultures establish a necessary and unique connection with the environment they occupy. The identification of such symbiotic relationships with potential solutions to contemporary ecological problems is far-fetched. What was a unique approach to land and the environment in Olympic terms amounted to, at best, only a questionable improvement with respect to previous Games. This vision of sustainable development can therefore not be considered an original, over-arching solution to the urgent ecological problems highlighted by the UN and the architectural counter-culture in the decades preceding the Brundtland Report and Agenda 21.

The technological argument was not enough to temper and compensate for the revivalist tendencies of the architecture of the 1994 Games. Incorporation of the latest technology into the design and construction of the venues, as well as use of the latter to achieve a more efficient energetic exchange between their interior and the exterior, was a feeble substitute for the much-needed updating of Norwegian regional architecture.

What fuels the argument of this thesis was the flagrant omission at the Games to any reference of Norway’s leading position in the natural resource exploitation and distribution industries, as well as in arms manufacturing. The international reach of these defining national features stood wholly in tension with the romanticized, land-bound rhetoric. Given this, the question of revivalism and Norberg-Schulz’ interpretation of the Norwegian landscape as built form is really only marginal. The chronological argument re-enforces the flagrancy of the omission. Norberg-Schulz wrote such words in 1996, at the peak of Norwegian exploitation of fossil fuel resources. However, neither Norberg-Schulz nor Fehn seem to have played any active role surrounding the 1994 Olympics. If this was indeed the case, it would be interesting to understand the reasons behind their absence.\textsuperscript{117}
Notes

1 An observation needs to be made on what is the natural. Solomon Marcus discusses the natural by setting a critical distance from an excessive phenomenological reading. He places the relationship between notions of culture, artificial and natural within the origins of the word nature. According to him, “the exact meaning of the attribute ‘natural’ (after the latin naturalis) is indicated by the association with natus (born). It is then natural that which is born, as opposed to that what is acquired, that which appears or develops after birth, as a result of the interaction with the environment”. In addition, Marcus argues that “by learning how to work the land, men switched to what was emphatically called the action of conquering nature. Culture became the antonymic term for nature. The Nature accessible to men seemed to offer infinite sources”. In other words, Marcus identifies the relevance of technological progress which enabled man to establish his dominance over nature (Popa, S. 2017. Artificial, Natural, Culture. In 21st Century, vol. 1-6). Seen from this angle, the relationship between man and Nature becomes one of exclusion instead of inclusion. Technological progress sets man outside nature, instead of keeping him within it. This leads to a hypothesis that architecture forms an integrated part of two distinct categories: the practice of architecture belongs to the human, as it is designed by humans, and architecture is part of the environment, as it is stable and becomes part of it once built.


3 Ibid.


5 Ibid.

6 According to Klausen, this was formulated by Norwegian author Axel Sandemose. He argued that the Jante Law is an important expectation of members of local Scandinavian communities.


9 Ibid.

10 Ibid.


13 Ibid.

14 Ibid.


22 By Alexander Tzonis, Liane Lefaivre and Kenneth Frampton, among others.


24 Ibid., pp. 228-237

25 Ibid., pp. 228-237, 228

26 Ibid.
This topic will be expanded upon in the next section.


Mainly in the Design Handbook.


According to Norberg-Schulz.

In the introduction to the book on Sverre Fehn, Norberg-Schulz comments that the architect studied drawing from figures during his entire career. He further argues that symptomatic of Fehn’s design method were the many sketches he produced: Popa, SC. (2015) Clues of Self-sufficiency, Unpublished MA thesis, Architectural Association School of Architecture, London, 47.


In “Scales of Belonging: Notes on Sustainability and Geographical Citizenship”, the author elaborates on the subject of the origins of the term self-sufficiency within the Norwegian culture, dwelling on the parallel between drama and architecture proposed by Norberg-Schulz.


idea is exemplified by Christian Norberg-Schulz in his description of the log construction system through the cave of wood in Kultan: "In the loft at Kultan in Amotsdal (c.1790), builder Jarand Ronjom employed timbers laid horizontally to create a secure ‘cave of wood’, while he united the timber ends to form a springy, rising curve. The result is a building that both rests and ascends, thus embodying the Norwegian relation of earth and sky. Here, forms speak the language of land." (Norberg-Schulz, C. (1996) Nightlands: Nordic Building, London: MIT Press, 36)


72 The third most important and well-known venue is the Ice-hockey rink constructed in the village of Gjøvik. Here, the design decision strikes as the building is carved into the rock of a mountain. This venue does not constitute the object of this study because of its more limited projection as an icon of the event.

73 The aim was to avoid designing a “boring potato” in the words of Niels Torp. (Niels Torp from Niels Torp+ in interview with the author, 17 June 2015.)

74 Niels Torp from Niels Torp+ in interview with the author, 17 June 2015.

75 Ibid.


79 Ibid.


81 This platform was used also for the opening and closing ceremonies of the Olympic event.


83 Ibid.


88 Ibid., 54


90 Niels Torp acknowledges that the beams were left exposed in order to create a warm mood in an environment marked by the cold appearance of the ice rink.

91 It must be noted that the ski jump does not exclusively reference traditional elements. It also refers back to other inspirational sources. First, the access volume is anchored to the ground in all its surface projecting an image of solidity recalling the rock bed on which the ski jump is built. The volume might be interpreted as a gateway between the ground and the sky, that what lies beneath and that what is above, recalling the utterance “Mellom jord og himmel” (Between earth and sky). Second, the waiting room for the athletes, with its semi-circular bow-window may be formally associated with the Dammann Villa by Arne Korsmo. Similar simple volumes open up and frame specific views of the surrounding landscape.

92 The moulds that were used to give shape to the concrete contained negative horizontal and oblique imprints (Popa, S. C. (2015) Clues of Self-sufficiency, unpublished MA thesis, Architectural Association School of London, 95).

93 Tom Wike from ØKAW in interview with the author, 17 June 2015.


96 Ibid.


98 A highly relevant example of this constructive thought is the project commissioned to Tom Wike to set an exposition of violins. In the words of the architect, the design of the support of the violins identifies and uses the strongest point from the body of the violin, namely the point of contact with the neck of the user, as a point of balance of an otherwise very fragile support. The minimum
amount of resources was used in this case with the maximum effect of elegance and balance (The show was a selection of “Guarneri” del Gesù instruments, as part of the Ole Bull 200th anniversary celebrations in 2010 during the Bergen International festival); Popa, S. C. (2015) Clues of Self-sufficiency, unpublished MA thesis, Architectural Association School of London, 122.

汤姆·威克在《OKAW》的论文中与作者交谈时，2015年6月17日。汤姆·威克认为，组织者试图影响跳台滑雪时使用木头的选择，使用木材在《设计手册》中被推荐。


波帕，S. C. （2015）《自给自足的提示》，未发表的MA论文，伦敦建筑协会学校，82。

波帕，S. C. （2015）《自给自足的提示》，未发表的MA论文，伦敦建筑协会学校，82。

“若要提到《设计手册》推荐在各场馆之间分散的建议。”

As per correspondence between the author and Ole Gaudernack, curator at the National Museum in Oslo. E-mail from 16 June 2015.

“这从自然的米斯纳河的路径出发，形成了一条不间断的纽带，连接了城镇和山丘到北面，方向是Balberg。”


It has been intensively used ever since, hosting opening and closing ceremonies of the 1994 Paralympics, the 1999 IIHF World Championship as well as the 2010 European Women’s Handball Championship. A local ice hockey club uses the arena sporadically.


Conclusions
The Failure of the Ecological Project?
Asked whether environmentalism has failed, David Suzuki, scientist, environmentalist and broadcaster, argues that the numerous projects with negative effect for the environment which he helped put an end to around the world have subsequently made their way back onto the political agenda. He adds that as long as we do not “change the way we see our relationship with nature”, ecologists are condemned to have the results of their work contested and shattered under intense profit-seeking global interests.¹ In response, his pessimistic observation was criticised by Graeme Wynn, President of the American Society for Environmental History, who posited that since environmentalism is an ongoing project, stating its failure at one point or another is irrelevant.²

Stemming from these two distinct positions, optimism and hope regarding environmental activism on the one hand, and on the other pessimism highlighting the fragility of positive results in the long run, what follows is a proposal for six utterances which may represent advice for the next generation of architects. These slogans contextualise the findings of the present research within broader, ongoing environmental and ecological debates.

“You Have to Change Your Ways”,³ Again! (Or Sustainable Development Is Not the Solution to the Environmental Crisis!)

It has been argued in this thesis that the Winter Olympic Games organised in Norway for the first time since the discovery of petroleum in the North Sea, were used to convey an image of environmental awareness and affiliation to sustainable development. This is the result of fictional and overly positivistic readings of the array of ecological problems affecting the entire planet. It has also been argued that a partial version of history was narrated in Lillehammer to cover up an inconvenient double standard: while being perceived as an international leader in environmental awareness, the Norwegian government is also one of the most important agents in the fossil fuel international market. Lillehammer seems to have projected the troubling message that despite large amounts of fossil fuel burned out into the atmosphere, one could still speak about pristine environments as well as the ecological awareness of large corporations translated into responsible action.

Hence, the civilising mechanism of the Olympic Games – the generalisation of local principles of conviviality with the environment via the media coverage characteristic of such mega-events – was made instrumental to Norway’s economic interests. This was achieved by the institutionalisation of traditional affiliation to Nature which, as has been shown, was transformed into a national sustainability brand, termed sustainable development. The imposition of environmental awareness was an attempt to claim a tradition of life with respect of the environment and subordinate its values to the market economy.

However, the Lillehammer 1994 WOG may also be considered the attempt of the Norwegian government to translate powerful rhetoric around sustainable development into action. Criticism of its inability to materialize the Brundtland Report by Timberlake described in Part 2 may have triggered the convincing speech of the Norwegian Prime Minister, delivered to the IOC in 1988 in Seoul. This remains mere supposition; there is no evidence that this was definitively the case. The research has failed to locate a transcription of the speech; but has conveyed a picture of its consequences.

The efforts to turn the promises of the Report into an international event showcasing sustainable development are considered by this thesis to have been unsuccessful. Instead, the opportunity was taken to consolidate Norway’s position in the international fossil fuel
trade. The commercial function of the event was not overtly discussed, because of its obvious contradictions to the environmental agenda. The most troubling finding of all is that environmental awareness diverged attention from the powerful accumulative practice of fossil fuel extraction and commerce.

The failure of the Norwegian government to fulfil the promises of the Brundtland Report in its actions after 1994 has been revealed as well. Strong environmentalist rhetoric has continued alongside fierce international advocacy for natural resource exploitation and consumption. After 1994, a painful split between fulfilment of the potential of renewable energies on the one hand, and failure to curb the consequences of environmental degradation through fossil fuel burning on the other, developed. Surprisingly, in Lillehammer, no alternatives were offered to fossil fuels. Investment in renewable energy sources and infrastructure are, according to Røstvik, almost non-existent in Norway; and have been replaced by monumental, unsuccessful attempts to capture CO2 from the atmosphere.4 The government’s reticence to develop renewable energy programmes may jeopardise the country’s chances of remaining a leader in the global energy sector at the same time substantially contributing to the acceleration of the pace of global warming.

In addition, by not alluding to any experiments of material sustainability of the preceding decades, the organisers and architects omitted one essential aspect which would have made a difference compared with previous editions. Experiments with solar and wind power; innovative material such as sulphur to solve the housing crisis; and the message of publications, articles and essays produced in the 1960s, 1970s and 1980s were not upgraded to the status of design principles at Lillehammer. The legacy of the 1994 Games lacks critical assessment of these issues. This thesis aimed to supply an imperfect substitute for this critical gap.

Reflecting on the event, the President of the LOOC argues that Norwegians were lucky that the sun shone for its entire duration. This reveals once more the limited view that the sun is a resource for entertainment and experiential quality of the environment, rather than a viable alternative source of energy.5 No reference to the potential of the area to capture solar power and transform it into usable energy was made at the Games – rather undermining the privileged position Lillehammer occupies in studies of environmental issues and Olympic Games.

A distinction has also been made between two categories of sustainable development. The Norwegian model stands for the aestheticisation of the human-Nature relationship without even questioning the causes of the ecological crisis. However, this aesthetic model is not replicable to other geographical contexts, leading to the conclusion that Lillehammer 1994 did not represent the environmental values which historians and critics seem to cherish the event for. On the other hand, sustainable development can be seen as a functional-technological question. Unfortunately, the isolated regional effects of this attempt were not continued in the Olympic tradition, nor adopted at larger territorial levels.

Some may argue that environmental awareness, not sustainable development, defined the ambitions in Lillehammer. This thesis holds that environmental awareness and conservation should be an integral part of the values promoted through sustainable development. If the UN used the Olympic Movement to project its global rhetoric, a very interesting research topic would be derived from the radical change within the organisation in respect to the ecological crisis. In the 1960s, 1970s and 1980s, architects had been encouraged to experiment with renewable energies and innovative reusable or
reused materials, while in the late 1980s, the Brundtland Report dismissed all of their findings; and provided a brand new, positivistic and market-oriented interpretation of the ecological crisis.

The thesis also concludes that the positivistic interpretation of the notion of sustainable development, which manifested itself in the Brundtland Report, advocates for growth and capital accumulation. Its materialisation within Olympic mega-events which are transient consumption episodes and monopolize large amounts of resources to be deployed in territories for short periods of time deepens the concerns. The immense environmental challenges these events raise are disregarded and only superficially treated. Encouragement of growth, as has been revealed, is incompatible with environmental sustainability. Thus documents such as the Brundtland Report and Agenda 21 are idealised aspirations at best; calculated construction and exploitation of the collective environmental imagination at worst.

The most striking divergence identified as to why Lillehammer 1994 should be cautiously handled as a case study of environmental awareness within the tradition of Olympic Games, resides in the similarities between the idealism embedded in the Olympic Movement and the notion of sustainable development marketed in the Brundtland Report. Both positivistic visions provided an alternative to negative perceptions of the ecological crisis over the decades beforehand. Moreover, most editions after Lillehammer failed to live up to the tendencies vocalised yet not fully enacted in 1994; and became dominated by quest for economic profit, and branding practices by the IOC.

A change in mentality seems to be required. Media and education are the channels through which awareness of these issues can access global consciousness. Here lies the great potential of transnational agencies such as the IOC. Educating future generations on environmental awareness may generate increased interest in environmental conservation, thereby enabling the transition through education from anthropocentric to eco-centric views. As Wynn argues,

there is a shift in consciousness that sees humans not as dominant beings, but as insignificant in the larger system, and . . . if we make that shift then we would be more attentive to our surroundings.6

This transition is urgent as with every successive generation, less memory about first Nature remains. This threat to the efficiency of environmental politics is termed by Boyd as “incremental amnesia: each generation loses more memory of how the natural world used to be”.7 He implies a distinction between primitive and second Nature. The latter is inherited from past generations; the former is an imaginary, historic archaeological construct. From here, the complex task of assessing the damage to future generations, and the present generation’s contribution to the deterioration of environmental conditions necessary for human inhabitation on Earth, emerges.

Finally, Suzuki advocates the importance of children in tackling environmental issues, not as much in the hope that they will become better stewards of the environment, but because adults are more likely to amend their lifestyles if the safety and health of their children is at stake.

When people have gone through university, they get a job, they buy a house, they get married, they have kids – and when environmentalists come knocking to say, "You have to change your ways", they get angry because they have invested a lot of time and effort to get to where they are. So my foundation has been focusing more on children. Not because
we can wait until they replace us – we do not have the time – but because they are one
vulnerable spot for adults. If you love your children, then you have got no choice.8

Could the depiction of the mascots in Lillehammer 1994 as children be interpreted as the
manifestation of such awareness? Indeed, the question of the mascots may allow for the
reading of the importance of the next generations to encounter solutions to the
environmental crisis, or of that regarding the incentive to action of the present generation
in order to conserve the present environmental conditions. However, as so often in the
evend, evidence of such a reasoning behind the actions of the organisers is missing leaving
no other option but their dismissal.

Sustainable development, the seed of which was planted in the fecund ground of
Norwegian national affirmation, supplied mixed fruit. The ambiguity of the concept
betrays its noble aspirations. The term can stand both for environmental protection and
its opposite. The accent on growth sets it far apart from its apparent ecological
motivations, resulting in a concept void of any meaning and a contradiction in terms.
Sadly, Lillehammer become one more channel to promote environmental rhetoric by way
of concealing a hidden agenda of natural resource exploitation, silencing criticism against
it.

**Olympic Games Are Not Earth Games!**

In any case, Olympic Games are far from the ideal device to promote ideas as
environmental awareness and sustainable development. Olympic Games presuppose a
large impact on pristine environments making the choice to promote environmental
awareness by the Norwegian government and the IOC through an Olympic event
debatable. The IOC is invariably slow to react; while the Games themselves have only a
limited influence in time and space. The large audiences reached customarily by the
Olympic Movement cannot justify the function of such events as mediums for
transmission of any message, especially one affiliated with visions of environmentalism.
The attempt to suppress ecological fears through the portrayal of environmental action
within mass events contradicts the message of environmental awareness conveyed in
1994 altogether. Other mass media devices may prove more effective and less costly in
this sense.

It could be argued that the reduction in size of such global sports manifestations,
encouraging degrowth and ethical resource manipulation, would indeed convey an
environmental message. However, as was shown, Olympic Games follow the opposite
trend, that of growth, under the protection of safety terminology such as sustainable
development. As things stand, Olympic events cannot be considered a ground for
experimentation with ecological issues. Arguing the contrary seems either naïve or
deceptive: precious time is wasted. Costs are high; long-term results are either non-
existent or very difficult to quantify.

Yet, it could be argued, Winter Olympic Games do provide the setting for a necessary
debate around issues of environmental awareness and sustainable development. The
critique enabled by the repeated failure to materialize environmental aspirations into
policy and globally relevant material action derives its consistency from opposing an
internationally recognised global movement such as the Olympic one. Its troubled
interaction with environmental aspirations may be interpreted as a necessary trigger for
a fruitful, relevant critique of environmental issues to bloom.
However, the question why the IOC appeared to respond to environmental issues already raised three decades beforehand casts a long shadow of doubt over the constructive potential of the Olympic Movement to address the ecological crisis. In the late 1980s, it became necessary to appear to be acting amid environmental awareness because of two reasons: first, Albertville was considered an environmental disaster. Allusion to environmental awareness was proven not to provide a defence against the adoption of environmental principles by the Games as a whole. In any case, environmental principles are often not formulated in a precise way. Second, the fall of the Iron Curtain rendered obsolete the role of the Olympic Movement as promoter of the values of international peace. Environmental awareness was thus introduced to fill in the gap.

Moreover, the relative environmental orientation of the Lillehammer Games owed to micro-management of policies between representatives of a local culture strongly affiliated to environmental awareness, and the organisers of the event. This is a well-established trend in the Olympic Movement and not unique to Lillehammer. Yet this micro-management would not have been necessary had a clear commitment to solving problems associated with the environmental crisis and sustainable development been visible from the start of the Olympic organisation process. The IOC appears to be a passive agency, capitalising repeatedly on small-scale, localised positive results.

Pending more in-depth study, Turin 2006 appears to have represented a more successful attempt to link local initiatives regarding environmental awareness and protection with international and transnational agencies in order to ensure a durable legacy in tune with aspirations of environmental protection. This evaluation invalidates the high praise given to the Norwegian edition. Moreover, as was highlighted in Turin, infrastructural investment shifted from transportation to management of resources and their supply. Turin revealed that architecture only acquired representative and symbolic values which are, despite their necessity, neither representative nor efficient means to transmit environmental awareness. Their message, as in the case of Lillehammer, is constantly blurred by festive components associated with Olympic events. However, it was argued in this thesis that the success of Turin 2006 was an exception, as Sydney 2000, only 6 years after Lillehammer, was referred to as a greenwash; while London 2012 failed to attain the expected standards of environmental awareness and sustainable development. In an attempt to downplay these repeated failures, the IOC tries to separate itself from environmental mishaps and enhance symbolic and aesthetic functions to create a morally superior image of the Olympic Movement, enabling it to invoke higher moral powers which locate it at the centre of contemporary social concerns, thus justifying its role in the world.

Yet while Lillehammer did reconstruct the environmental image of the IOC, this thesis argues that this was far more based on style than anything resembling substance. The 1994 Games reinstated the supremacy of the Olympic Movement as a condenser of global and social fears of destruction: in this case, environmental collapse. Agenda 21 for sport and the environment was an unconditional adaptation of the political document foregrounded in Rio de Janeiro in 1992; and embodies the IOC’s successful attempt to claim a leading role in contemporary social structures. Nevertheless, the document is accepted by every Olympic host but is not translated into action, either because there are multiple ways to evade its moral authority, or because it is not followed up and given priority above profit, branding and PPP considerations.
Moreover, at Lillehammer 1994, the IOC over-simplified global understandings of the environment. This can cause problematic, dangerous interpretations of the ecological crisis by downplaying the extent of the risk and environmental damage which these events can cause. Further, by foregrounding the example of an environmentally aware culture, the IOC ignored and misused the opportunity for a relevant global environmental critique. An important conclusion points towards the unexploited potential of the Olympic Movement’s media machinery to disseminate environmental conservation instead of corporate environmentalism. Albertville, the worst example, and Lillehammer, the most appreciated one, did not differ fundamentally at close analysis. The environment was altered in both cases. They did not differ in size and distribution either. But while Lillehammer channelled a national sustainability brand, Albertville did not. In Lillehammer, emphasis was placed on the construction of a common imaginary of environmental awareness.

It is maintained in this research that Lillehammer did not illustrate the most accurate depiction of environmental protection. The same destructive environmental practices as those in Albertville can be identified. The ski jump may seem integrated into the landscape, but harm to the environmental balance was committed prior to the event. Dynamite was not used, but land was displaced to enable the events to be held according to international sports standards, transforming the environment at any cost, in areas which were protected or customarily subject to low impact from human activity. The virtues associated with the notion of **closeness to Nature** are betrayed by the insertion of large programmes into such environments, reducing the scope of the ecological question to one of minimisation of risk and management of environmental damage.

Moreover, isolated positive cases do not address increasing worries around consumption habits, as consumption is enhanced if the basis of the critique against it is dismantled. Edible plates or repositioning the Hamar Olympic arena to protect a bird sanctuary had the same value as similar gestures so criticised in Albertville. The relative success of Lillehammer owed to careful image management and the rigorous application of a publicly exhibited design agenda. However, this Agenda lacked important components of environmental awareness and sustainable development. Neither did it provide a rigorous appreciation of the consequences of the principles it projected. This leads to the gravity of the problem being complacently downplayed, creating the illusion that humanity is constructively acting to resolve environmental issues. Instead of nursing the natural environment, the valve of guilt is opened, releasing the tension of criticism and creating a pliant population, all to enforce politics that deepen the environmental crisis:

A reflection of the idea that the environment is important is that people think they are being mindful of the environment through things like composting, recycling, bicycling, and so on. And all of these are good things, but they do not address the larger, structural issues.9

A review of the relationship of Winter Olympic events and the Olympic Movement revealed the reliance over recent decades on what could be termed environmental heroism; in other words, coddling public consciousness through symbolic acts. The idea of planting trees deflects attention from ecological problems such as deforestation. In the case of reuse of materials, the importance of the attempts in Nagano and Lillehammer to foreground some environmental awareness is diminished by the benefits being so negligible when compared to the structural problems of the environmental and ecological crisis. As these measures are not part of integrated global policy-making agencies, they remain anonymous and their legacy fades alongside that of the transient Games.
Putting the cases of the Winter Olympics held in 1928 in St. Moritz and 1994 in Lillehammer side by side, reveals the conclusion that if the objective of the IOC is the reaffirmation of its environmental position, St. Moritz serves this much better than Lillehammer. What is troubling is that from 1928 onwards, the organisation continually set itself apart from environmental concerns. Lillehammer was not, as many assume, a return to the aspirations first surfaced in 1928. It has been proposed that the only valid statement of environmental awareness within the Olympic Movement would involve a revival of the ephemerality of St. Moritz. However, this is hardly a plausible scenario in the context of the increasingly mercantile aspirations of Olympic Games, not to mention the escalation of environmental difficulties caused by the increase in size of the event. The only aim of environmental aspirations seems to be the construction of a legacy which leads to regional development and growth.

On the contrary, WOG progressively shifted from mountainous environments to urban locations. In this process, winter sports escaped their climatic and geographical constraints and can now be held in sub-tropical climates at large cost: artificially creating the environment for their enactment. The environmental attempt at Lillehammer and its reinstatement in Turin seem long forgotten. In this sense, Lillehammer does indeed represent the apotheosis of environmental concerns at Olympic Games. The story since has been one of increasing distance between the spectators, the athletes and natural environments.

At recent Winter Olympics, such as Sochi 2014, the tendency has been to ignore climatic constraints altogether, and enforce bids to host the Games in unsuitable climates. This is alarming since such deviations from the third pillar of Olympism are justified by top officials with memorable sentences such as “Olympics must go for green as well as gold”. This constitutes evidence of misuse of resources to oppose environmental awareness, not enforce it. Hosting Olympic Games where snow is scarce requires the deployment of technologies that inflict transformations, often with negative consequences on the environment.

The rejection of the local inhabitants towards the Olympics and the IOC as an institution remains perhaps the most significant environmental feature of 1994. That Norwegians displayed opposition towards the Games reiterates the theme highlighted earlier: the singular environmental feature of Olympic Games is resistance to it. This thesis’ purpose, however, is not to highlight the contemporary uselessness of the IOC and the Olympic Movement when it comes to environmental questions. On the contrary, the title of this thesis, “Earth Games”, reflects the hope that with an informed audience, the IOC may become an emancipatory device as far as environmental awareness is concerned, scrapping corporate environmentalism from its agenda and becoming a relevant actor in the promotion of environmental awareness.

Please Mind the Gap Between Planning and the Environment!

As is customary at Olympic Games, after securing the opportunity to host the event following a selective, often non-democratic bidding process, the winner deploys a state-controlled image-making apparatus that serves the interests of a reduced section of the population. LWOG can be considered as an attempt to universalize the Norwegian architectural tradition’s very specific relationship to the environment, feeding it into claims of environmental supremacy.
To this purpose, the Design Handbook represented an idealised, imperfect interpretation of atemporal values, extracted from the relationship with the environment established in the distant past. The relative success of Lillehammer was possible due to the international projection of Norwegian national identity, accommodating elements of environmental awareness. As argued, Olympic Games tend to take control over local and global institutional resources as well as international spectator interest to produce or reinforce state and institutional imagery, by engendering visions of national identity and the promise of international recognition.

The Handbook represented an attempt to reframe historical evidence to highlight a discrete, mutually beneficial relationship between Norway's inhabitants and the environment, and imply that this had remained unchanged throughout the centuries. In this way, Moshus and his team managed to claim a leading role for Norway in dealing with issues of environmental awareness. It was argued that this was only possible by channelling aesthetic powers associated with design and architecture towards creating an image of national environmental sustainability.

However, it became evident that international affirmation of local values is problematic at Olympic Games, because they are understood in competition to those of other nations, resulting, as Roche argues, in competitive forms of nationalism. In this sense, the local features of the 1994 Olympic event are not necessarily applicable at global level. Moreover, the distinction emphasised in these events between competing nations inspires competition and growth instead of ethics.

In Lillehammer, oversimplified national history was utilised for the construction of an edited environmental image. Despite the incontestable architectural value of the venues designed and constructed, they amount to an environmental theme park, where the visitor is transported into an idealised world of apparent environmental awareness rooted in national heritage, disconnected from the urgent problems of the ecological crisis. Unfortunately, the event was designed to represent, not discuss themes of environmental awareness and sustainable development. The Design Handbook avoided more profound historical, social and cultural national values; and provided a simplified message that could be transmitted over the limited amount of time allocated for the event.

The potential for an interpretation of international values of ecology was marginalised during and after the Games. Its replacement with trivial historic, cultural and environmental mimicry must be rejected; it contained fundamental inaccuracies, with historic evidence simplified to fit the message frame of a short-lived, profit-oriented mega-event. The concept of the Hamar Olympic arena – a Viking ship turned upside-down – acquired traction with the Olympic audience and was acclaimed. Yet this was another aspect of a theme park, with very little relevance to conserving the environment and amounting to a parody of historical fact.

Moreover, the distinction between the architecture produced for the survival of pre-modern man in Norwegian territory and that of the Olympics, designed for entertainment and sport, has been proposed. What resulted was the conclusion regarding a false projection of tradition coupled with an artificial use of archaic values no longer of functional reality. It has been asked throughout if drawing back on the past to approach contemporary issues of sustainable development was simply a nostalgic attempt to revive an outdated version of national identity. The question still stands – but the absence of any interrogation of alternative energy sources in Lillehammer points towards the reproduction of a national trend, rather than an attempt to solve the environmental crisis.
In other words, the romanticized, unrealistic interpretation of formal expressions of outdated modes of habitation, and use of locally sourced materials justified by the idea of belonging to a self-sufficient tradition, was foregrounded to the detriment of a critical interpretation of contemporary Norwegian economic, social and cultural features. It appears that the relative success of the Games was the result of managerial control over an environmentally aware image, channelled through a publicly exhibited design agenda.

Furthermore, the illustration of Norwegian self-sufficiency through the architecture of the Olympics diverged from broader environmental and sustainability concerns. The physical integration of large programmes below ground was, at best, only a symbolic statement advocating for less environmental intrusion. Indeed, that the buildings hosting these programmes were themselves built specifically to host them highlights suspicions of environmental mimicry. The admirable way in which the architectural negotiation of the line of the ground was conducted for projects such as the Hamar Olympic arena and the Lysgårdsbakken ski jump, however, defends the integrity of the architectural intention and turns the issue towards the coordinated Agenda of the Games.

The elegant, volumetric appearance of the Kanthaugen ski jump did not justify the high praise it was given in terms of sustainable development and environmental protection. Rather, it alludes to Norwegian building types which belong to the category of self-sufficiency through aesthetic analogy, not functional identification. Representing Norwegian values aesthetically is not enough to enable classification of the venue as illustrative of sustainable development, not even environmental awareness. The same structure reveals the misuse of the idea of geographical and climatic affiliation in architecture. The invariability of these conditions over the last few centuries does not justify use of the same forms. That the event did not engage with the contemporary role of Norway in the manufacturing and distribution of some of the most sought after commodities, such as arms, ammunition, petroleum and gas, and still referred to the territory as a map of archaic national values, is disappointing.

Architects such as the ØKAW group and Niels Torp appeared to have attempted to revive an incontestable architectural legacy. Its independent reading reveals numerous qualities and a mastery of material use and specific design principles. The association of these principles with sustainable development and limited environmental impact, however, is questionable. As the architects commissioned to design the venues of the Lillehammer Olympics did not develop afterwards the themes they proposed, reveals that environmental awareness was not a distinguishing feature of their work. It was instead imposed by the Design Handbook.

The perception of planning practices as serving political power reduces their capacity to make their response relevant. Environmental responsibility limits itself to isolated actions in the form of idealised projects. This thesis has revealed the uproar of researchers such as Mark Curtis and Harald N. Røstvik, the latter an architect himself, against the passivity and complacency in Norway, which conceives of no other way forward than the continuation of natural resource exploitation, in the hope that more effective technological solutions will ultimately avoid environmental disaster.

It is also important to consider here the reversal of the scope of planning objectives. "No longer something to be conquered, wilderness has become something to be saved". Or, in other words: humanity used to protect itself from Nature, now it needs to protect Nature from itself. Either way, recalling Georgescu-Roegen's eight points agenda, only through
unprejudiced regulation can it be allowed to hope that balance between resource exploitation and environmental conservation can be achieved.

Today, the protection of the environment relies on a paradoxical reversal of planning’s original purpose: always conceived as a way of extending our domain, planning has become the last tool for preserving the world from our presence. Planning professionals no longer need to shape the environment to fit a construction whenever economic logic requires it. Instead, they need to understand the intrinsic values of the landscape and its environment. Climatic, geographical and geological parametres should dictate the way and where they design and build.

The practices of planning, whether urban or architectural, have acquired the agency to influence the shortcomings of human governance of resources and risks, subject to “prejudiced views of the world, entitlement, or acceptable levels of ‘collateral damage’”. Practice-specific techniques of spatial negotiation may deliver the desperately required “consideration for long-term health of the environment” and result in amending the immediate goals of political management. Informed architects and planners can constitute an effective filter to ensure the fulfilment of “claims to scientific or responsible management”, which are too often put in the service of private interests for economic gain, development and growth.

The thesis has thus challenged the myth of Norwegian architectural culture being the highest promoter of environmental awareness, with a monopoly on the ethical relationship between human beings and their environment. Evaluating the ethical stance of Lillehammer 1994 would essentially be nonsensical: it represented an improvement in terms of the environmental awareness of the IOC, but under no circumstances was it any kind of tangible achievement when solutions to the environmental crisis are to be considered. A slight rise in employment after massive governmental investment hardly justifies the material effort this required.

**Challenge Progress!**

This thesis therefore warns against the risks associated with the projection of archaic local values as global environmental solutions. Creating an image of wellbeing through symbolic, inefficient environmental gestures disengages humanity from its fears and enables celebratory and festive moments to disempower local populations and contribute to capital expansion. The case of Lillehammer, it was argued, is symptomatic of a generalised ignorance towards understanding the structural values of tradition, and the proliferation of an idea of progress which no longer encapsulates all cultural aspirations.

According to Mirko Zardini, “we are happy prisoners of our way of life and are not yet able to think of other ideas of progress than those conceived centuries ago and renewed in the postwar years”. The use of the collective we when environmental problems are discussed sums up the apparent impossibility of assigning responsibility for maintaining an unsustainable lifestyle. It also suggests that this is a common project, reaffirmed by all those who do not challenge it. The mirage of progress comes at a very high cost, highlighted by many environmental movements from the 1960s onwards. This losing bet is very well summarised by one of Coupland’s slogans: “Progress is more trouble than it’s worth”. However, Zardini’s view is optimistic to some extent. His words hint at the quest for an alternative conception of progress. Only by subordinating capital gain and progress to environmental ethics will life on earth acquire the acceptable standards of air, water and soil for the future generations to enjoy.

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Zardini adds that the “Western idea of progress was born out of an indissoluble faith in our goodness and our modern capacity to continuously improve our quality of life”. This vision is deaf to the voices of people who inhabited pre-colonised territories, i.e. indigenous populations. An interpretation of how they dealt with problems of survival and incorporated the environment into their way of life needs to be performed not as representation, but in understanding the deeper meaning of their lifestyle; disconnected from ordered logic, fully aware of the rights of Nature.

Boyd, contends that by involving local populations, a protected environment might become a possibility. Doing so, by recognising indigenous populations’ own laws would insert another view into what now is a limited anthropocentric perspective: that of a people whose way of life still depends of the cycles of their environment, the destruction of which would result in irredeemable damage to their way of life. If this lifestyle is recognized, all actions and decisions will be conditioned by the requirement of the law protecting it. By guarding this lifestyle, the environment is also spared. As Boyd further notes, “It is striking that in a country as full of natural wealth as Canada, there is no mention of the environment in the Constitution”. This “terrible oversight” makes its territory a mere object of possession. The “separation between humans and nature, and the treatment of nature as nothing but property is . . . at the heart of environmental law’s failures”.21

Dwelling on this point further, Terri-Lynn Williams-Davidson explains that in the Haida Worldview,

land is not owned and all species are actually considered people that should have the same respect as human beings – greater respect even, because we depend upon them for our existence.22

She adds that “from the Haida perspective, cedar trees are considered sisters”. Here, the folklore stories in which spirits dwell in caves and forests; and mountains are giants, who act and move as humans do, but possess overwhelming destructive powers, come to mind. The ancient collective imaginary produced such personifications not through a sense of brotherhood; but of respect, even fear.

Nature was respected and acknowledged as a potentially destructive, uncontrollable and unpredictable set of forces which could strike with fierce power and irreversible consequences for human populations. The reserved attitude and reverence of ancient people towards the force of Nature, its wonder and splendour was necessary and in contrast to contemporary imagination. Today’s knowledge of the physical conditions of the natural environment engenders the temptation to treat Nature as an equal, even something inferior. Its mastery seems to be a possibility. There is no more mystery. There is no more fear. Is this the right approach?24

The incorporation of Nature’s rights into law is not unprecedented. The cases of Ecuador and New Zealand illustrate ways in which indigenous conceptions of Nature were introduced, under specific national circumstances, into the local legal system. The rights of Pachamama (Mother Nature), were incorporated into the Constitution of Ecuador in 2008. This owed to a fight against the increasing influence of multi-national corporations over the natural resources of the country, materialised by augmented extraction. In addition, the Maori view of the environment was recognised in New Zealand thanks to a planning application regarding a national park. The rights of power of the Crown over that territory were transferred to the land itself through the Tuhoe Claims Settlement Act and Te Urewera Act. In this case, land was defined
as not just the trees and the rocks and the mountains, but also as including a metaphysical 
element – that comes from the Maori view of themselves as not just human but in a 
complex web of relations with the natural world.28

Canadian law exemplifies this idea through the concept of inherent limit, which prevents 
aboriginal control and use of land and its resources beyond a limit which would stop 
subsequent generations from enjoying the same air, earth and water quality.29 This begs 
the question of which methods are employed to measure these conditions, which often 
fluctuate, as well as who is responsible for representing the position of future generations. 
Thus, in June 2016, the Canadian Parliament’s Standing Committee on Environment and 
Sustainable Development proposed the creation of a federal advocate for future 
generations.30 This was no more than a proposal; but the fact that these ideas are being 
considered establishes a precedent which may prove fruitful in the near future.

Ownership over land is associated with various rights – but in the Western conception, 
these rights are limitless.31 Acknowledging and imposing limitations to those rights could 
result in coordinated, international environmental politics. The example, according to 
Williams–Davidson, comes from indigenous peoples.

On the northwest coast of Canada, we have a culture that was traditionally very 
 hierarchical with layers of rights that came with responsibilities. A clan could own certain 
portions of the land, but it was not the kind of ownership we see today in Canadian society, 
it was a responsibility to share that land with other people in the community.32

Community, cooperation, responsibility; all terms that call for a cohesive society not 
based on competitive nationalisms.

As Nicholson suggests, capitalism is the antithesis of the indigenous world view.33 
Speaking about the efforts of activists to counteract the destructive forces which 
capitalism projects into the environment, Bill Darnell, ecologist and co-founder of 
Greenpeace, posits that collaborative action is the only way forward.34 Success is not the 
achievement of the ecological objective itself, but to use discussion around the topic to 
monopolize cultural interest. The creation of a network of people able to promote 
scientifically valid arguments could also lead to alternatives to present destructive 
practices.

The absence of a holistic view35 can have disastrous consequences; as even one positive 
action in one territory may have repercussions for another. Cooperation is the only 
possible way of coordinating global environmentalism. Ecosystems are not fragmented; 
but if there are limits between them, they certainly do not coincide with the political 
territorial distribution between nation states. The contradictions stemming from 
territorial fragmentations into regions, districts, nations or continents embody the 
problems associated with the eco-crisis as they oppose the “complex web of relations with 
the natural world”.36 Unless administrative borders are allowed to be crossed by 
international cooperation on the environment, there is little hope that the efficiency of 
environmental politics can be increased.

“Economic Interests Should Not Weigh Foremost”37

Within a critique of the Brundtland Report, the role of the economy in the context of 
ecology and environmental conservation was discussed. Georgescu-Roegen announced 
the findings of the Brundtland Commission; but unlike the Report, highlighted the poor 
prospects of an economic paradigm centred on growth and development offering 
solutions to the environmental crisis.
Asked by Wynn about how the reversal of “public attitudes when powerful people have drunk from the well of Friedrich Hayek and Milton Friedman” might be instantiated, Suzuki agrees that this is the “ultimate challenge”. However, he adds that “economics and ecology are companion disciplines”. Indeed, Oikos stands at the root of both words. As Suzuki notes, “Oikos is the Greek word for household, and ecology is the study of the household, and economics is its management”. Following his reasoning, Suzuki recognizes the limits of the biosphere; the rules of which are revealed by ecologists. Echoing Georgescu-Roegen, Suzuki argues that the role of economy should be appropriated by economists as the regulatory principles of their activity. Building further on the argument, Wynn emphasizes that the paradigm shift preached by environmentalists worldwide is difficult to assimilate within corporate culture. Executives are reluctant to listen to this message because of the corporate structures that they work within; they have legally determined responsibility to generate profits for their shareholders, and so taking steps that potentially reduce profit would make them culpable of failing to serve the fiduciary interest of the companies. Those things can be changed.

Wynn considers that the problem with environmental awareness is its opposition to profit oriented structures. He argues that the absence of legally binding documents for all spectrums of political and financial structures will result in constant questioning of the ecological crisis. Using a conciliatory tone, he defends the CEO who is conditioned professionally by his shareholders, rather than the environmental realities on the field. Therefore, legal impositions are the only way in which the constraining role of environmental protection can be enacted. Political will is linked to this quandary because the “problem is that as a politician, economics still trumps everything else”. If Wynn argues that stating the failure of environmentalism “gives carte blanche to people to wash their hands of any future concern”, it could be countered that the same evasion of environmental responsibility can be invoked amid the friction between corporate behaviour and environmental activism. The urgency of the environmental crisis seems to take only a marginal role in his comments. He speaks as if there is time for what he later calls a “transitional period”. This seems a reasonable statement from a political perspective; but given the contemporary political context and the immediacy of global warming highlighted in Part 2 of this thesis, the argument does not stand. However, Wynn admits that “capitalism and a healthy ecology cannot coexist”. This is the reason why the repeated message of activists demanding the immediate termination of environmentally damaging projects falls on deaf ears and causes an overwhelming reaction from the opposition.

It seems that not optimism and the desire to live better drives the environmental debates – but fear of the alternative, which is destruction. Maybe this is why environmentalism has failed. After all, as David Coupland argues, fear was an important element of the Cold War’s “emotional texture”. The backdrop of nuclear fear led to the approval of “massive defence budgets” without debate. It could therefore be assumed that the progress made under Maurice Strong and other politicians, architects and scientists prior to the Brundtland Report was facilitated by a complete submersion in fear. After the fall of the Berlin Wall two years after the Brundtland Report, this was replaced by trust; specifically, trust in consumption. This erased concerns for the environment, deepening the ecological crisis. Further reflection on how global warming has failed to replace the nuclear threat in the cultural landscape of the twenty-first century, so far proving an inefficient trigger of ecological awareness, could be pursued.
In line with Georgescu-Roegen’s ideas, consumption is still the cause of the ecological crisis. In the words of Suzuki, consumption is about creating want, it is not about necessities, and I think that is what... got us into this dilemma. We think that progress and being happy are being able to buy stuff. In the past forty years the average size of a Canadian house has doubled. Why? We have fewer people living in there, but we have more stuff to keep. I think it is a recent phenomenon – we have bought into this idea that the economy delivers our happiness.48

Modesty, compassion, living within one’s means and responsible spending were values which characterised past generations but have been lost in present times.

The side-effects of this culture of consumption aimed at attaining happiness are often concealed in remote locations. The consequences of progress – "material occupation [that] traverses and transforms vast territories [which] exist outside of public consciousness and far away from urban centers"49 – are unknown and inaccessible to the wider public. These grand infrastructure projects that extract and distribute the resources we feverishly consume [illustrate] a remarkable contrast between the idealized vision of a pristine natural environment and the reality of a land stripped of all value except an economic one – an exemplary case study in the history of progress.50

They do not make the headlines but produce huge profits for the corporations exploiting them. Seen in this context, the Lillehammer Games become a tool to conceal the threatening consequences of “a continuous flow of slow structural violence”,51 and create a fairy-tale world where environmental awareness is decorative; separate from the oil tankers and oil rigs which colonize ever-increasing areas.

However, more optimistic readings of the crisis still prevail today. Darnell, trusts in morality and cooperation. “We all share a common humanity, and it’s just capitalism that’s keeping us separate, fearful, and isolated. The best thing you can do is find other people and work together”.52 His critique seems to be aimed at the system, not at those acting within it. However, the effectiveness of this argument remains to be established. While Darnell has a strong belief in humanity, other ecologists, such as Georgescu-Roegen, point towards the very nature of humanity as driving destructive environmental trends as has been shown in Part 2.

Moreover, Cayley and Bavington make the case for a young capitalism which only very recently started to acknowledge the constraints of the environment upon its activity. According to them, the environmental crisis is a necessary stage towards better understandings of the implications of generating economic surplus. They seem certain that measures will be taken and policies adopted to protect the existing relationships between the eco-systems. The paucity of time left to resolve all these issues before the irreversible destruction of the conditions allowing human habitation may constitute a sharp response to such confidence. Portraying the ecological crisis in an idealistic manner, as in 1994 in Lillehammer, suppresses fear and increases trust, and results in lack of acknowledgement of the urgency of the situation.

“Just Do It!”53

Overall, an exclusively local perspective is dangerous and harmful to the efficiency of a message of environmental awareness. The Norwegian context is the most favourable one for such a discussion given the apparent environmental awareness of its architectural
culture. Moreover, by highlighting the singular example, the problem is diminished and the audience assured that the issues are not pathological and that solutions are already in place. Olympic reviewers and historians uncritically adopt a language affiliated with the illusion of environmental awareness, rather than the problems of the ecological crisis. They praise the addition of the environmental goals to the Lillehammer bid. Leaving aside ethical questions associated with their absence during the initial bid, repeatedly using terminology such as green, environment and Nature without assessing their all-encompassing scope. The notion of sustainable development coined within political circles tops a long list of ambiguities.

The work presented here has drawn on more critical interpretations of Olympic events which do raise questions of morality and ethics in the Olympic Movement’s approach to environmental awareness, notably including Lenskyj’s texts. However, Lillehammer only rarely became the object of their attention. The study has merged Lenskyj’s critical voice with information extracted from less accurate, less critical recollections of Lillehammer 1994; as well as evidence from first hand, on-site observations. It is hoped that a rich field for discussion has thus been opened; with this thesis’ critical interpretation of the event representing a point of inflection in the problematic understanding of solutions to the ecological crisis. The conclusions of this study provide new readings on the event, necessary in the evolution of ecological thought; as well as interpretations of the environmental crisis’ relationship with politics and architecture.

What Lillehammer made plain was that under the hegemony of misunderstood economic processes, politics and ecology are two dissociated, even antagonistic spheres of social debate. The strong political character of the UN’s green agenda dismisses any relevant ecological discussion. The clear separation between the political and ecological views of the same problems – or rather, the lack of attention given by politics to essential aspects of the ecological crisis – is even more striking provided the numerous international platforms put forward by the UN to approach the crisis before 1994.

The 1994 Games, against a background of the divorce between politics and ecology, thus became a stage to enforce a nationalistic agenda. It has been explained that an agenda rooted in geographical and cultural affiliation is not a response to the ecological crisis. This national identity was seized by national and international political actors to legitimize materially unsustainable practices, and accentuate the dominance of the International World Capitalism (as Guattari puts it) over the ecological argument. Contrary to Chappelet’s viewpoint, though, Lillehammer 1994 stood for more than the appropriation of an environmental position by the IOC. It represented the end moment of the ecological project.

The LWOG can be argued to have left behind the most damaging inheritance in terms of perceptions of the environmental crisis by disseminating a positivist, relaxed, non-urgent reading. The positivism associated with the Olympic Movement cannot reflect the tragic nature of the global situation, as the organisers condemn previous more pessimistic readings of it to oblivion. The local architectural tradition captured the attention of the world, but overshadowed global approaches to the crisis of the preceding decades.

This analysis has revealed the uncritical attitude of the architects involved; but by the same token, also highlighted the immense potential of the architectural agency to interfere with processes of capital accumulation, channelling often disastrous environmental situations towards responsible development, while avoiding simplifications which lead to confusion. Unfortunately, the designers of Lillehammer
indulged in an aesthetic interpretation of an idealised, imaginary, irrelevant relationship with the environment, mediated by architecture as a material construct. Yet their effort and experience did at least lay a basis for critique. This analysis of their projects and their conditions provides a solid starting point, defining that which is at stake, as well as the perils of leaning against one or another politically driven, customised package of apparent solutions.

In addition, not only was the event’s supposed progressiveness irrelevant in the context of larger environmental rhetoric. Architectural evidence uncovered what other research on the event missed: the 1994 mega-event fed a summarily interpreted cultural tradition to an unwary audience, using the Games to generate a positivistic sense of environmental consciousness, fuelled by inapplicable singular heroic gestures. The architecture of the event provided the setting for a drama which unfolded under the hungry eyes of an audience too desirous of spectacle to sense the event’s subtleties and complexities.

By focusing on the structural violence embedded within the Lillehammer Games, the duty so well defined by Nietzsche may be too easily forgotten: the task to embrace optimism as the source of correct and pure action. However, if the many downsides of such an important historical event are ignored, the risk of remaining ignorant and fail to learn from past experience emerges:

For the historical audit brings so much to light which is false and absurd, violent and inhuman, that the condition of pious illusion falls to pieces. And a thing can live only through a pious illusion. For man is creative only through love and in the shadow of love’s illusions, only through the unconditional belief in perfection and righteousness. Everything that forces man to be no longer unconditioned in his love cuts at the root of his strength; he must wither and be dishonoured. Art has the opposite effect to history; and only, perhaps, if history suffers transformation into a pure work of art, can it preserve instincts or arouse them. Such history would be quite against the analytical and inartistic tendencies of our time, and even be considered false.54

It is within the hope that the history revealed herein will provide inspiration for both the author and also the occasional reader to pursue further interrogation of the ecological quandary that this thesis was written. It may well be that an idealised Olympic event is precisely what helps construct the "pious illusion" so necessary to man’s creativity and impulse to unconditional love. Interpretations by the unwary audience of the event conceals the accumulative agendas embedded in the 1994 WOG and reveals only that which nourishes the honest hope in mankind’s goodness and, as Darnell puts it, a "common humanity".

What was also revealed is the importance of knowing the entirety of history with all its consequences and implications. For only an intimate acquaintance with history may unmask the betrayal of these illusions and help release the necessary tension to “change the way we see our relationship with nature”.55

After all, as Nietzsche puts it,

the history that merely destroys without any impulse to construct will in the long run make its instruments tired of life; for such men destroy illusions, and “he who destroys illusions in himself and others is punished by the ultimate tyrant, Nature”.56

The advantages of this casual gaze on the world are convincingly laid bare by the philosopher. Cynicism, sarcasm and pessimism were not pursued here as a bitter vendetta against such betrayal of man’s high hopes. Instead, these became tools for a call to
consciousness by which the love for the environment might become motivation and cause in the quest for responsible development. Nietzsche argues that if you thought much of the people, you would have compassion toward them and shrink from offering your historical *aqua fortis* as a refreshing drink. But you really think very little of them, for you daren’t take any reasonable pains for their future; and you act like practical pessimists, men who feel the coming catastrophe and become indifferent and careless of their own and others’ existence. ‘If only the earth lasts for us; and if it does not last, it is no matter’. Thus, they come to live an ironical existence.57

Irony, resignation and cynicism are the great risks of continued negation of the ecological crisis. Instead, they need to be replaced by optimism (not idealism), hope (not fanaticism) and confidence (not blind trust) in the ability to overcome the ecological crisis through a “process of systemic adjustment” fuelled by “self-awareness”,58 as Bateson argued.

This thesis has highlighted how the notion of sustainable development condenses all that which is misconceived around the ecological issues. The Brundtland Report failed because it does not treat the subject of environmental awareness historically. And, through the Report’s stretched conclusions, they fuel an idealism coupled with ignorance about the ecological situation. By seeing very little in the past, they also have a restricted vision of the future, enacting Nietzsche’s thought that life develops best through ignorance of the past.

However, as Georgescu-Roegen revealed, life lived at its fullest is equally damaging to the environment if the tools to enjoy it enable humanity to produce irreversible harm to the environment. According to Georgescu-Roegen, man escaped Nature the moment it acquired exosomatic means to handle and appropriate the environment. However debatable this affirmation is, it is true that a comparison with production and progress is unfruitful, as humanity’s economic process often competes with Nature. However, according to Nietzsche, Nature is the studio of man’s only Master; and historical understanding can help humanity remain within Nature, if and only if, it is not put in the service of further growth and accumulation, but in that of awareness and education. It is proposed that mass ecological education is worth thousands of international political treaties on the subject.

These two apparently antagonistic visions – on the one hand a rejection of history as the only way to attain happiness, on the other a deep knowledge of it in order to prevent environmental degradation – are found compatible in this proposal. Humanity may enjoy mastery of Nature freely and without self-imposed risk only if it is censored by historical awareness of all the moments of interaction between life and Nature. As it is unconceivable to claim ignorance of the past as a justification for false reinventions of the ecological crisis, and as those who do so fall into ridicule, history must be embraced fully as the only means to extend enjoyment of life on Earth. But at all costs, its abuse through wrongful use in national marketing campaigns must be avoided.

The failure of the ecological project must therefore be recognised and dated: 12 February 1994. On this occasion the LWOG enacted the structural, concealed violence of natural resource exploitation that infiltrates ever-increasing territories, ever-shrinking consciousness, unnoticed. The flame turned on by Carson on 27 September 1962 has been turned off and replaced by the neon light of sustainable development branched at the ever-growing network of capital accumulation. No hope of its reignition remains. Only the ashes of her book and the substantial yet insufficient research of those decades remain as a reminder that the ecological project once existed. While acknowledging the grand finale
enacted under the clear, dry sky of the Olympic event’s opening ceremony, we reject nostalgic interpretations of the ecological crisis. We gaze forward with renewed optimism and hope that another ecological project will take the place of the old one. And a next one after this one in a continuous re-enactment of the fate of such endeavours condemned to failure, yet necessary to continue driving the moving vehicle of history safeguarding us from disastrous instances of irremediable harm.
Figure 38: *Sports Footwear Recorded on Snow; Photomontage*
Source: Author’s personal archive
Notes

2 Ibid.
3 Ibid., 180
4 The same rhetoric is enforced, as was shown, within the Olympic Movement, where mega-events favour exploitative practices of accumulation that often diverge from ecological awareness and environmental protection.
9 Ibid., 175
10 The comment belongs to IOC President Jacques Rogge referring to the Sochi Olympic Games 2014; Chappelet, J-L. (2008) Olympic Environmental Concerns as Legacy of the Winter Games, The International Journal of the History of Sport, 25 (14), 1897
12 Ibid., 30
13 Ibid.
14 Ibid.
15 Ibid.
16 Ibid., 10
18 “... today, as we witness an accelerating shift toward polarized wealth and more frequent outbursts from an increasingly unsympathetic environment, we look upon Truman’s prophecies with some uncertainty.” Zardini, M (2016) ‘After the Environment’, in Bratishenko, L., Zardini, M. (eds) It’s All Happening So Fast: A Counter-History of Modern Canadian Environment, Montreal: CCA and Jap Sam Books, 19. References are made in contemporary ecological discourse to the First Nations of Canada as well as to the aboriginal populations in Australia and New Zealand among others, as an example of how to understand the environment as equal, not inferior.
19 If we extrapolate from the argument between Lev Bratishenko, David R. Boyd and G.I. Terri-Lynn Williams-Davidson to a more general statement, we could build a case for the importance of the original inhabitants of a region. For instance, in the case of the First Nations of Canada, the Canadian Government “does not recognize the right to live in a healthy environment, ... unlike the majority of countries in the world” In Canada, “there is no constitutional or national law that recognizes our moral right to live in a healthy environment”. Williams-Davidson, T-L., Boyd, D.R., Bratishenko, L., (2016) ‘From Commodity to Community’, in Bratishenko, L., Zardini, M. (eds) It’s All Happening So Fast: A Counter-History of Modern Canadian Environment, Montreal: CCA and Jap Sam Books, 81.
21 Ibid., 89
22 Ibid.
23 Ibid.
24 The recent unprecedented destructive power of Hurricane Irma in 2017 points towards the contrary.

25 This is the first instance when such a Constitution was conceived, according to David R. Boyd; Williams-Davidson, T-L., Boyd, D.R., Bratishenko, L., (2016) ‘From Commodity to Community’, in Bratishenko, L., Zardini, M. (eds) It’s All Happening So Fast: A Counter-History of Modern Canadian Environment, Montreal: CCA and Jap Sam Books, 89.


27 Ibid.

28 Ibid.

29 Ibid., 90

30 Ibid.

31 Ibid., 99

32 Ibid.


34 “Some people call it the struggle, but I think it’s actually the relationships that are important. You do all this work, you meet people, you have a common ground and you support each other, and you build relationships. And even though you might not stop whatever it was you were trying to stop, you still build a community that’s the foundation for everything after. All the people who worked to ban the bomb for twenty-five years – it still hasn’t happened, and there are still a lot of nuclear weapons out there, but the situation has improved. That was the result of people doing a lot of work so that the struggle became part of the culture. Vancouver had a Walk For Peace, and annual event where at its height there were one hundred thousand people in the streets. And now Vancouver is a nuclear weapons-free zone.” Darnell, B., Birnbaum, E. (2016) ‘Who Builds the House?’, in Bratishenko, L., Zardini, M. (eds) It’s All Happening So Fast: A Counter-History of Modern Canadian Environment, Montreal: CCA and Jap Sam Books, 135.


36 Ibid., 89

37 Ibid., 94

38 Oikos = household (gr); Logos = divine reason implicit in the cosmos, ordering it and giving it form and meaning (gr); Ecology = the divine reason of the household. As can be seen, the definition is beyond economy.


40 Ibid., 170

41 Ibid.

42 Ibid., 172

43 Ibid., 168

44 Ibid., 173

45 Ibid., 184

46 Ibid.


50 Ibid.

51 Ibid., 22


Ibid., 47

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