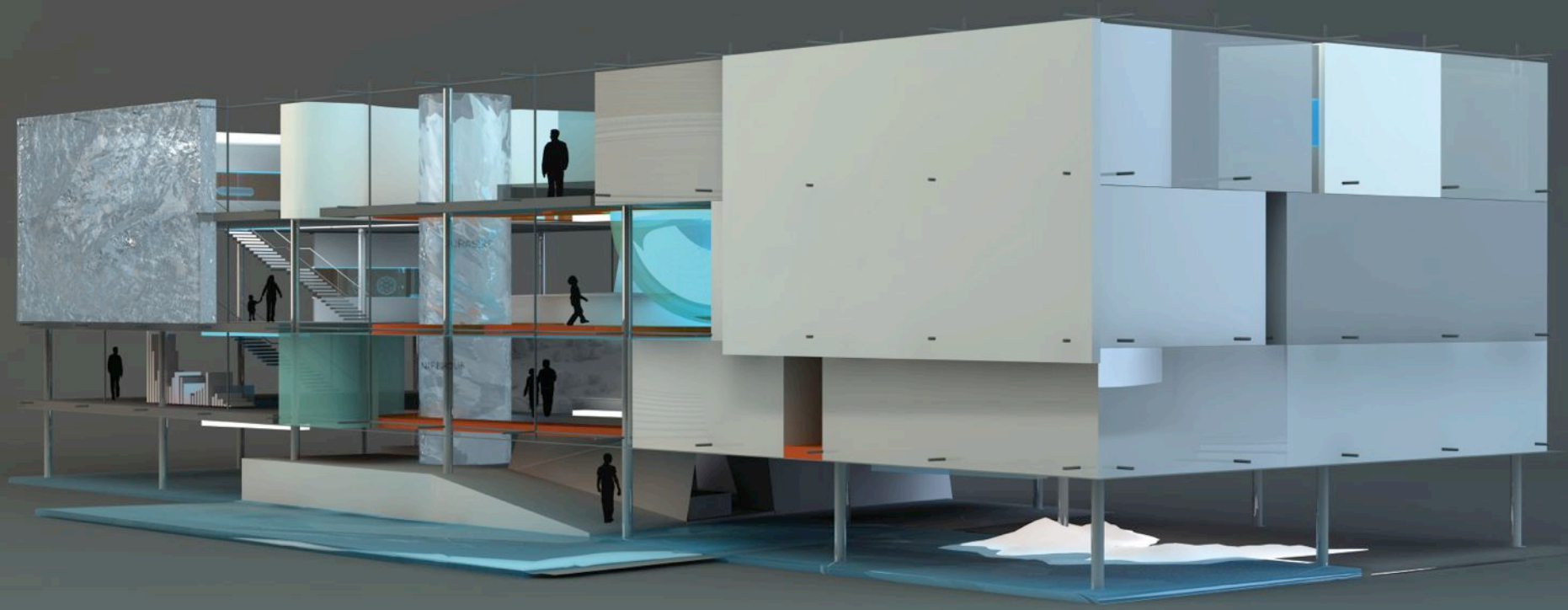
Polaris

CLIMATE CHANGE OBSERVATORY



INTERNATIONAL
POLAR FOUNDATION

PATRONS AND SUPPORT

The Polaris Climate Change Observatory is a project of the International Polar Foundation, with the endorsement of its Honorary President, HRH Prince Philippe of Belgium.
Under the patronage of HSH Prince Albert II of Monaco.

With the support of:

- Prince Albert II of Monaco Foundation
  www.fpa2.mc

- International Council for Science (ICSU)
  www.icsu.org

- World Climate Research Programme (WCRP)
  www.wcrp-climate.org

- World Meteorological Organization (WMO)
  www.wmo.int

PRINCE ALBERT II OF MONACO FOUNDATION

ICSU International Council for Science

WCRP World Climate Research Programme

WMO

INDEX

EDUCATE TO UNDERSTAND, UNDERSTAND TO ACT

THE INTERNATIONAL POLAR FOUNDATION

The International Polar Foundation (IPF) was created with the aim of providing support to the international polar research community. In this perspective the IPF carries out several activities and projects to promote research through information, education and infrastructure support.

Among these is the building of the Princess Elisabeth Antarctica, the World's first "zero emission" polar research facility, built in East Antarctica with the aid of private sector partners.

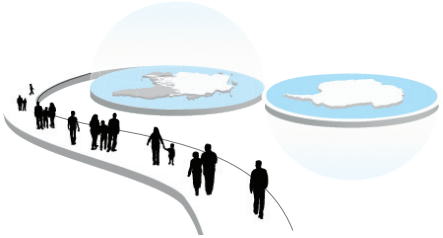
As a next step, with Polaris, the Foundation is working towards providing a novel interface between Science and Society.

THE POLARIS CLIMATE CHANGE OBSERVATORY

The Polaris Climate Change Observatory (PCCO) is a key project of the International Polar Foundation communicating to the public on the importance of the Polar Regions and the research being conducted there to improve the understanding of the mechanisms driving climate change. The Polaris will allow multiple stakeholder interactions giving the public, policy makers and actors a forum for improving mutual understanding of needs and actions required to assure an adapted response to development needs.

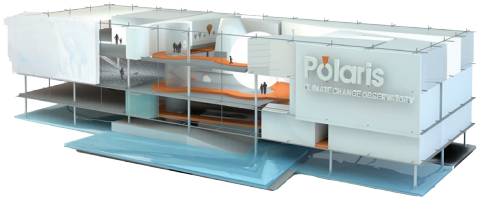
The PCCO will provide a showcase for research and forecasting tools, as well as explaining regulatory measures and international agreements aiming to set in place planetary governance frameworks and instruments. In addition, researchers and industrial actors will also be able to showcase innovation and expertise that will help society to meet the challenges that lie ahead in the battle to restrain climate change and intelligently manage resource depletion in the face of growing population pressure on fragile ecosystems.

Inform



Educate

Demonstrate



Princess Elisabeth Antarctica
The First “Zero Emission” Polar Research Station - © IPF

CLIMATE CHANGE

THE CHALLENGE

Among the multiple threats to human civilisation in the 21st Century, climate change is possibly the most complex, encompassing as it does resource use, water availability, biodiversity, land use and migration of populations. Understanding and dealing with warming inducing climate change will require a campaign of collaborative research, improved scientific education and the instituting of novel partnerships for innovative responses.

MYTH OR REALITY

Mankind is faced with the possibility that our actions are provoking damaging changes to the Earth's regulatory cycles, and the stability of the biosphere. These changes could significantly affect the future of the human species on Earth. This situation has never been experienced before on such a scale in the history of human civilisation. Confronted by a host of fundamental unknowns about our relationship with planet Earth, there are many questions that need to be addressed:

What unequivocal evidence do we have that we are provoking changes to millennial climate cycles?

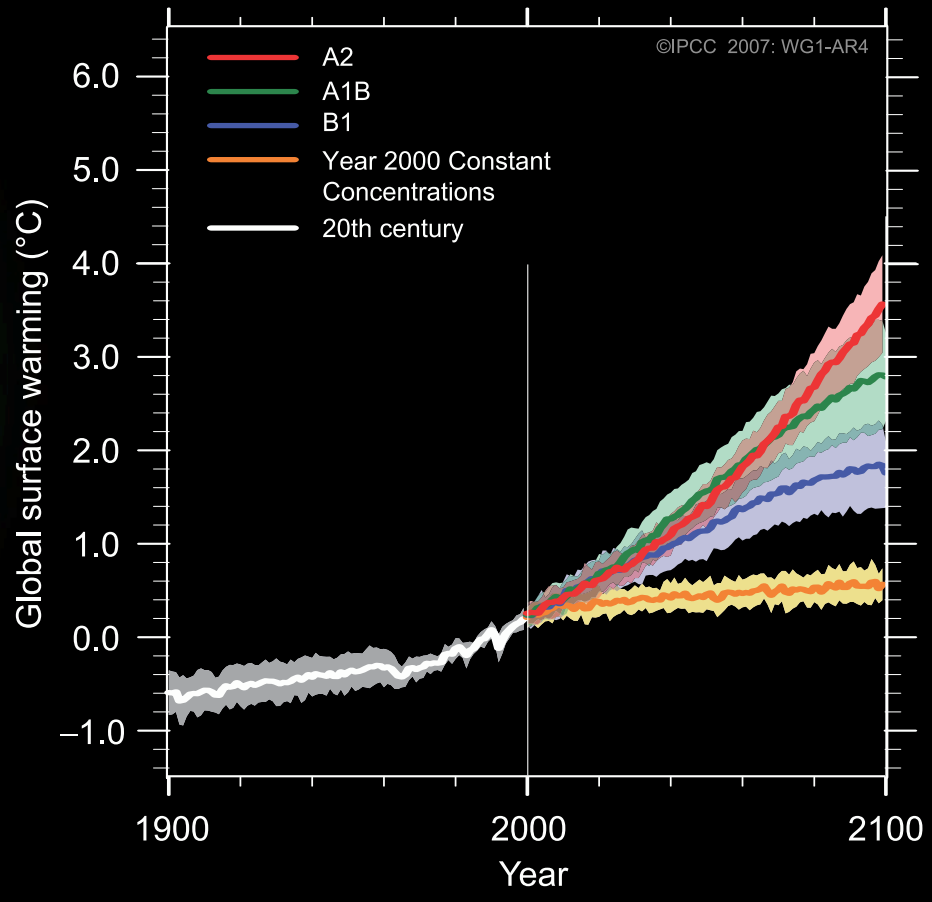
- Will we be able to respond adequately?
- Will we be capable of adapting to the ecosystem changes that will follow?
- Will we find ways to counter these changes and to preserve the equilibrium that is so essential to maintaining biodiversity?
- Are we capable of the cooperation that is required to meet the demands that mitigating climate change imposes on our management of the planet?

The need to address these complex issues in a coherent and coordinated way, with the support of the general population has led to the creation of the Polaris, which seeks to fulfill the role of information resource, promoting understanding, exchange and dialogue between all sectors of society, a beacon lighting the way in dark and difficult times.

The Polaris Climate Change Observatory is:

- A showcase of the science unwrapping climate complexities
- A place where innovations towards a low-carbon economy can be explored
- A venue for bringing together policy-makers, civil society and industry
- A centre for the promotion of scientific education as a tool for progress

Observed and projected
global surface warming (IPCC, 2007)



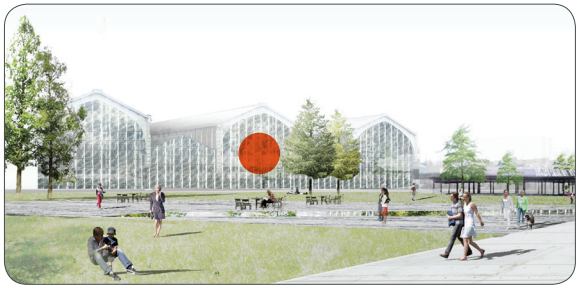
THE POLARIS CONCEPT

The PCCO is part of an integrated multifaceted concept developed in a novel science communication facility. The exhibition spaces explore the issues facing the planet and invite individuals and society to enact change through understanding the reasons for action, as well taking stock of the means available.

Exploring and understanding the natural workings of the Earth's climate, the Polaris Climate Change Observatory will retrace the evolution of climate, and the role of scientific research in understanding observed changes. The PCCO will also set out to explain the drivers of human induced change currently underway, and how responses to change will depend on our capacity to understand its pace and direction.

The PCCO will examine the furthermost reaches of the Earth: from the Arctic in the North to the Antarctic in the South to show the relevance of the scientific work being done there to fill in gaps in knowledge, and to predict trends.

Polaris in the world



Gare maritime,
Tour & Taxis, Brussels

Research findings from multiple disciplines will be brought together to form an ever improving picture of the dynamic Earth System: from ice cores to marine sediments, from observations and measurements captured in the depths of the oceans, from satellites wheeling about in space, all feed data into state-of-the-art climate models. The exhibition will follow the Census of Marine Life to explain how change would affect biodiversity, the carbon cycle, rainfall, ecosystem resilience, and eventually ourselves.

The work of the IPCC (Intergovernmental Panel on Climate Change), set up under the aegis of the United Nations will also be explained. The reports of the working groups of the IPCC represent the consensus position of thousands of scientists. The Polaris will explain the conclusions of these assessment reports and their recommendations for priority measures and actions designed to try and control the speed of change, and to adapt to the probable consequences.

The IPF will set up the Polaris Climate Change Observatory in Brussels and other key regional locations. The aim is to develop the Polaris concept internationally by establishing local partnerships in each of the major regions of the Planet. The modularity of the design will allow the IPF to adapt the Polaris concept to different sites. Local partners will play a lead role in developing the Polaris concept to address regional issues.

POLARIS

NAVIGATING THE OBSERVATORY

The Polaris concept begins with the external structure which is in the form of a tabular iceberg, enclosing an exhibition area of 3000 m^2, lying over an expanse of water which has to be crossed to gain access to the observatory.

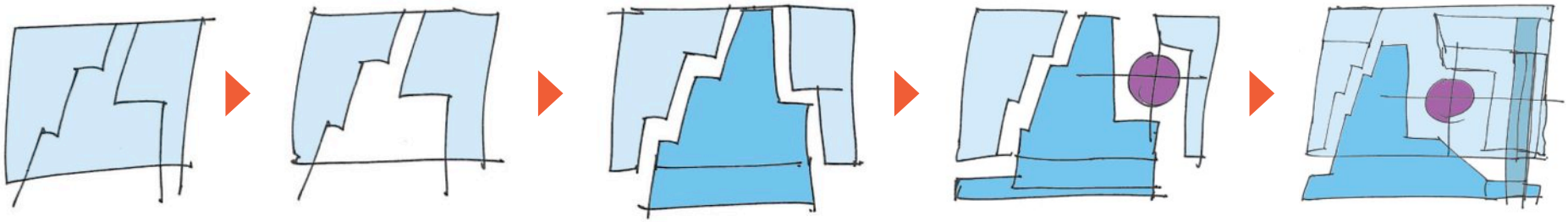
The depiction of the melting ice block is a spatial metaphor for climate change. Each Polaris contains three iconic symbols: the iceberg, the planet and the ice core as recurring themes, linking all Polaris facilities in different locations.

THE EARTH AT THE HEART OF THE POLES

Inside the Polaris, the ice block is fissured to allow a view on the Earth from different vantage points. The ice frames the Earth giving it an unusual perspective.

Three elements form the core of the space: the iceberg, the planet and the ice core

- The iceberg is the symbol of the Polar World
- The planet is the canvas against which global phenomena are projected
- The ice core is a metaphor for the archives of climate history



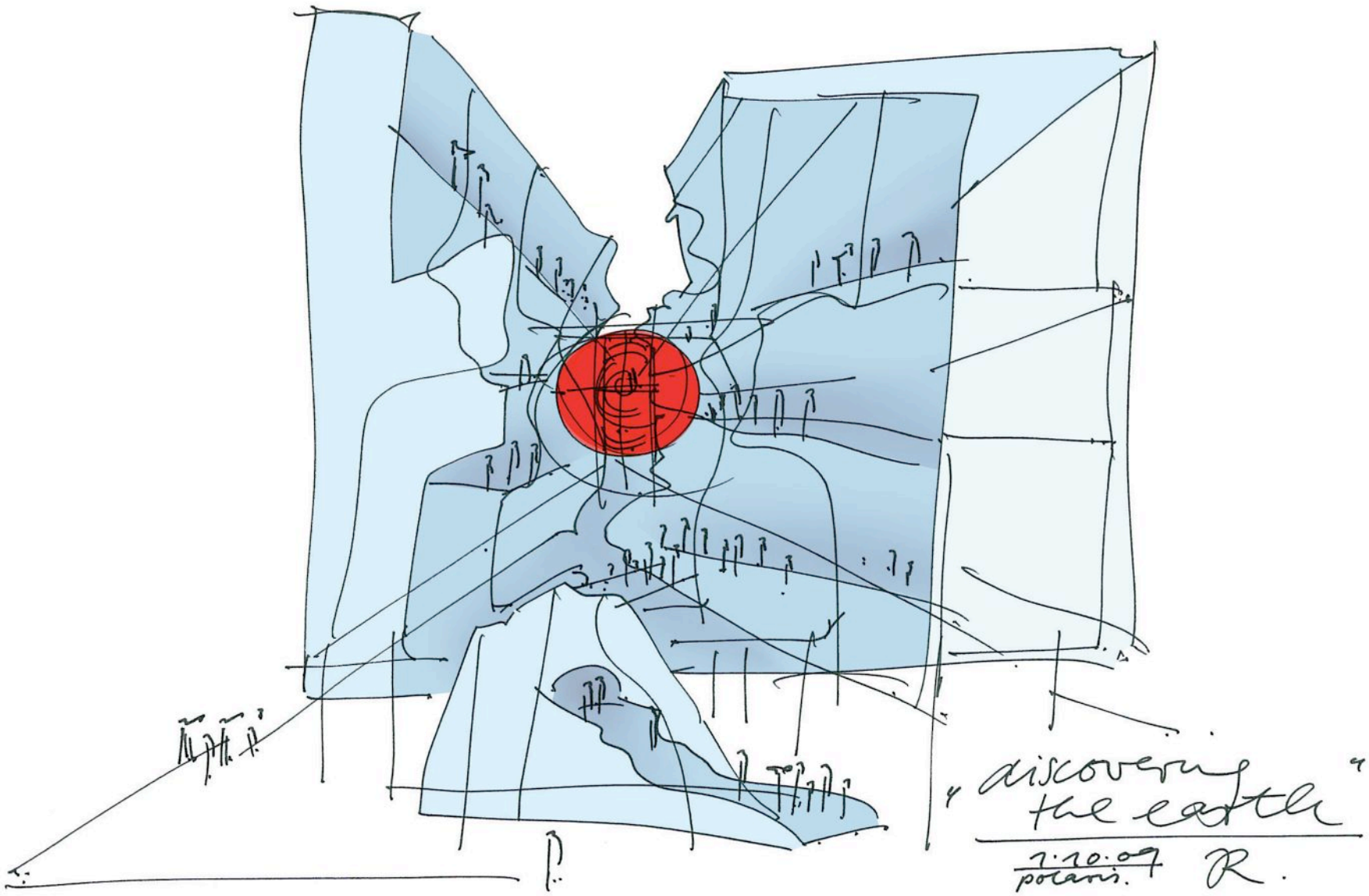
❶ Ice-block

❷ Crevasse

❸ Iceberg

❹ The Earth

❺ Ice-core


"discovering the earth"
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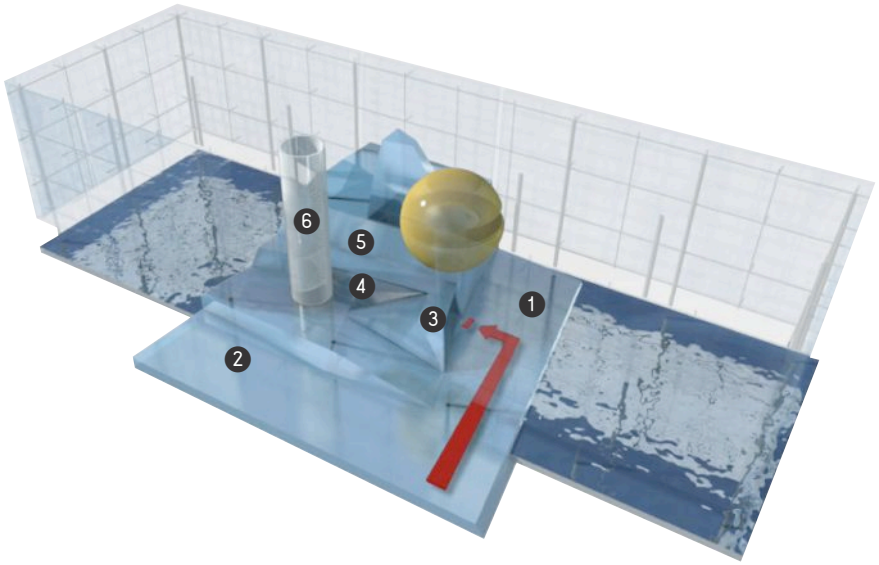
THE POLARIS CLIMATE CHANGE OBSERVATORY

EXHIBITION SPACES

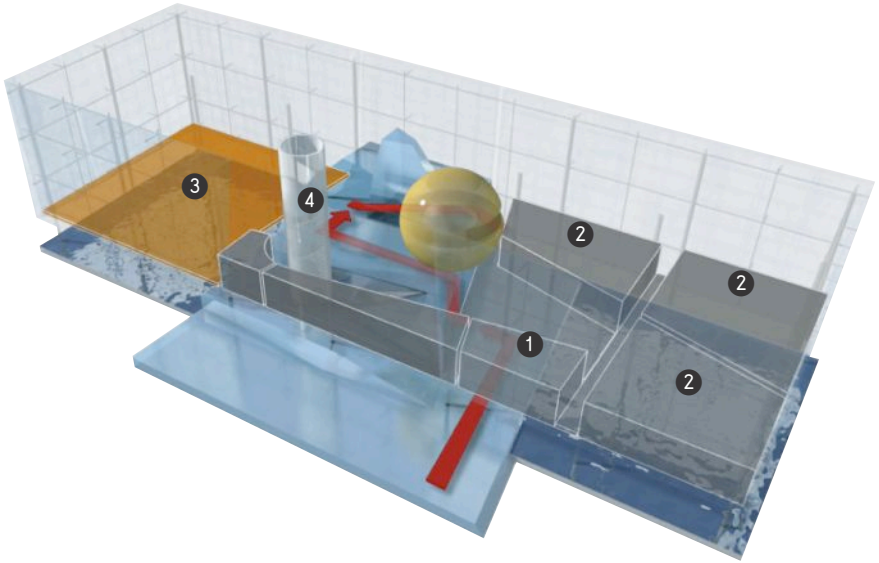
LEVEL 00
FOYER AND PROLOGUE

1 Entrance and Foyer
2 Cafe
3 Tickets and Museum shop
4 Entrance to Alternative Earth temporary exhibition space
5 Iceberg Arctic space
6 Ice core view



LEVEL 01
ADMINISTRATION

1 Administration
2 Classrooms and workshop laboratories
3 Temporary exhibitions space
4 Ice core

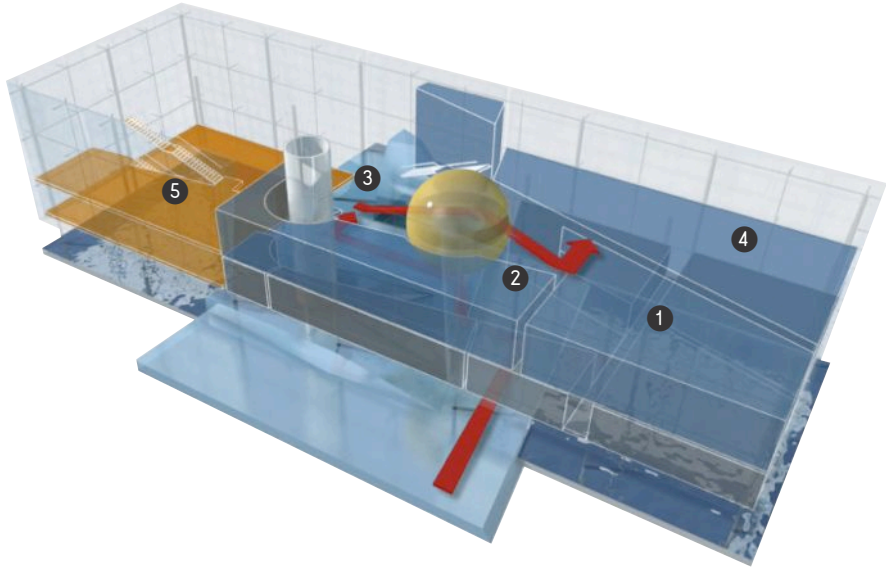


THE POLARIS CLIMATE CHANGE OBSERVATORY

EXHIBITION SPACES

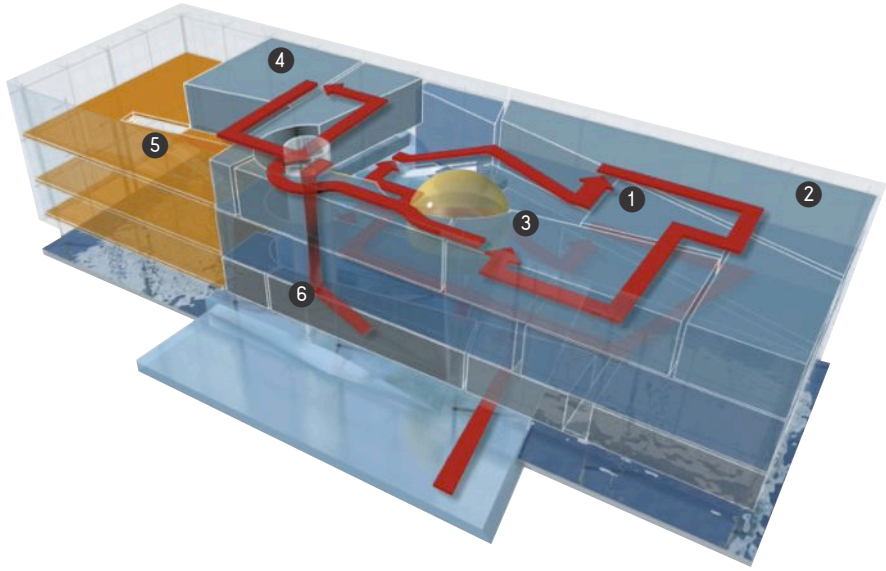
LEVEL 02
EXHIBITION SPACES

1 Climates of the Past - Ante Homines / The Advent of Mankind
2 Natural Climate Mechanics - Dance of the Planets
3 Blue Planet Observatory – Exterior / Interior
4 Earth Archives / Reading the Earth
5 Temporary Exhibition



LEVEL 03
EXHIBITION SPACES

1 Man made climate –The Carbon Age
2 Climate Impacts - Future (Im)possible
3 Domus in Terra - One world solutions
4 Antarctic Ice Cap and Ice Core
5 Temporary Exhibition Space
6 Exit from Ice core to Foyer



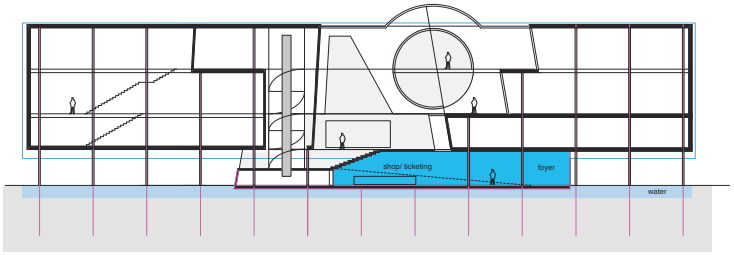
FOYER

After crossing the expanse of water the visitor enters the Polaris and catches a first glimpse of the iceberg and the planet which form the hub of the Polaris.
From the Foyer the visitor can either access the Polaris or the temporary exhibition space called Alternative Earth.

ALTERNATIVE EARTH / TEMPORARY EXHIBITIONS

The intention of this space is to allow for mobile and temporary exhibitions which explore related themes, such as futuristic visions of how we might operate harmoniously and in balance with our planet or other themes which enlarge on the material displayed in the Polaris itself.

This space can also host events and other activities.



1 Entering the Polaris
2 Overall view
3 Broken Line - ©Olaf Otto Becker

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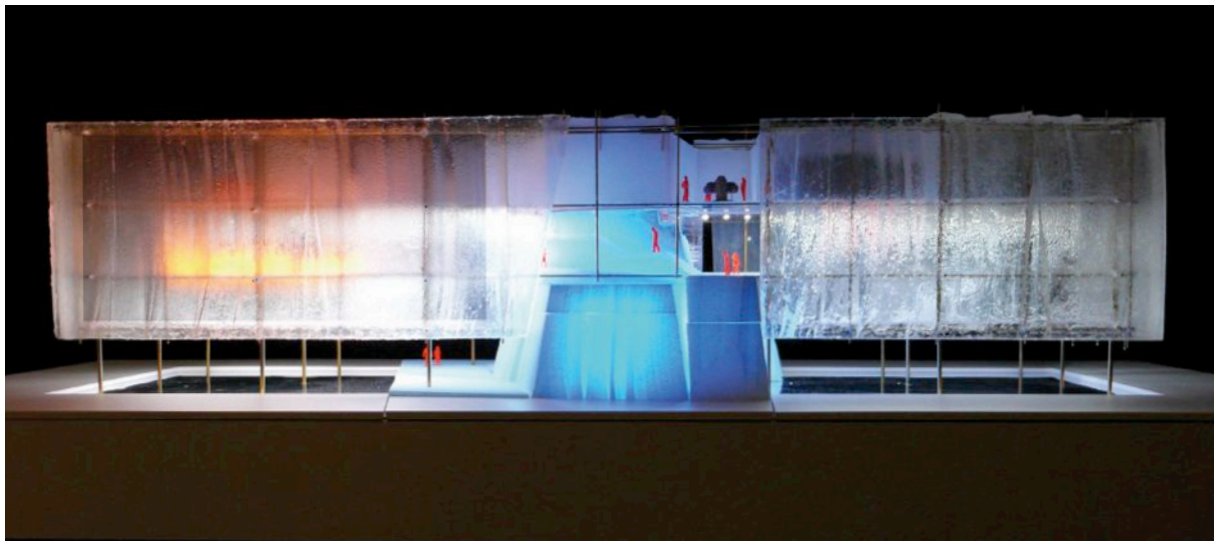

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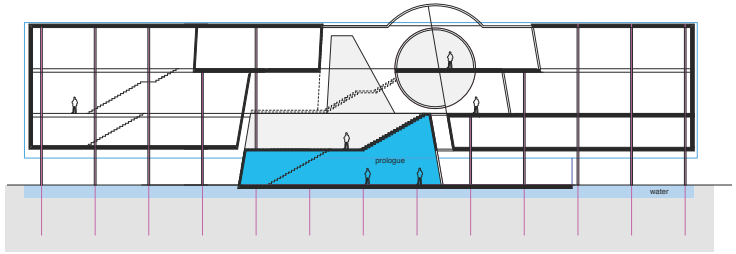
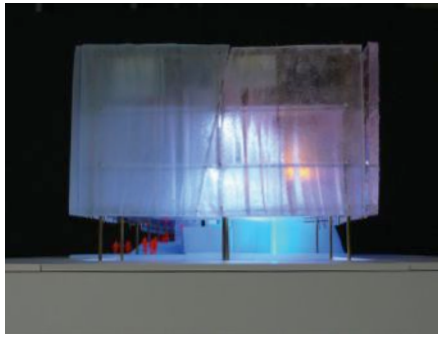
ARCTIC

THE ICE PACK / ULTIMA THULE

From the Foyer, the visitor approaches the iceberg along a ramp and enters a floating ice pack depicting the Arctic as a dynamic, fragile, and pristine environment. Exploring between the leads and the compression ridges, one may come across polar bears, seals and other creatures dependent on sea-ice for their survival. A flexible and mobile floor, coupled with an auditory background, visual simulations and a sensation of cold recreate the experience of being on the constantly evolving sea ice, through an encompassing sensory experience. This space introduces the visitor to the astonishing variety of polar ice: land and sea ice (frazil, pancake, brash, or pack ice), and its specificities.





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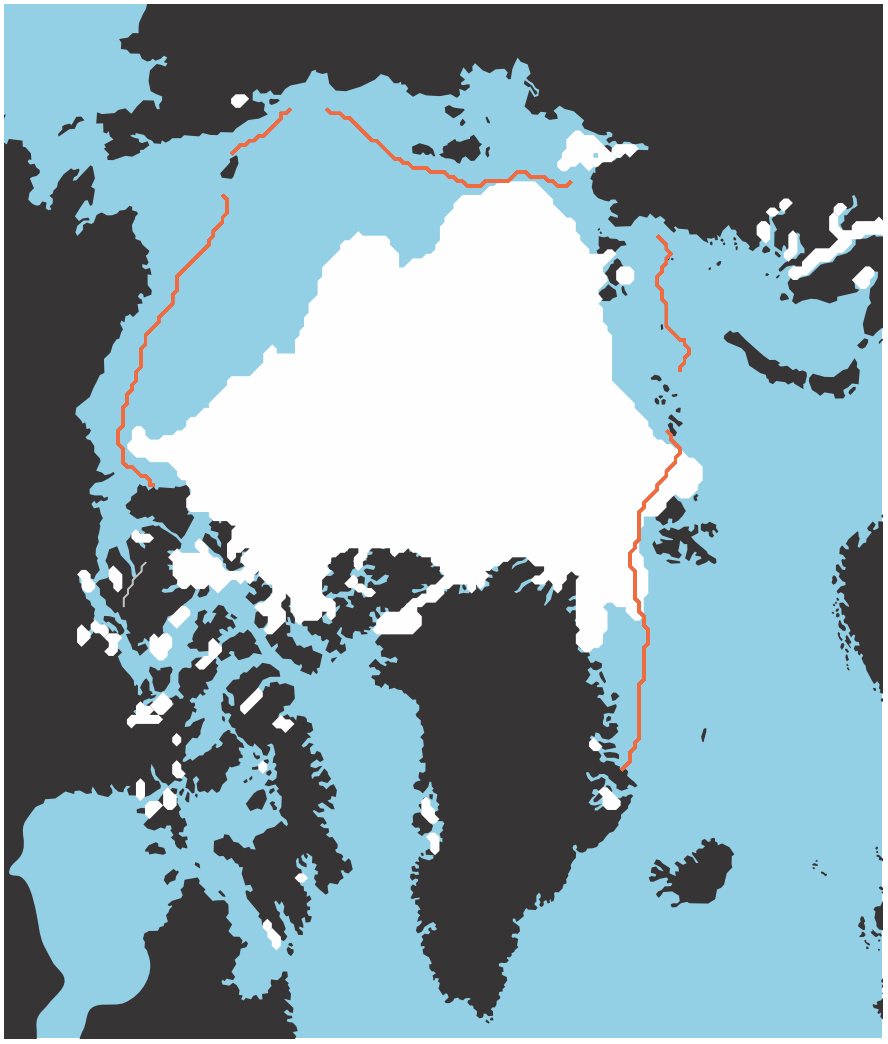
1 The iceblock
2 Arctic Arc expedition, Alain Hubert
3 walrus © IPF - Konstantine

ARCTIC FUTURES



The amplification of warming at higher latitudes is leading the Arctic to experience climate change sooner than in other parts of the world. The summer sea ice extent is considered a key indicator, and the disappearance of summer sea ice by mid-century has been raised as a distinct possibility.
The disappearance of ice could influence other changes in the Arctic such as the migration of fish stocks and the increased exploitation of mineral reserves, until now too costly and difficult to access. Scientific research data (remote sensing, ship based and via autonomous observation platforms) are fed into mathematical models seeking to try and predict the most likely outcomes, based on the knowledge of previous climate states in the palaeoclimate record.

Also to be examined, using existing research findings will be the role of the sea ice in the climate system, anomalous climate variations and their impact on biodiversity and ecosystem change. Other interesting and important impacts such as on fisheries, shipping and resource exploitation will be explored. The lives and challenges faced by the Arctic indigenous peoples will also be encountered here.

Arctic sea-ice extent in Septembre 2008 (end of summer)
Note: In red,1979-2000 average sea-ice extent for the given month (NSIDC)

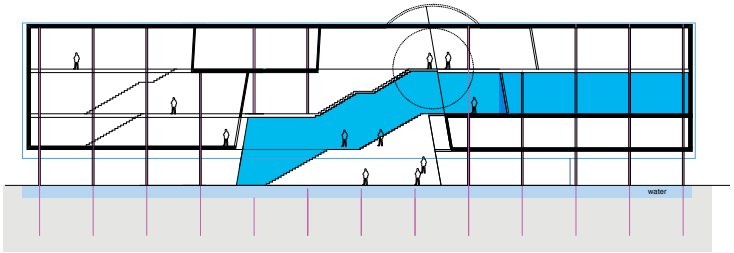
CLIMATES OF THE PAST

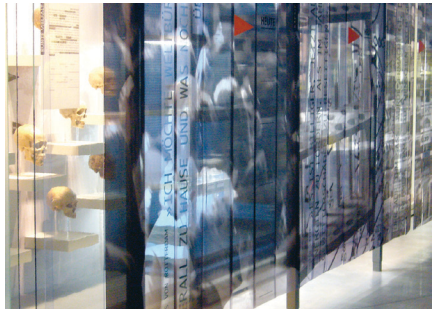
ANTE HOMINES

This space begins with a long slope leading from a display on the history of life on earth from its inception and its relationship with the climate, following sea-level and temperature change curves on the floor. Landscapes depicting past climate states, and displays of fossils of animals, will form a panorama.

Natural climate variations, glacial and interglacial, before the appearance of Man will be explored, to explain the interactions between life, ecosystems and climate. The exhibition will take the visitor back 3 billion years, to when blue green algae modified atmospheric gas composition through photosynthesis, giving us the oxygen atmosphere we have today.

An introduction to the Polar Regions during the palaeocene-eocene thermal maximum, 55 million years ago, will show conditions when average temperatures were about 5°C higher than the present. Mammals evolved during this period after the great dinosaur extinction at the end of the Cretaceous (65Mybp). Another display will feature the Last Glacial Maximum (LGM, 20Mybp) a time when world temperatures were on average 5°C cooler. During this ice age, mammoths roamed the shores of the Arctic and the Mediterranean shores were 120m lower than today.





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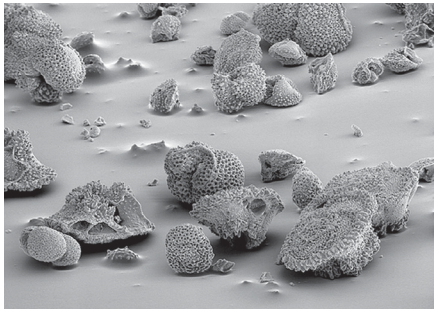

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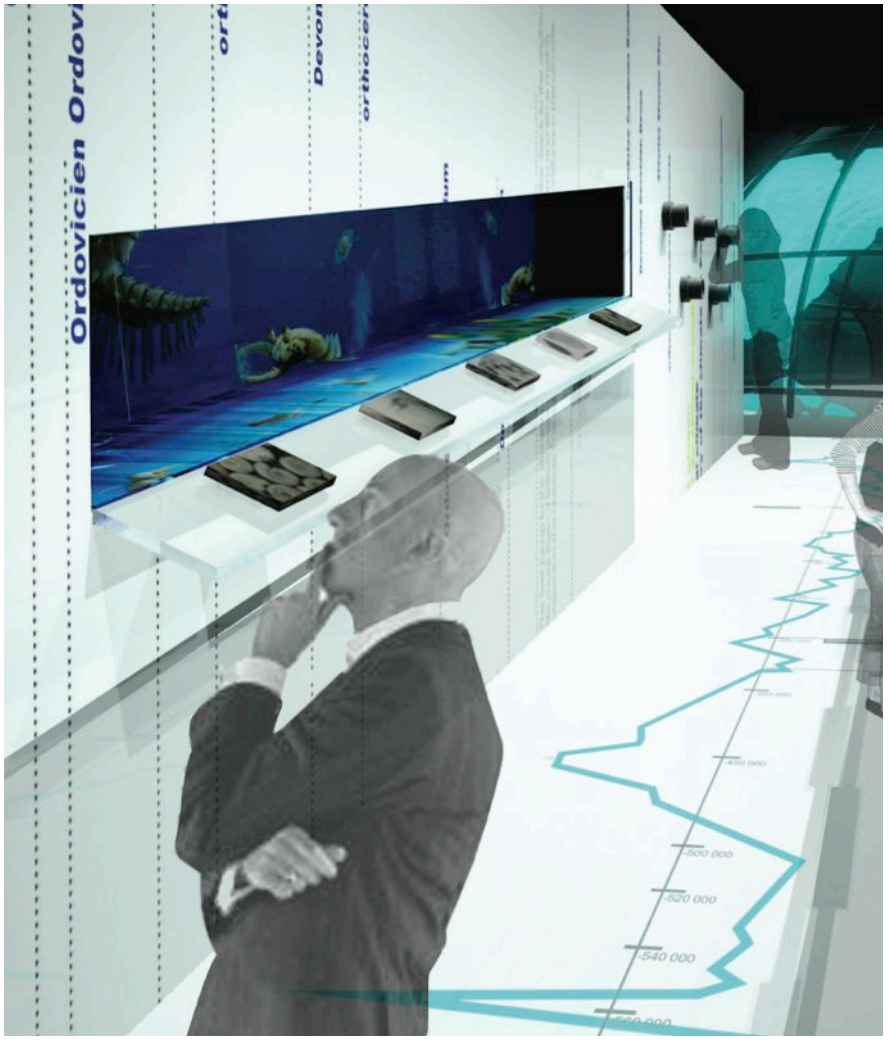
1 Exhibition Views "Leben in Extremen" by Atelier Brückner
2 Microfossils - © NASA

CLIMATES OF THE PAST

THE ADVENT OF MANKIND



To understand climate change and the impact that it may have on 21st century social organisation, it is necessary to place present human-induced climate change squarely in the context of the history of climate and the effect of change on human evolution, migration and the civilisations of the past.

Natural past climate variations, produced changes in ecosystems that dramatically influenced the rate at which Homo Sapiens acquired language, and skills with tools to adapt to the changing environment. Climate also, during clement periods, influenced the development of collaborative modes of behaviour, such as hunting and agriculture, and the establishment of cities, while provoking famine and migration when less favourable change occurred. During the relatively short time that human societies have existed on Earth, climate variations have influenced major migrations out of Africa, with successive movements populating the entire planet.

Today, with growing populations, vast megalopolic cities, and agricultural practices which lead to vulnerability in the face of shifting ecosystems, the effect of a changing climate can no longer be escaped by mass migration. Dealing with the challenges of planetary governance will require that each region identify and understand the coming changes, the better ways to manage resources, and adaptation strategies.

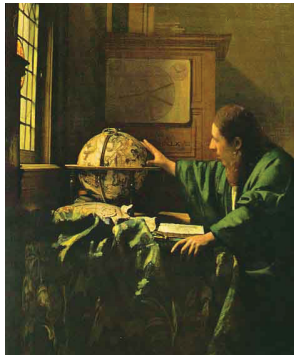
NATURAL CLIMATE MECHANICS

DANCE OF THE PLANETS

Natural climate variations are the result of the influence of the overlap of millennial astronomical cycles and are as much a feature of the Earth today as they have been for millions of years. These millennial astronomic cycles are of a predictable periodicity. The glacial and interglacial cycles are driven by the overlap of different cycles such as the orbital variations of the Earth moving in an ellipse around the Sun. Astronomers and men of science have tried to make sense of these cycles using the ever improving tools that they fabricated. The evolution of the tools of observation range from the naked eye, to the first rudimentary telescopes, to the Hubble telescope, and to the Very Large Arrays set up in remote mountaintops of Chile.

From information derived from sediments we can see that, occasionally, some other phenomena such as a massive volcanic eruption would interfere with the natural cycles, provoking cold periods.
The key to understanding natural climate variations is the quantity of solar radiation reaching the planet. This influx of energy runs the system and creates not only the long cycle glacial and interglacial periods, but also the shorter cycles of the seasons, of day and night. The energy from the sun and its periodicity has set in place a biosphere where exchanges in energy between the component parts of the living and non-living World give us favourable conditions in which life becomes possible and can flourish. Carbon is a fundamental building block of life, and carbon dioxide produced by living organisms and by cyclical exchanges in the biosphere naturally accumulates in the atmosphere creating conditions which allow the heat from the sun to be captured, thus maintaining the temperature of the Earth.

The dance of the planets as explored by men of science of the past and the present is celebrated and explained with references to : Galileo, Copernicus, Kepler, Arhenius, Ptolemy, Milankovitch, Edwin Hubble , André Berger.



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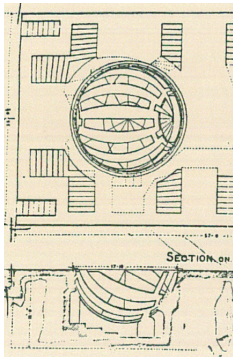

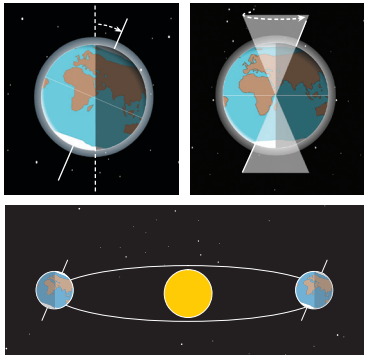

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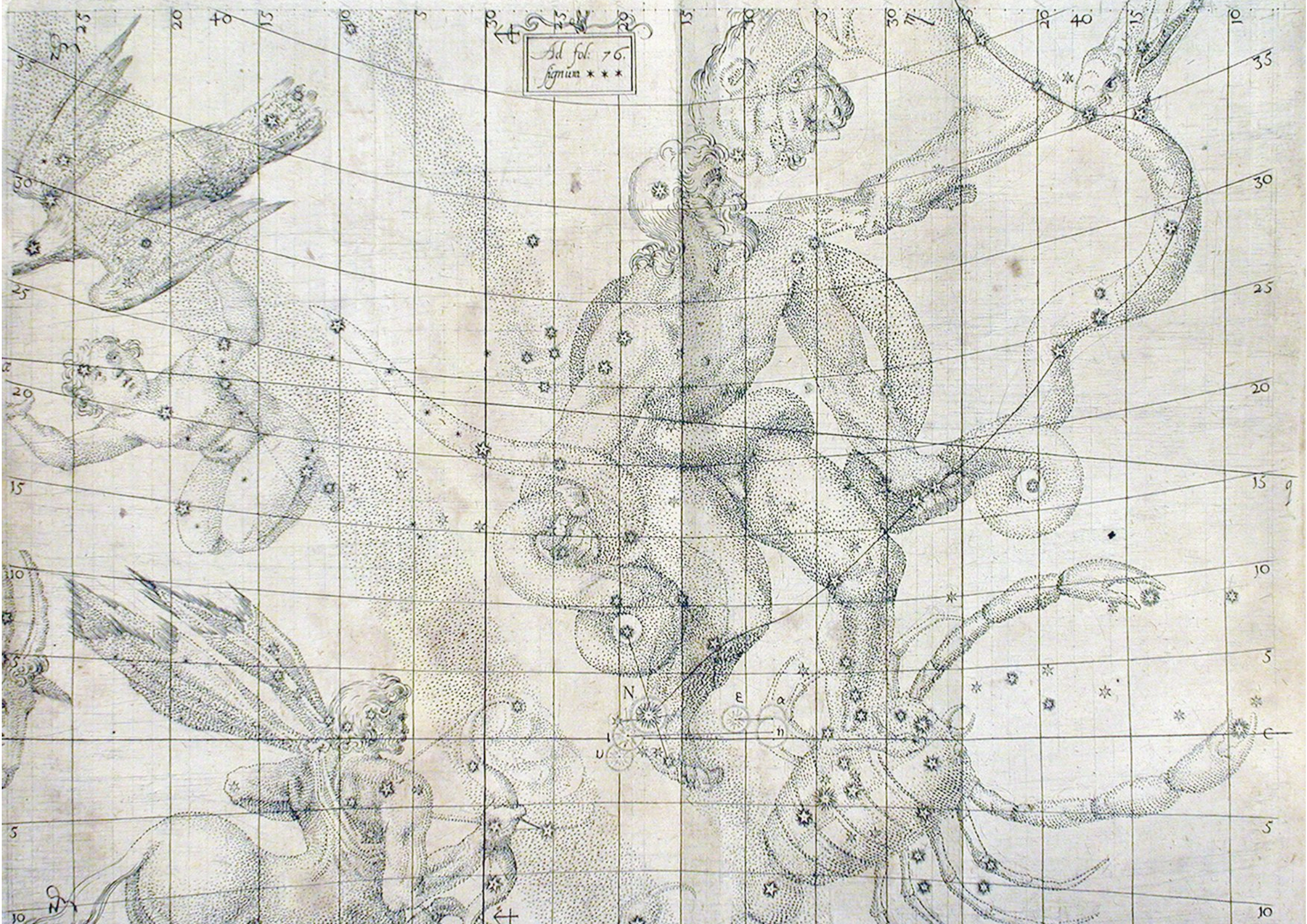
1 Gallery of astronomers
2 Three main parameters of the astronomical palaeoclimate theory by Milankovitch
3 History of Science Collections of the University of Oklahoma Libraries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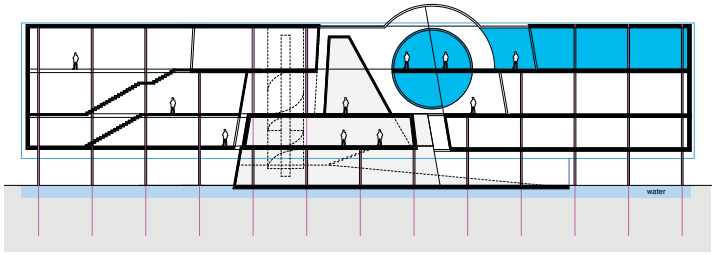
OBSERVING THE EARTH

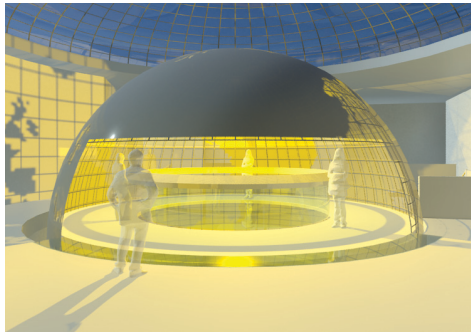
BLUE PLANET OBSERVATORY / EXTERIOR

The central element of the PCCO is the Earth, 15 metres in diameter. The sphere is used as a 3D screen to explain global phenomena. It may metamorphose with the passage of the seasons, or alternatively display weather phenomena as they appear from space. Certain animations turn the planet into a vast organism which "breathes" with the rhythm of the expansion and contraction of the polar sea-ice. Several interactive devices on the bridge along the equator, explain these animations in detail.

In the Arctic and Antarctic galleries, which provide a view of the poles from above and below, interactive displays explain the principal characteristics of and differences between the two Polar Regions.
The globe also permits the demonstration of the contribution of Global Earth Observation satellites to our understanding and knowledge of the Earth.



1 Center point in the atrium – the Globe
2 Around the Earth Observatory
3 Inside the Earth Observatory
4 CryoSat 2 - © ESA–AOES Medialab



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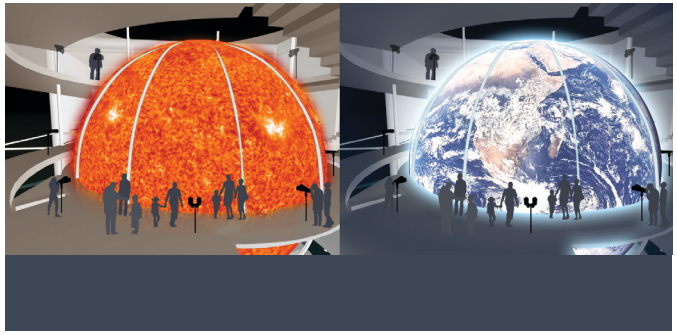

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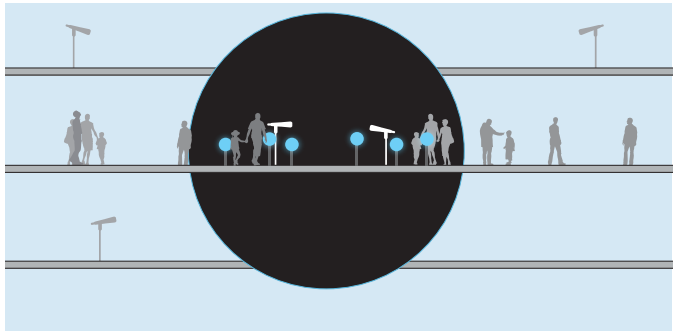

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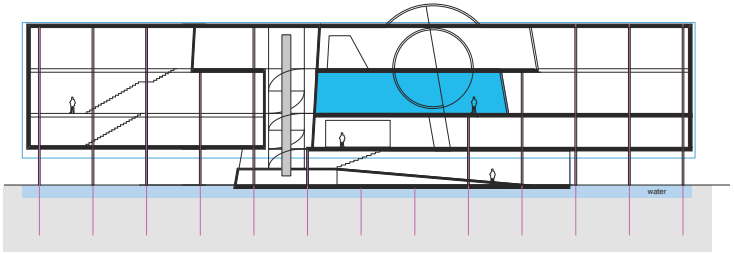
THE OBSERVATORY OF SCIENCE

BLUE PLANET OBSERVATORY / INTERIOR

The interior of the globe becomes another type of observatory from which the Arctic and Antarctic can be explored through films and presentations. A teaching or conference space allows for projections on all topics concerning Polar scientific research activity, the geography of the Polar Regions, and their history, and impact on the human imagination. The interior of the globe is accessed at the level of the equator, and also contains installations which explain in greater detail the phenomena being projected onto the surface of the globe such as the Gulf Stream.



1 Scientific research
2 Polar research icebreaker - the Xue Long

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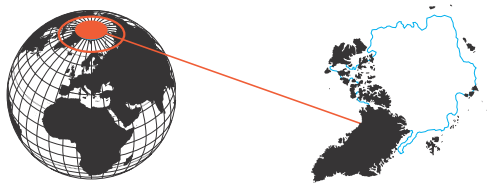
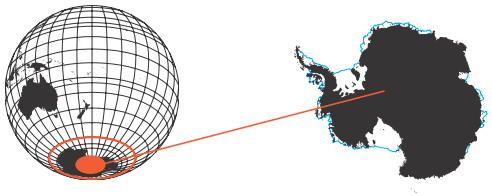
The Arctic



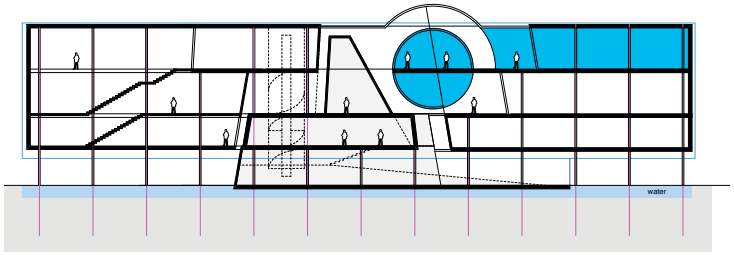
The Antarctic

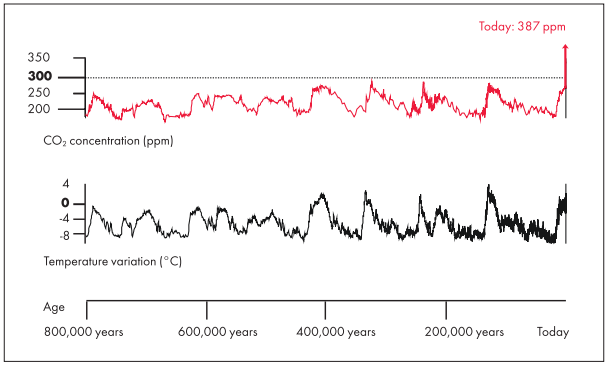


EARTH ARCHIVES – THE UNIVERSAL LIBRARY

READING PROXY DATA

Observation data and “proxy” data for climate are fed into mathematical models to help us to get a better appreciation of how climate might evolve. We can find evidence for past climate change in a variety of places. Amongst the available climate archives, polar ice coring was crucial in establishing a link between greenhouse gas concentrations and the Earth’s mean temperature for the last million years. Other sources of proxy data also help to indicate past climate variations. Proxy data for climate can be derived from many sources, such as ocean sediment cores (such as from the AICEX expedition in the Arctic Basin), ice cores (Vostok, Dome Fuji, EPICA in Antarctica; NorthGRIP, NEEM in Greenland), sea shells, tree trunks, diatoms in limestone and other calcareous substrates.
These sources cover different epochs and have greater or lesser resolution in the data layers, all contributing to refining our view of the history of climate.
Methods of extraction and analysis of ice cores, and the correlation of data between sources allow for variation to be explored in greater detail.
Displays of ice cores will explain how scientists obtain and analyze the ice, and how they use the results.





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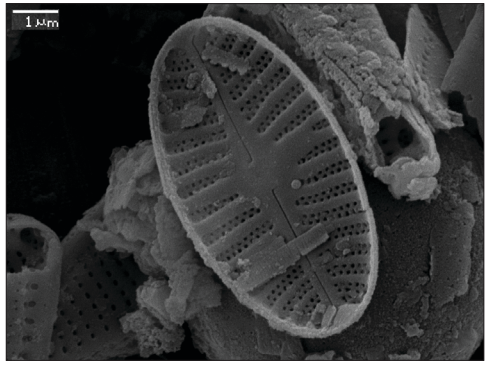

3

1 EPICA CO_2 and temperature curves
2 Climate archives - tree trunk
3 Scanning Electron Microscope (SEM) image of *Planothidium renei*, Lab PAE, UGent

READING THE EARTH

UNDERSTANDING THE ANTHROPOCENE

Equipped with an understanding of the Earth's natural climate mechanisms as a background, the visit continues now to look at the effect of human activity on the planet, and in particular human-induced climate change.

Scientists studying untouched polar ice postulated a causal link between atmospheric concentrations of carbon dioxide and ambient temperatures, based on evidence obtained from the analysis of the concentrations of carbon dioxide and oxygen isotopes in the ice. Oxygen isotope ratios vary from the heavy to the light depending on the ambient temperature at the time the oxygen was in the atmosphere. By studying the temperature-carbon dioxide relationship, it was possible to establish that the two were linked. Furthermore, not only do they shadow each other, but they have done so for a million years of climate records, as related by the ice. If this relationship is to be taken as ineluctable, then the concentrations of carbon dioxide observed in the atmosphere today give cause for concern as they are largely outside of the millennial cyclical relationship. Visitors will learn the difference between natural variations in climate in phenomena such as the North Atlantic Oscillation, or the El Niño, as well as the role of ocean thermohaline circulation.

Observation tools are prominently displayed: weather stations, satellites, automated drifting buoys or remote-controlled underwater vehicles illustrate the continuous global climate monitoring efforts. Audio-visual and interactive displays also explain how researchers model the climate of the 21st century.

The next phase in understanding the impact of climate is to enter the data into models such as the Global Climate Models or Regional Climate Models, and attempt to predict the future with these.

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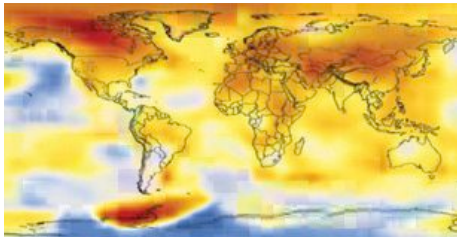

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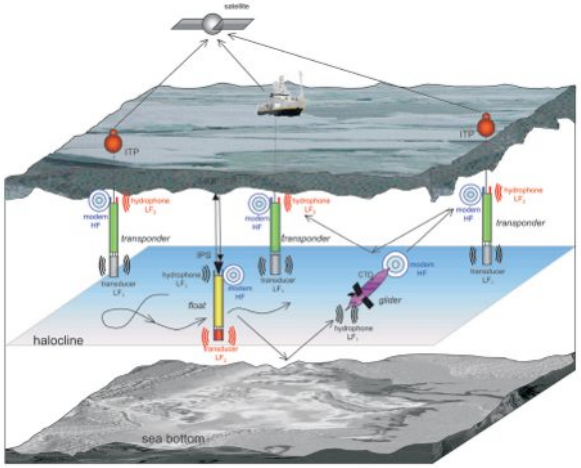
1 Scientific research equipment
2 Satellite
3 temperature of the Earth 2000
4 Hi-tech devices implemented by DAMOCLES to provide satellite to seafloor observation and monitoring.



4

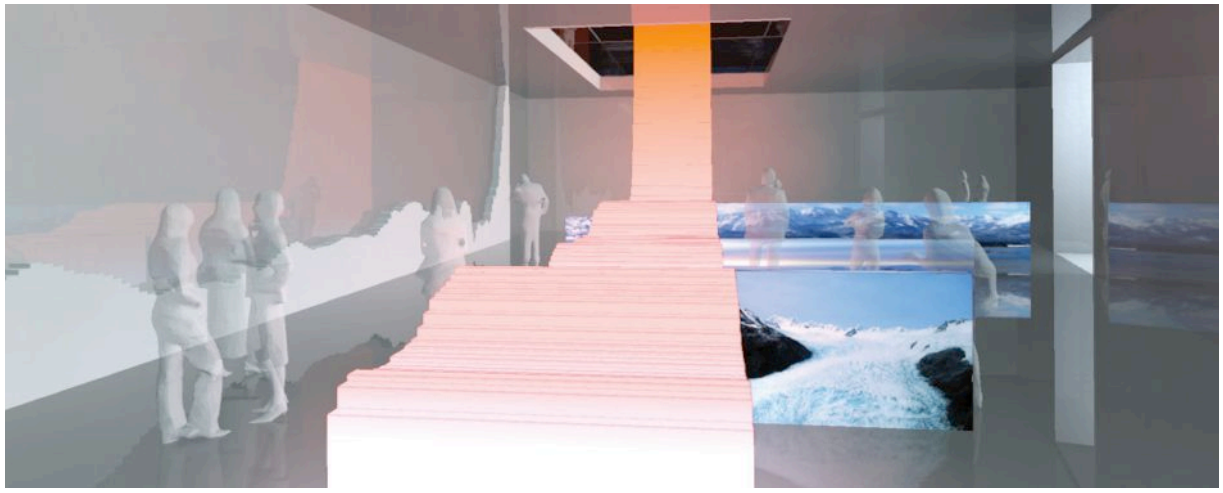
MAN-MADE CLIMATE

THE CARBON AGE

Energy is a major part of the history of civilisations. Our recent history, since the beginning of the coal and oil-fuelled industrial revolution, has seen the development of a fossil fuel-addicted civilisation. Fossil fuel use has allowed an unprecedented availability of energy for mankind, but also brought climate change.

The main goal of this space is to make the visitors understand how our energy-hungry way of life contributes to raising greenhouse gas emissions and concentrations, generating global warming. Using panoramic displays to evoke worldwide oil production, the atmosphere will reflect the dark, noisy, and polluted scenes of the industrial revolution. The role of different fossil fuels in the economy, our short relationship with fossil fuels and how they affect every aspect of modern civilization, will also be explored. Some of the themes to be covered will be: the level of our dependence on energy; the role of the internal combustion engine in modern civilisation; the history of fossil fuel discovery and use; the link between CO_2 rise and the industrial revolution; the historical context of our energy-hungry way of life; coal reserves and mining; the oil production peak; the forecast energy deficit.

1 Threedimensional CO_2 curve
2 Threedimensional temperature curve



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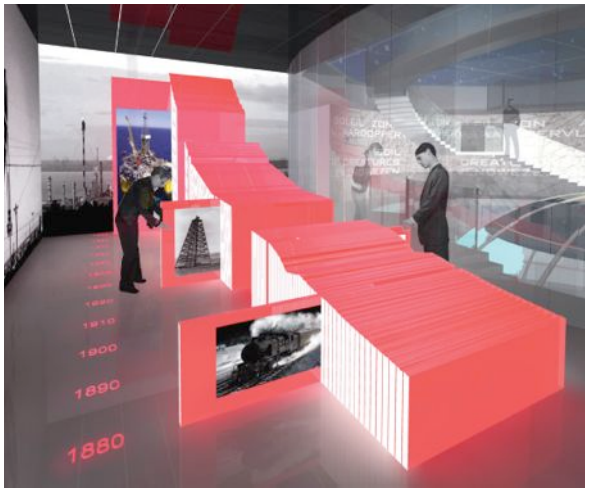

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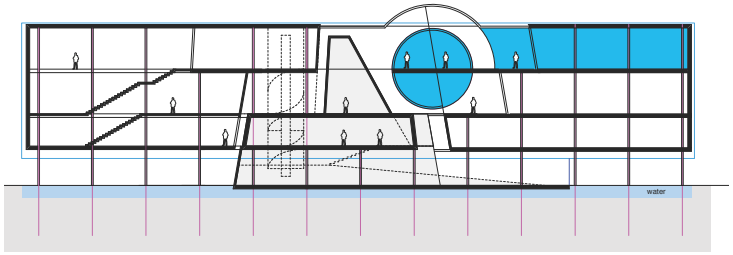
CLIMATE IMPACTS

FUTURE (IM)POSSIBLE

Scientists from a range of disciplines agree: climate change has begun and will dominate our century. Glaciers are melting, sea-levels are rising. Biodiversity is under siege and extreme climatic events are increasingly frequent.

The work of the Intergovernmental Panel on Climate Change (IPCC), the international collaborative effort of thousands of meteorologists and climatologists to try to synthesise an agreed position from the deluge of data is explained here. The IPCC synthesis reports attempt to explain the most likely outcomes of the data they analyse. The role of probabilities and uncertainty in modelling future impacts is also explained in the scenario building exercises. What are the most commonly expected impacts of climate change, and how do they vary from region to region? What phenomena will cause change to accelerate, such as the reduction of the extent of the Arctic ice pack.



1 Shishmaref, Alaska - © Hélène DAVID, collectif Argos
2 Halligen, Germany - © Hélène DAVID, collectif Argos
3 Longbaoshan, China - © Eléonore HENRY DE FRAHAN, collectif Argos

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DOMUS IN TERRA

ONE WORLD SOLUTIONS

Climate change and the coming resource crisis imposes on society the need to rethink the production and use of energy from every perspective. We need to examine global governance frameworks in order to put in place effective instruments and structures for managing the future of a planet. We need to reinforce scientific education to prepare generations to come for their task of providing stability and prosperity for the growing population of the World, amidst the dwindling resources.

Solutions designed to mitigate the effects of climate change will be prominently displayed in the Domus in Terra. Visitors will have the possibility to investigate a wide range of technologies offering green energy solutions. Climate change imposes on society the need to re-think the “business-as-usual” model. Will it be possible to design a new kind of socio-economic model which would allow us to respond to the challenge of providing clean energy for generations to come? The necessity of dealing with climate change is leading us to rethink completely our means of production and use of energy.

The themes to be covered in this space could include: the global political response, the regional response, the Kyoto protocol and beyond, energy efficiency and renewable energy solutions, legislative, regulatory and other means for trying to achieve climate stabilization; carbon taxes and emissions trading; Princess Elisabeth Antarctica - the first "zero emission" station; solutions for mass transport; solutions for agriculture, and land use; social and behavioral sciences, ...

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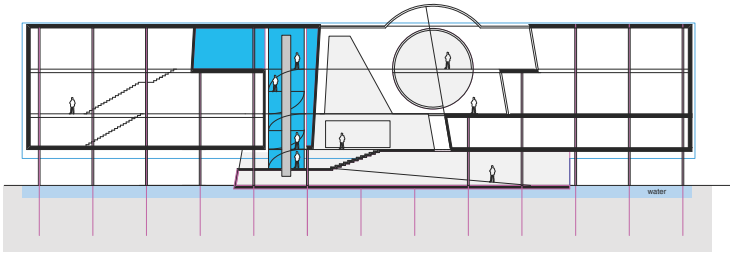
1 Sustainable energy sources
2 Future energy technologies
3 Stockholm - European Green Capital 2010 - © *Kicki*

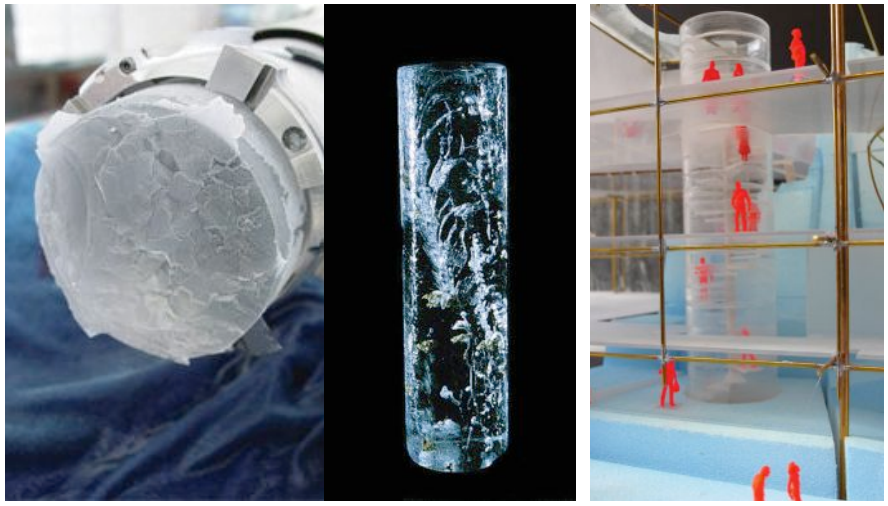
THE ANTARCTIC ICE CAP & THE ICE CORE

The Antarctic ice cap is one the biggest deserts on Earth. It is a vast, pristine space of forbidding beauty. As the visit begins to wind down the quiet meditative quality of this space allows the visitor to reflect on the numerous issues which have been encountered. Screens allow for link ups with participating Antarctic stations so that visitors can interact directly with station staff and scientists.

An ethereal misty zone leads to the descent into the ice core staircase where the recent climate history of the World will be etched into the ice walls of the core, as a final reminder of the experience. Descending the ice core, the visitor travels into the Planet's long climate history, the light taking on an ever darker blue, creating a physical sensation of depth as the journey through time progresses.



Ice-core




Time is an illusion, Lu time doubly so.
Douglas (1952–2001)
We m use time as a tool, not
John F. Kennedy
Carboniferous
Jurassic

THE INTERNATIONAL POLAR FOUNDATION IN BRIEF

HONORARY PRESIDENT

HRH PRINCE PHILIPPE OF BELGIUM

FOUNDERS

ALAIN HUBERT

Polar Explorer, Civil Engineer, Entrepreneur & Mountain Guide

2003 - 'Georges Lemaître International Prize', for services to science.
2005 - Descartes Communication Prize (London, UK).
2008 - 'Climate Change' Prize by the Prince Albert II de Monaco Foundation, for his clairvoyance and commitment towards climate change-related issues (Monaco).
2009 - Doctor Honoris Causa at the University of Hasselt (Belgium).

PROF. ANDRÉ BERGER

Climatologist, Professor (emeritus) at the UCL (Belgium) and Honorary President of the European Geosciences Union

1993 - Member of the New York Academy of Sciences (1993-1996).
1997 - Foreign Member of the Koninklijke Nederlandse Akademie van Wetenschappen.
2000 - Associate Foreign member of “Académie des Sciences” (Paris, France).
2001 - European Latsis Prize 2001 of European Science Foundation.
2003 - Associate of The Royal Astronomical Society (London,UK), in recognition of inspiring leadership within the Geophysical Community.
2004 - Chevalier de la Légion d'Honneur (France).
2007 - Grand Officier de l'Ordre de la Couronne.
2008 - Advanced Grant of the European Research Council.

PROF. HUGO DECLEIR

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Ph.D.in Sciences (Ghent State University), 1971.
Former Head of Department of Physical Geography of the Free University of Brussels (VUB).
Former Chairman of the Belgian National Committee for Antarcic Research.
Holder of the 'Richard P. Goldtwaith Award', Byrd Polar Center, Ohio State University, USA (1997).

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