



Large  
Print

# Eco- Visionaries

**Confronting a planet in  
a state of emergency**

The Gabrielle  
Jungels-Winkler  
Galleries

**Do not remove from gallery**

Eco-Visionaries

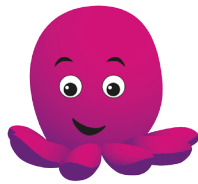
Confronting a planet in a state of emergency

Royal Academy of Arts

The Gabrielle Jungels-Winkler Galleries

23 November 2019 — 23 February 2020

Lead Supporter



**octopus**energy

Supported by

swiss arts council

**prohelvetia**

The International Patrons of the  
Royal Academy of Arts

Scott and Laura Malkin

Additional Support by

Office for Cultural and Scientific Affairs  
of the Embassy of Spain in London

Swiss Cultural Fund UK

Embassy of Denmark in the UK

# Contents

**Page 4** Entrance corridor: Introduction and Timeline

**Page 22** Gallery 1

**Page 38** Gallery 2

**Page 48** Gallery 3

**Page 68** Exit corridor: additional information and credits

# Introduction

We are facing an ecological emergency. According to the United Nations, if we want to avoid a climate breakdown, carbon emissions must reach zero in the next 30 years.

This is not only an environmental catastrophe that could impact future generations, but one that would drastically affect our own. We need to act, but we also need to understand the scale of this complex problem in order to define the changes that must be made.

The damaging effects that modern life has had on the environment are more tangible than ever. Global warming is responsible for the melting of polar ice caps, rising sea levels, extreme weather events, droughts and floods, with dramatic consequences for

nature and our lives. Sustaining our rapidly growing global population is leading to the destruction of many ecosystems, the extinction of species and a resource crisis.

'Eco-Visionaries' presents how architects, artists and designers are inquiring into these ecological transformations, producing a critique of their causes, raising awareness of their less visible aspects and anticipating alternative visions of how to respond and adapt to their consequences.

The works in this exhibition alternate between critical inquiry and visionary optimism. They present a future in which humans reconnect with nature and create a more empathetic relationship with their fellow species – a future that starts by taking action today.

# Timeline

For a long time, our planet has been suffering. The origins of the modern environmental conservation movement can be traced back at least 200 years to the first Industrial Revolution, when a number of scientists and thinkers started raising serious concerns about the impact of human activity on the environment.

Since the 1950s this concern has also reached a wider sector of the population, which led to the creation of many nature conservation organisations and important changes in environmental policy.

Architects, designers and artists have been a key part in this effort, both drawing attention to the fragility of the planet and exploring ways to stabilise its endangered ecosystem.

This timeline introduces a brief selection of

key events in recent ecological history, environmental activism and its connection to creative practices.

1750

World population is estimated to be 700 million.

1760–1830

The first Industrial Revolution begins in Great Britain. New sources of energy, such as coal and steam, are used to power new machines designed to reduce human labour and increase production.

1840s

Scottish surgeon Sir James Ranald Martin, pioneer of the environmental movement, starts reporting about the damaging effects of deforestation in India. His work leads to the creation of the Indian Forest Service.

1850s–1880s

Following the first Industrial Revolution, many indigenous peoples of North America fight for the protection of their civilisations and natural resources.

A delegation from members of tribes in the Sioux Nation meets with American settlers in 1875 to negotiate gold-mining rights in the Black Hills of South Dakota. **Image 1**

1872

US President Ulysses S. Grant establishes Yellowstone as the first national park in North America to help fight poaching and illegal logging.

1870–1914

The second Industrial Revolution takes place, a phase of rapid industrial development involving expansion in the use of electricity, petroleum and steel. It leads to improvement in living standards, particularly for the middle class.



1892

Naturalist John Muir founds the Sierra Club, one of the first large-scale environmental preservation organisations in the world, with the aim of lobbying politicians to promote policies that protect the environment.

1903

John Muir takes US President Theodore Roosevelt on a camping trip to Yosemite National Park. The trip helps to persuade Roosevelt to return Yosemite Valley and the Mariposa Grove to federal protection as part of Yosemite National Park. **Image 2**

1909

Sweden creates the first national parks in Europe among them Sarek National Park. It follows concerns raised by explorer Adolf Erik Nordenskiöld in the Swedish parliament about humans' negative toll on nature.

1914

On the eve of the First World War, the world population is estimated at 1.6 billion.

1925

The Virunga National Park in the Belgian Congo (now the Democratic Republic of Congo) is founded. Africa's first government-protected natural area, its goal is primarily to protect local mountain gorillas.

1946–1962

The US government conducts nuclear bomb tests across the Pacific Ocean.

1950

Following the Second World War, the world human population is estimated to be 2.5 billion.

1952

'The Great Smog', considered the worst air-pollution event in the history of the UK,

takes place in London between 5 and 8 December, leaving 4,000 dead. Following the episode, policemen wear special masks designed by the British Medical Association for the protection of outdoor workers.

### **Image 3**

1956

Parliament passes the Clean Air Act following London's Great Smog and a number of protests across the country. The aim of the legislation is to control smoke pollution from factories in residential areas.

1960

Architects Buckminster Fuller and Shoji Sadao propose designs for a dome with diameter of 3km to cover midtown Manhattan with the intention of regulating weather and reducing air pollution. **Image 4**

1961

The World Wildlife Fund (now the World Wide Fund for Nature, WWF) is founded. Today, WWF is the world's largest conservation organisation.

1962

Rachel Carson publishes her book 'Silent Spring', raising concerns about the damaging effects of the chemical industry on the environment. President John F. Kennedy orders his Science Advisory Committee to investigate her claims.

1965

A large number of hippie communes are founded in response to the unsettling global political and social situation. One of the first rural communes, 'Drop City' in southern Colorado, is set up by four young art students and filmmakers inspired by the geodesic dome designs by Fuller and Sadao. **Image 5**

1970

The first Earth Day takes place on 22 April, with 20 million people, including many children, taking part in rallies across the US. Fifth Avenue in New York City is closed to traffic for the occasion. Earth Day continues to be celebrated around the world to raise support for environmental protection. **Image 6**

1971

Greenpeace is founded by environmental activists Irving Stowe and Dorothy Stowe.

1972

The first international United Nations Conference on the Human Environment takes place in Stockholm in response to the growing awareness of environmental issues.

1973

Members of the Organization of Arab Petroleum Exporting Countries (OAPEC) impose an oil embargo, raising the oil price by 400%.

1975

The 'Smiling Sun' badge, designed by Danish activist Anne Lund, becomes the international symbol of the anti-nuclear movement. **Image 8**

1979

A decrease in oil production in the wake of the Iranian Revolution leads to a worldwide oil crisis, creating panic and increasing oil prices.

1982

Artist Agnes Denes plants and harvests two acres of wheat two blocks from Wall Street on land worth \$4.5 billion, calling

attention to mismanaged priorities around waste and ecological concerns. **Image 7**

1984

A gas leak at the Union Carbide India Limited pesticide plant in Bhopal, Madhya Pradesh, India, results in over 16,000 people dying from gas-related diseases. The Bhopal Disaster is considered one of the world's worst industrial catastrophes.

1983

Agrochemical company Monsanto conducts the first field tests of genetically modified crops.

1985

The ozone layer hole over Antarctica is discovered by scientists Jonathan Shanklin, Brian Gardiner and Joe Farman.

1986

On 26 April an explosion takes place in the No. 4 Nuclear Reactor in the Chernobyl Nuclear Power Plant near the city of Pripyat in the Ukrainian Soviet Socialist Republic. It leads to the worst nuclear disaster in history, both in terms of casualties and financial costs.

1989

In Alaska, the Exxon Shipping Company's oil tanker 'Exxon Valdez' strikes Bligh Reef off Prince William Sound, spilling 37,000 tonnes of crude oil into the ocean. It creates one of the worst human-caused environmental disasters of all time.

1992

The Earth Summit, a major United Nations conference, is held in Rio de Janeiro between 3 and 14 June. It is a platform for UN member states to collaborate on issues relating to sustainability.



1997

On 11 September 1997, the Kyoto Protocol is signed. The Kyoto Protocol is the first international agreement made by industrial nations to reduce emissions of six greenhouse gases to prevent global warming.

1999

World human population reaches 6 billion.

2000

The term 'Anthropocene' is coined by the Nobel prize-winning scientist Paul J. Crutzen. It describes a new geological age in which human activity is the dominant influence on climate and the environment.

2001

The Philip Merrill Environmental Center in Maryland becomes the first building in the world to receive the LEED Platinum certification, recognising its status as the most sustainable new building in the world.

2006

Oscar-winning documentary 'An Inconvenient Truth' is released. It tells the story of former US Vice President Al Gore's campaign to educate people about global warming.

2008

The Svalbard Global Seed Vault opens on the Norwegian island of Spitsbergen near the North Pole with the aim of collecting and preserving the world's largest collection of crop seeds against any natural or man-made disasters that could ultimately cause their extinction.

2015

A global climate-change pact known as the Paris Agreement is agreed at the COP 21 summit, committing all countries to reduce carbon emissions for the first time.

Coinciding with the COP 21, artist Olafur Eliasson and geologist Minik Rosing install

80 tonnes of free-floating glacial ice taken from the waters around Greenland in the iconic Place du Panthéon in Paris. **Image 9**

2017

US President Donald Trump announced his intention to withdraw the United States from the Paris Agreement.

2018

Climate activist Greta Thunberg begins the school climate strikes and inspires an international youth movement against climate change. **Image 10**

2018

International non-violent ecological movement Extinction Rebellion (XR) is founded.

2019

In April, Extinction Rebellion brings London to a standstill by blocking major roads at Oxford Circus, Waterloo Bridge and Parliament Square in the hope of getting the government to declare a climate and ecological emergency. **Image 11**

29 July marks Earth Overshoot Day. By this day humanity has consumed all the regenerative resources for 2019, meaning from the 30 July the population starts to consume more resources than the planet can generate in a year.

2019

The first Indigenous Women's March takes place in Brazil, joining thousands of women under the motto 'Territory: Our Body, Our Spirit'. They denounce the "genocidal policies" of President Jair Bolsonaro, who faces growing criticism over destruction of the Amazon. **Image 12**

2020

World human population is expected to reach near 7.8 billion.

2025

The date set by Copenhagen to become the first carbon-neutral capital city.

2030

According to the UN, global carbon dioxide emissions must be cut by 45% by this date.

2040

50 million people across the globe will be exposed to the effects of increased coastal flooding due to rising sea levels.

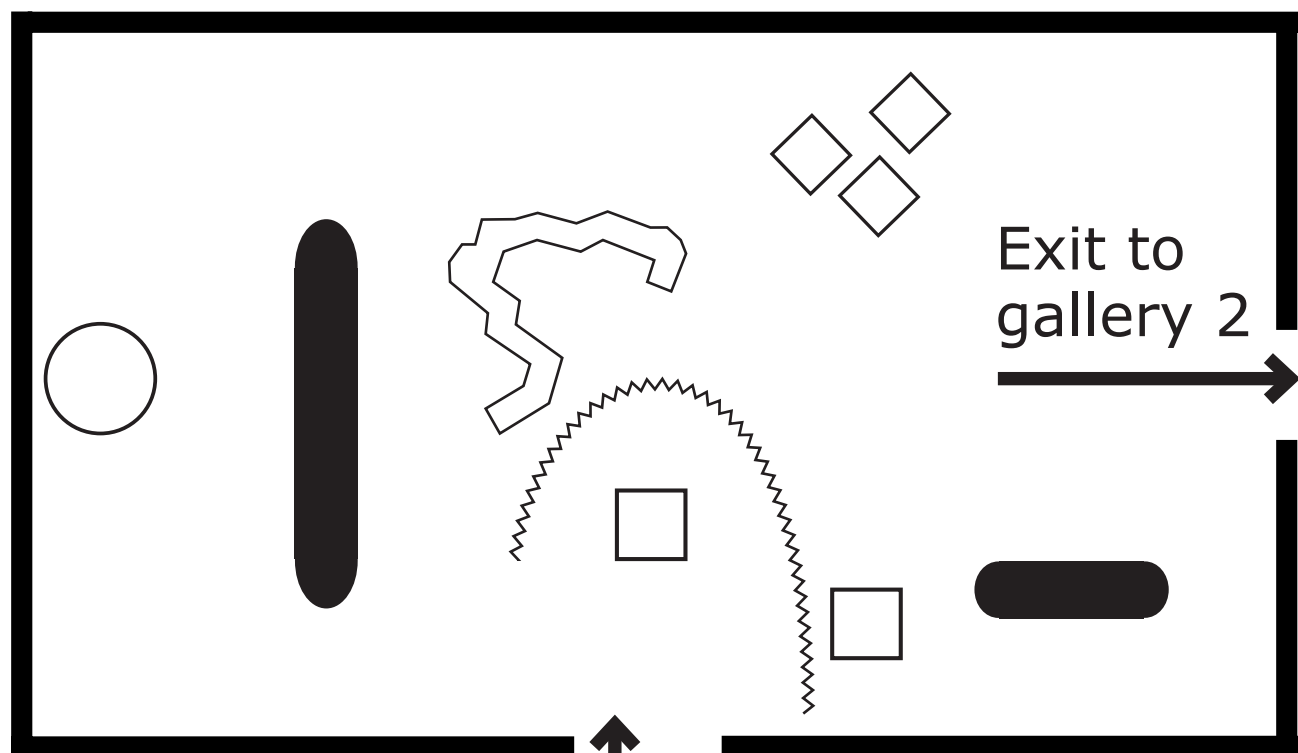
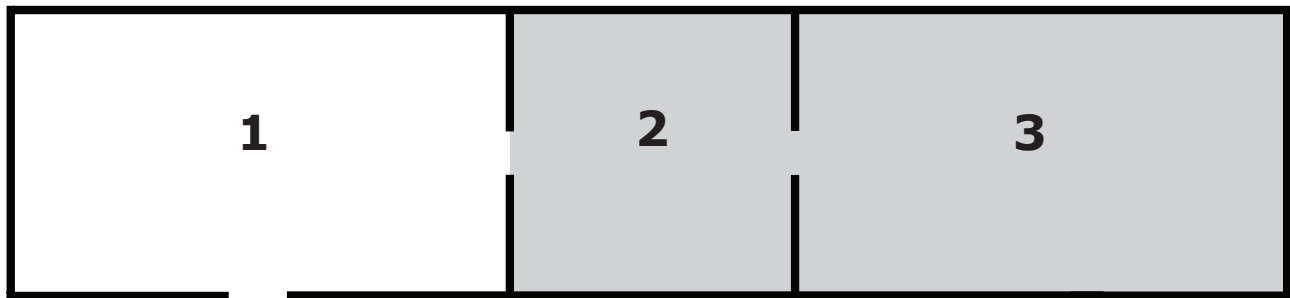
2050

By this date, according to the UN, global carbon dioxide emissions must reach zero to avoid a climate breakdown.

World human population is expected to reach 9.7 billion, 20% higher than today's population.

# Gabrielle Jungels-Winkler Galleries

## You are in gallery 1



Exhibition entrance

○ = film

□ = plinth / display table

● = seating

~~~~~ = screen

# Gallery 1

As the well-known metaphor goes, when a butterfly flaps its wings in one part of the world, it can cause a hurricane in another part of the world.

Ecological formations have a global dimension, and while the causes of climate change are produced in one place, their effects are often felt far away. The dramatic coexistence of sites of cause and effect are kept hidden from the public eye and we are often unaware of the consequences.

The works in this gallery reveal how the environment is being transformed by human activity on a global scale.

They examine some of the many different issues commonly encompassed by the term 'climate change', making visible the underlying political, economic and social complexities behind them.

**Gallery 1 - list of works**  
**(clockwise in order of hang)**

## **HeHe**

### **Domestic catastrophe N°3: La Planète Laboratoire 2018**

Mixed media

Courtesy of the artist

This work makes reference to how human-made pollution is devastating our home, planet Earth.

A globe is suspended in an aquarium filled with water and turns slowly on its axis, gradually becoming wrapped in a murky haze that evokes the natural gases and human-made emissions surrounding the planet.



The rotating Earth is accompanied by a sombre soundtrack, which was playing in the corridor as you entered, of musician Clara Rockmore's haunting theremin performance of Camille Saint-Saëns' 'Le Cygne' (The Swan).

This tragic melody, coupled with the gradual obscuring of the globe, suggests humanity's slow response and apathetic attitude towards the climate-change emergency.

In collaboration with Dr Jean-Marc Chomaz, Ladhyx, École Polytechnique. Commissioned by Cape Farewell & Espace Fondation EDF for the exhibition 'CARBON 12'.

### **Family label for 'Domestic catastrophe N°3'**

In this installation, the artists have put the Earth in a murky tank.

What do you think the green dust could represent?

This video contains occasional scenes of violence that some visitors may find distressing. The suitability of this content for children is at parents' or guardians' discretion.

Please see a member of staff for more information.

## **Ana Vaz and Tristan Bera**

A Film, Reclaimed  
2015

Colour video projection, surround sound  
19min 36sec

Courtesy of the artists

This film introduces the current ecological and terrestrial crisis through an assemblage of found and filmed material.

It explores the frictions that take place between a multitude of species, the natural and built environments they inhabit and the myths that surround them.

The history of the film focuses on the development of the Anthropocene – the current geological age viewed as the period in which human activity has been the dominant influence on climate and the environment – and echoes the political, economic and social crises which have emerged within it.

With the support of Anna Sanders films and Light Cone Distribution.

# Tue Greenfort

Tilapia (series)

2017

Ink on paper

KÖNIG GALERIE

In the 1950s, new invasive and predatory species of tilapia fish were introduced to Lake Victoria in Tanzania to increase fish production. This event caused the almost complete disappearance of endemic tilapia species, and ultimately destroyed the lake's ecological balance.

These black-and-white prints have been produced by covering the bodies of the endangered tilapia fish with ink and imprinting them directly onto rice paper, evoking a living fossil on the brink of extinction.

Supported by the Embassy of Denmark in the UK

## **Family label for 'Tilapia'**

This artist used a traditional Japanese printing technique called 'Gyotaku' (meaning "fish print"). Some Japanese fishermen still use the technique to record the fish they catch. The artist made these prints by printing directly from fish covered in ink.

What other patterns would you be able to make by printing from live animals?

## **Carolina Caycedo**

**Serpent River Book**

**2017**

Offset print, printed canvas hardcover, elastic band

From the series 'Be Dammed', 2013–ongoing

Courtesy of the artist

'Be Dammed' is an ongoing project investigating the effects of large-scale dam building on the natural and social landscape of Latin America.

The project investigates the transition of the ownership of bodies of water from public to private, and studies the effects that infrastructure for extracting resources has on indigenous communities. As part of this project, 'Serpent River Book' collates archival images, maps, poems, lyrics, photographs and texts.

These materials were compiled and produced by the artist while working with Colombian, Brazilian and Mexican communities affected by the industrialisation of river systems.

### **Family label for 'Serpent River Book'**

This is a book made up of stories, song lyrics, maps, poems and photographs of

rivers and dams in South America. A dam turns a river's energy into a renewable source of hydraulic power.

How do you think the people in the book have been affected by the building of dams?

## **Nerea Calvillo /In the Air**

Madrid In the Air: 24 Hours  
2019

Colour video, stereo sound

2min 30sec

Madrid, Santiago and Budapest  
In the Air  
2010

3D-printed resin models, pins, threads, beads

Courtesy of the artist

'In the Air' is a long-term collaborative research project led by architect Nerea Calvillo. The project highlights the contamination of air in cities caused by vehicle engines, industry, factories and farming.

This project makes visible and accessible the microscopic and invisible elements of air to see how they perform and interact within a city.

The often complex air data is collected to map the patterns of pollution, identifying neighbourhoods and times of the day where there are increased levels of different gases and particles. The aim is to create awareness of the uneven distribution of pollution for environmental justice.

'Madrid In the Air: 24 Hours' is a special commission by the Royal Academy of Arts with support from the



Office for Cultural and Scientific Affairs of the Embassy of Spain in London, the Centre of Interdisciplinary Methodologies (University of Warwick) and the Círculo de Bellas Artes, Madrid (Spain). Developed in collaboration with Martin Nadal (programming), Javier Lara (music) and Imagen Subliminal (time-lapse).

'Madrid, Santiago and Budapest In the Air' is a work in collaboration with Martín Nadal (programming), Marina Fernández (models), and produced by LABoral Centro de Arte y Creación Industrial, Gijón (Spain).

# **Olafur Eliasson Hon RA**

## **The Ice Melting Series**

### **2002**

C-prints

Thyssen-Bornemisza Art Contemporary Collection

This series of twenty photographs archive the process of small blocks of glacial ice melting into the terrain in Iceland.

Each image intentionally misrepresents the size of the ice, so it is unclear the time it has taken for the ice to melt, or the scale of the loss. The series draws attention to melting polar ice caps, highlighting the effect that our seemingly small, isolated actions have on the planet.

Supported by the Embassy of Denmark in the UK

### **Family label for 'The Ice Melting Series'**

Glaciers cover about 10% of the world's surface. They are slow-moving rivers of ice and snow that have stayed frozen for centuries. Artist Olafur Eliasson took these photos of small pieces of ice from a glacier melting in Iceland.

If large areas of ice melt, what will happen?

# Virgil Abloh

## Alaska Chair 2018

Polished bronze

Edition of 8 with 4 AP

© Virgil Abloh. Courtesy of Carpenters Workshop  
Gallery c/o Aurelie Julien Collectible

Originally designed as a wooden chair for IKEA, the 'Alaska Chair' is a paradoxical commentary on the effects of our everyday lives and mass-consumption habits on the global rising of sea levels and climate change.

This work is inspired by the concept of acqua alta, an Italian term used to describe regular floods in Venice caused by high tides and warm winds.

The chair is partly submerged by the rising flood waters, with a doorstop wedge symbolically representing the short-term, makeshift solutions we have for tackling climate change.

Yet by casting the work in bronze, a material intended to last, the work reflects on how environmental catastrophe is a tough, long-term problem that is not easily fixed by simple solutions.

## **Unknown Fields**

### **The Breast Milk of the Volcano 2017**

Glass, lithium brine, graphite, aluminium

Colour video, stereo sound

12min

Courtesy of the artists

Over half of the world's reserves of lithium, a key ingredient in the rechargeable batteries in phones, laptops, electric cars and drone technology, is found in the salt flats of the Salar de Uyuni in Bolivia.

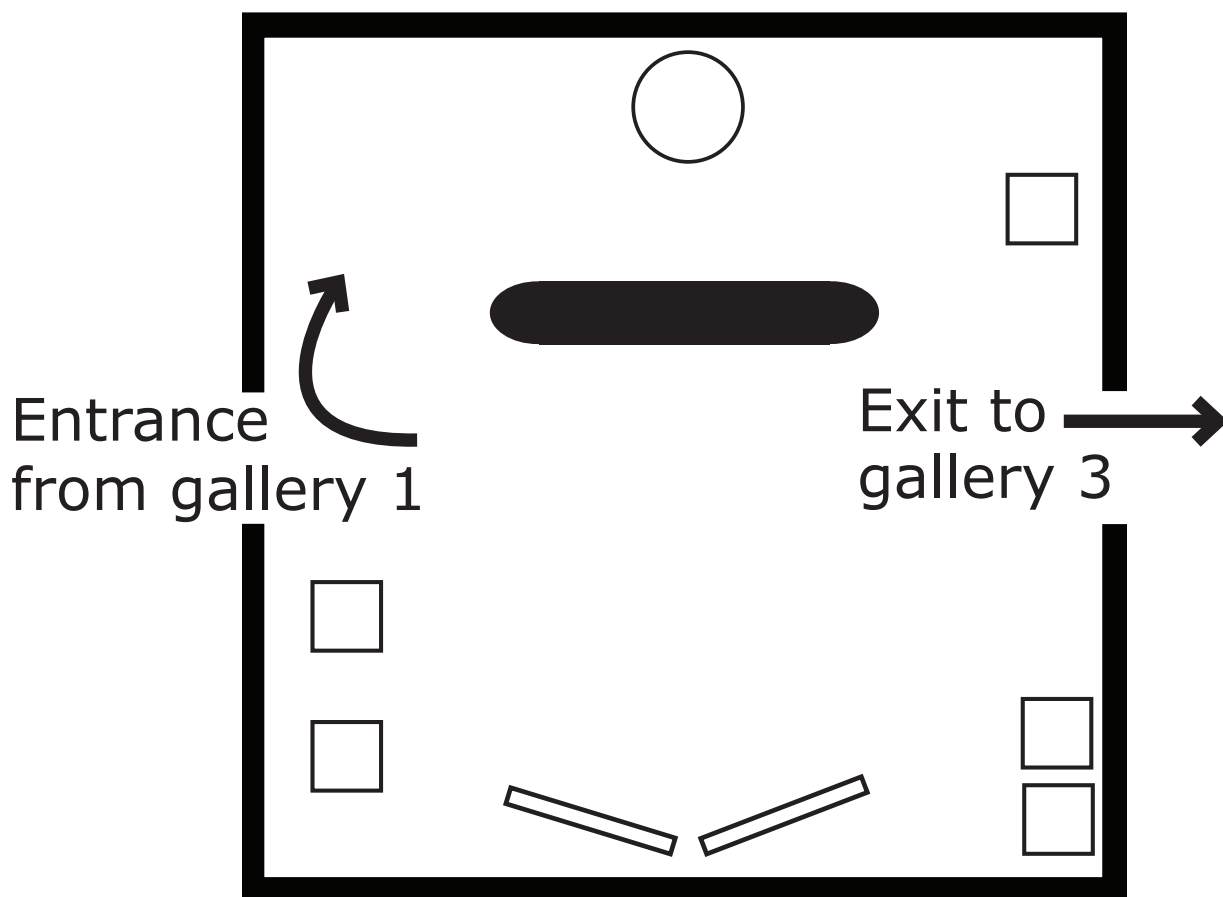
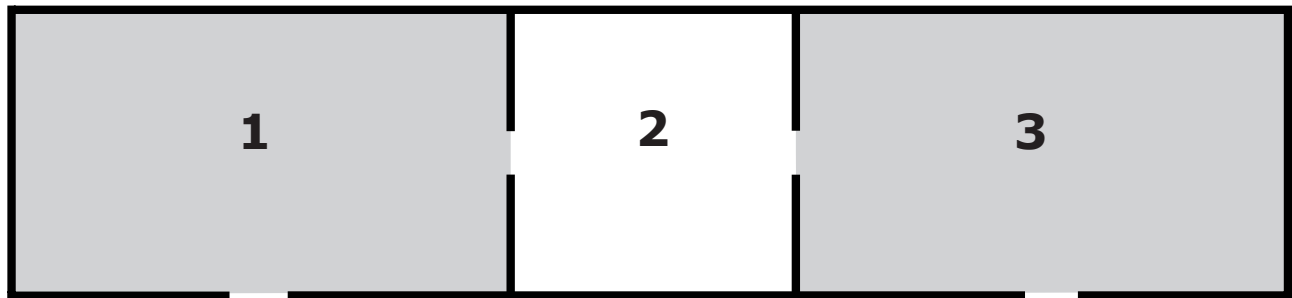
This film poignantly examines how even the cleanest energy utopias can have dramatic consequences in material, resource and economic exploitation.

Accompanying the film is a lithium battery designed by the artists. It refers to an Inca origin myth of the Salar de Uyuni in which the salt flats were formed by the breast milk and tears of a mother volcano mourning the loss of her child.

Fabricated with assistance from Eduardo Andreu González and Aimer Ltd; battery science consultant Donal Finegan; film developed in collaboration with Luca Films.

# Gabrielle Jungels-Winkler Galleries

## You are in gallery 2



○ = film      □ = plinth / display table

● = seating

# Gallery 2

Scientists assert that human activity has increased the rate of extinction to 1,000 times the normal speed. Global warming expected over the next few decades will accelerate progression even further.

This has led biologists to advance the possibility of a new mass extinction taking place, the sixth since the appearance of life on Earth. The last happened 65 million years ago and wiped out dinosaurs and many other forms of life.

Such an event would be catastrophic, but the road leading to it is similarly worrying. As each species becomes extinct, the ecosystems and food chains are altered in unexpected and disturbing ways.

Prospects of extinction add to the unpredictable challenges presented to every species, even one as technologically savvy as ours.

The works in this gallery speculate on alternative futures for human and non-human beings.

They present different scenarios, sometimes with dystopian visions, provoking us to imagine how the lives of animals, plants and humans might be radically transformed by global warming.

**Gallery 2 - list of works**  
**(clockwise in order of hang)**

**Alexandra Daisy**  
**Ginsberg**

**The Substitute**  
**2019**

Colour video projection, surround sound  
6min 18sec

Courtesy of the artist



In March 2018, the last male northern white rhinoceros, known as Sudan, died, leaving only two female northern white rhinoceros remaining on Earth.

The preoccupation with creating new life forms and neglecting existing ones is explored in 'The Substitute', a film that uses rare zoological archive footage as well as experimental data from artificial intelligence company DeepMind to produce a life-size projection of the lost rhino.

The image of the rhino, fluctuating between a pixelated rendering and a lifelike animation, roams around a virtual world, where its behaviour and sounds are replicated using research footage of the last herd.

On the accompanying screen the rhino's repeated path is mapped, reaffirming the species as a digital reimagination and questioning the role that technology might play in recreating extinct animal species.

Commissioned by the Cooper Hewitt Smithsonian Design Museum and Cube Design Museum.

Produced by Alexandra Daisy Ginsberg (Johanna Just, Ness Lafoy, Ioana Man and Ana Maria Nicolaescu).

Visualisation by The Mill (Adam Parry, Art Director; Jarrad Vladich, Executive Producer; Kelly Woodward, Senior Producer; Paul Tempelman, Animation Supervisor; Kieran Jordan, Maxime Cronier, Kevin O'Sullivan and James Hickey, Animators; Roberto Costas, Mark Dooney, Haydn Roff and Ed Thomas, Unreal Developers; Andreas Graiche and Daniel Weiss, Model and Rig).

Sound by Chris Timpson, Aurelia Soundworks.

Special thanks to Andrea Banino, DeepMind, and Dr Richard Policht.

## **Family label for 'The Substitute'**

Using artificial intelligence, the artist made this life-size, moving digital reproduction of the last male white rhino, who died last year. How do you feel about this digital

rhino, now that the real one is extinct?

What other ways are there to remember animals that are extinct?

## **Dunne & Raby**

Foragers

2009

Fibreglass sculptures

Lambda print mounted on aluminium

From the series 'Designs for an Overpopulated Planet'

Courtesy of the artists

Based on the United Nations' prediction that at the current rate of ecological transformations there will not be enough food to feed the planet in 2050, 'Foragers', from the series 'Designs for an Overpopulated Planet', are speculative full-scale models proposing how to radically change the human diet and digestive system to ensure survival.

(continued over)

These devices would allow humans to extract nutritional value from synthetic biology and develop new digestive systems like those of other mammals, birds, fish and insects which are able to digest and process barely edible resources, such as tough roots and plant matter.

### **Family label for 'Foragers'**

Other mammals, birds, fish and insects can digest and process parts of plants that humans can't.

What do you think these different designs might be for?

# **Basim Magdy**

## **Our Prehistoric Fate 2011**

Mixed media

Ed. 3 + PA

Courtesy of the artist and Gypsum Gallery, Cairo

Undermining our certainties about a human-centred future, 'Our Prehistoric Fate' links the fear of a nuclear attack with the fate of species driven to extinction by human actions.

Commissioned for the first Biennial of Contemporary Art in Bosnia-Herzegovina, this work was conceived to be displayed at the preserved nuclear bunker near Sarajevo that belonged to President Tito, the leader of the former Socialist Federal Republic of Yugoslavia.

The two large Duraclear prints, clamped on Yugoslavian military lightboxes, were displayed in the bunker's war-strategy room. The work hints at the possible repetition of a prehistoric mass extinction event that the human species might not survive.

Supported by ProHelvetia and the Swiss Cultural Fund UK.

# **Pinar Yoldas**

## **P-Plastoceptor: Organ for Sensing Plastics 2014**

Mixed media

## **Stomaximus: Digestive Organ for the Plastivore 2013**

Mixed media

From the series *An Ecosystem of Excess*, 2013–17  
Courtesy of the artist

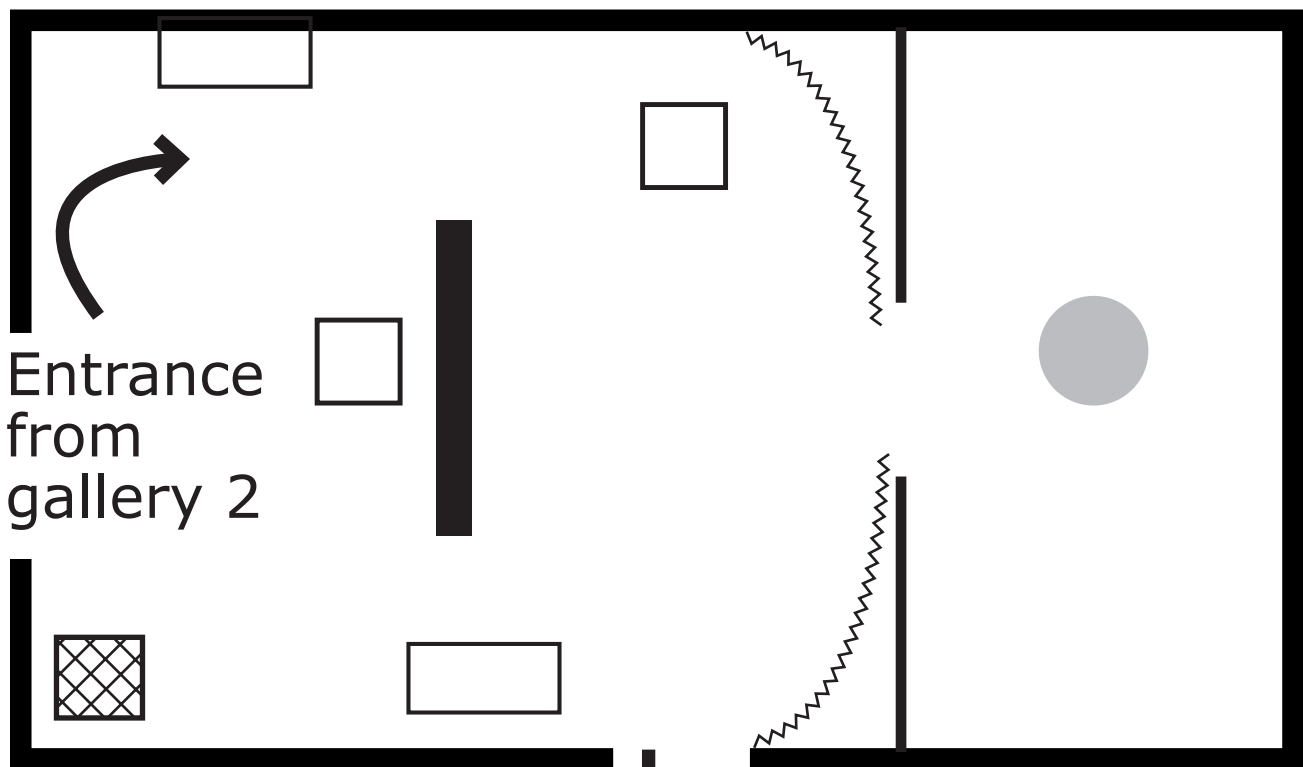
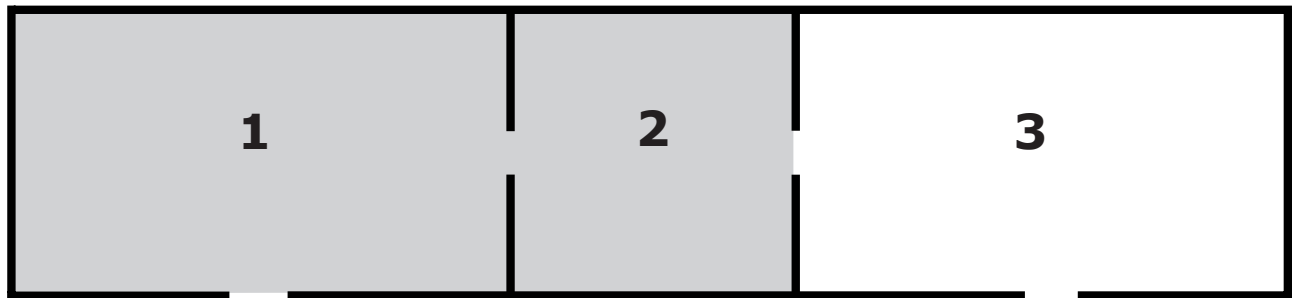
'An Ecosystem of Excess' is a series of works which reimagine a biological future made possible by human-made consumer waste and petrochemical pollution.

Following the 'primordial soup' theory – the hypothesis that life originated from a rich organic solution in the primitive oceans of the Earth – this inorganic waste could form the basis of new life forms developed through the exchange between organic and synthetic matter.


Taking delight in detailing the organs of the invented 'plastivores', which are able to digest petroleum-derived plastic, these works catalogue fictive forms of life existing apart from humanity, in places such as the vast area of the Pacific Trash Vortex, where plastic waste currently accumulates.

# Gabrielle Jungels-Winkler Galleries

## You are in gallery 3



 = plinth / display

 = screen

 = installation

 = showcase



# Gallery 3

The world's human population is expected to grow by 20 per cent over the next three decades to reach 9.7 billion. It seems unavoidable that we will need to cultivate more land to produce more food and build more shelter for an exponentially growing population.

But building and construction, together with farming, are among the most polluting industries today, and play a major role in climate change.

Over the last decades, many environmental regulations have been established to reduce the impact of these industries and there is a general awareness of the necessity to build, farm and consume in more sustainable ways.

However, these measures have proved not to be enough and in order to avoid further damage to nature, we need a renewed creative thinking.

The works in this gallery present alternative ways of intervening in the landscape that go beyond mainstream sustainability strategies.

These interventions propose forging a more empathetic relationship between humans and the natural world, putting nature's needs before our own.

**Gallery 3 - list of works**  
**(clockwise in order of hang)**

## **New-Territories (S/he)**

Pollutive Matter-s  
(three scenarios)  
2019

Video, colour, sound  
6min 29sec

# Sedimentation, the Baïse, France 1997

Reproduction on paper (top, left)

# Acqua Alta 1.0, Aspiration, Venice, Italy 1998

Reproduction on paper (top, right)

From the series 'Pollutive Matter-s'

Courtesy of the architect

'Pollutive Matter-s' is a long-term research project developed between 1997–2004, presenting deceptive architectures that invite a new understanding of the relationship between humans and nature.

The three architecture projects featured in the film – 'Dustyrelief / B-mu', 'Acqua Alta 1.0' and 'Sedimentation' – are intended to make humans aware of their own pollution.

# **New-Territories (S/he)**

Dustyrelief / B-mu, Bangkok,  
Thailand  
2002

Magnets, straw (left)

Wood, paint, metal, metal fibre, steel straw, resin  
(right)

From the series 'Pollutive Matter-s'

Collection Frac Centre-Val de Loire

Bangkok is one of the cities with the highest air-pollution levels in the world. The electrostatic façade system, presented in the model on the left, for this new contemporary art museum is inspired by Marcel Duchamp's work 'Dust Breeding' and designed to absorb the carbon dioxide particles in the air of Bangkok.

The building, shown as a full-model on the right, isn't designed to mitigate or clean

human-made air pollution, but instead to reply and hybridise with it and to continuously evolve both inside and outside with changing pollution conditions.

**Family label for 'Dustyrelief / B-mu, Bangkok, Thailand'**

Bangkok in Thailand is one of the most polluted cities in the world. Architects have created this design for an art museum in the city, around which an electromagnetic exterior attracts dust and carbon dioxide.

How do you think this building might feel to touch, or to walk into?

# Ant Farm

## The Dolphin Embassy 1974–1978

Reproductions on paper

Courtesy of Curtis Schreier

Ant Farm was a multidisciplinary collective in the 1970s whose work critiqued the North American culture of mass media and consumerism. Its unrealised project 'The Dolphin Embassy' is a proposal for a floating communication station used to develop long-term human/dolphin interactions in the wild.

The dual-hulled craft was designed to be a temporary home, laboratory and studio for artists and scientists interested in learning from dolphins. It was intended to be fitted with state-of-the-art technology, including wireless biological sensors and seagoing

computers, which would aid research. This project is an early example of how using transdisciplinary research, a synthesis of art and science, could create a deeper understanding between human and non-human species.

### **Family label for 'The Dolphin Embassy'**

This is a floating communication station based on designs for a dolphin embassy. It was designed to be a home, laboratory and studio for scientists and artists who want to study marine life.

If you were to make a floating island, what materials would you use?

# **WORKac and Ant Farm (Chip Lord & Curtis Schreier)**

## **3.C. City: Climate, Convention, Cruise 2015**

Architecture project

Courtesy of the artists

'3.C. City: Climate, Convention, Cruise' is a speculative design for a floating city inspired by different architectural projects created by collective Ant Farm in the 1970s, including the drawings for 'The Dolphin Embassy' to the left.

The city is designed to facilitate dialogue and debate between humans and other species, blurring the boundaries between ecology and infrastructure, public and



private, the individual and the collective. Unbound by national allegiances, the design includes a vessel with housing, a research lab and an interspecies congress hall.

The programme is completed with greenhouse and garden areas, an algae farm for biofuel production and a water-collection river, all covered by an inflatable wall and solar panel shingles.

## **Installation room**

# **Rimini Protokoll (Helgard Haug, Stefan Kaegi and Daniel Wetzel)**

win > < win

2017

Installation

Courtesy of the artists

'win > < win' is a theatrical installation which presents a dramatic narrative where species compete against each other for the planet's ecosystem.

Developed in collaboration with marine biologists and animal keepers, this disturbing work questions our assumptions about which species are best prepared for the threats of global warming, specifically the rise in temperature and the decrease in oxygen levels in ocean waters.

The work invites participants to enter into a dialogue with other humans and non-human species to build a more empathetic relationship with each other.

'win > < win' is an installation piece commissioned for the exhibition 'After the End of the World' curated by José Luis de Vicente.

Produced by CCCB (Barcelona) in co-production with FACT + BLUECOAT + RIBA North (Liverpool).

Audio Project and synchronisation Andreas Mihan/  
Jost von Harleßem.

Produced at the Royal Academy of Arts with  
KS Objectiv and Project Jellyfish.

**Philippe Rahm  
architectes  
(with mosbach  
paysagiste and Ricky  
Liu & Associates)**

The Meteorological Garden /  
Central Park, Taichung, Taiwan  
2012–2019

Digital prints

# Cold Light Desert Wind Anticyclone Stratus Cloud Moonlight 2019

3D-printed resin models

Courtesy of the architect

Located on the site of a former airport in Taichung, Taiwan, this eco-park aims to enhance the comfort of visitors by naturally strengthening micro-climates that are cooler, less humid or less polluted.

The continuous, two-kilometre-long landscape features twelve sun-powered pavilions, each dedicated to one of the twelve senses identified by the philosopher Rudolf Steiner: touch, life, movement, balance, smell, taste, sight, warmth, hearing, landscape, concept and ego.

Sensors are placed every 50 metres to measure air temperature, sun, wind, humidity and air-pollution levels in real time.

This data is used to generate a map of the park that is accessible on smartphones, revealing a usually invisible landscape of climatic conditions. It allows visitors to adapt their route to maximise their well-being.

Supported by ProHelvetia and the Swiss Cultural Fund UK.

# **Futurefarmers**

## **Soil Procession**

**2015**

Colour video, stereo sound

5min 10sec

# Declaration of Land Use 2015

Reproduction on paper, soil

## Part of 'Seed Journey', 2015–ongoing

Courtesy of the artists

'Soil Procession' follows a procession of farmers carrying soil from their farms in Norway through the city of Oslo to build the foundations of Losæter, a cultural institution dedicated to art and urban food production.

Using tractors, horses, wagons, wheelbarrows, sheep, boats, backpacks and bikes, the farmers' soil offerings, collected from 50 farms across the country, were transported, laid out upon the site and the 'Declaration of Land Use' was signed.

The procession transformed an underused plot of land into a permanent site for urban ecology, working with local people to develop an organic process in the development of land usage and social relations.

## **Andrés Jaque/Office for Political Innovation, with Patrick Craine**

Island House in Laguna  
Grande, Corpus Christi, Texas  
2015–ongoing

Architecture project

Courtesy of the architects

'Island House' is a residential project for the 50-island archipelago of Laguna Grande, off the south coast of Texas.

It reconsiders a habitat where multiple species have become endangered due to the increase in the acidity of the lagoon's water and the pollution from nearby oil-extraction platforms.

The proposed structure collects and preserves rainwater and, through the mediation of sensors on the ground, sprays water to dilute toxicity and combat drought.

'Island House in Laguna Grande' is not specifically designed for humans but instead as an architecture that could empower the environmental diversity of one of the biggest wild island-barriers of the world.

Supported by the Office for Cultural and Scientific Affairs of the Embassy of Spain in London.



# **SKREI**

## **Biogas Power Plant 2017**

Steel, earthwork, marine plywood

## **Body I–II 2017**

Clay on paper (right), graphite, ink on paper (left)

Courtesy of the artists

According to the London Assembly, one year's worth of the average urban borough's domestic food waste could generate enough electricity to power a local primary school for over 10 years.

'Biogas Power Plant' is a prototype for an individual biogas production unit which could use domestic waste to create and store energy to make houses self-sufficient.

The unit is designed to be connected to the National Grid yet able to operate without relying on an external power supply or waste-treatment systems.

'Body I' presents a human body in the foetal position, evoking the individual's capacity for waste generation. 'Body II' presents a cross-section of a fully equipped farming facility where the biogas power plant, featured at the bottom of the drawing, could be installed to support a large-scale building.

# **Studio Malka Architecture**

## **The Green Machine 2014**

Architecture project

Courtesy of the architects

'The Green Machine' is a mobile structure intended to regenerate and fertilise the ground of the Sahara desert, one of the world's most inhospitable climates.

Resembling an oil platform that has been made obsolete by dried-up seas, the project is a self-sufficient urban oasis able both to exploit the rich resources of the desert and to provide food, water, housing and energy for a local community.

This concept reassembles available technologies to generate a structure that could produce 20 million tonnes of crops each year in a hostile environment.

Solar towers, wind turbines and balloons that capture water through condensation come together with the inventive use of modified caterpillar treads that plough, water and sow the soil as the autonomous structure slowly moves across the land.

## **Family label for 'The Green Machine'**

This architect is responding to a potential future where we have run out of fossil fuels and the Earth has heated up, drying out the soil and making it harder to grow crops.

What do you think 'The Green Machine' is for?

## **Exit corridor**

## **Family label**

Did you pick up an Art Detective sketchbook? Draw on the back page and then show off your drawing here!

# #EcoVisionaries

## Explore More Online

Find related events, articles and information about our sustainability practices and more on our website.

[roy.ac/eco-visionaries](http://roy.ac/eco-visionaries)

## Enjoy Free Entry To All Exhibitions

Become a Friend today and redeem the cost of your exhibition tickets.\* Visit the Friends Desk to find out more.

\*Terms and conditions apply. [roy.ac/friendsterms](http://roy.ac/friendsterms)

## Architecture Studio

Algae Platform [London]

20 November 2019–10 February 2020

Visit the Architecture Studio, located on this floor, to discover the research led by designer Samuel Iliffe about the potentials of London-grown algae as a bio-sourced material, and its application for architectural design.

A project in partnership with Atelier Luma, the design research programme of Luma Arles.

## Workshops and Tours

### Teacher Studios

Friday 29 November, 5.45–8.30pm

A workshop for teachers led by Grace Adam to explore ideas around sustainability and the environmental impact of our lifestyles.

### BSL Tour of Eco-Visionaries Tour

Saturday 14 December 2019, 2pm

Join a tour of the exhibition in British Sign Language (BSL).

## Family Studio: Climate Champions

Sunday 19 January, 11am–3pm

Drop in to different activities exploring what role art and design can play in responding to the climate emergency.

## Family Workshop for Children with SEND: Back to Nature

Sunday 2 February, 11am–1pm

Join us as a family to make miniature nature habitats from foraged materials, inspired by the exhibition.

## Events and Talks

### Curator's Introduction

Friday 29 November, 11am–12pm

Gonzalo Herrero Delicado, co-curator of the exhibition, speaks on how creative practitioners in architecture, art and design are responding to the current ecological emergency.

(continued over)

## Oceans in Crisis

Friday 6 December, 6.30–8pm

A panel discussion led by Territorial Agency to put forward a declaration on how we can transform the state of our oceans.

## Designing from a Depleted World

Monday 27 January, 6.30–8pm

Architects, artists and designers join together to make a statement on the impact of human action on Earth's depleting resources.

## Air Pollution in Cities

Monday 17 February, 6.30–8pm

Join architects, activists and scientists as they present declarations on how to make the deteriorating state of the air in our cities a concern of the many instead of the few.

## Confronting a Planet in a State of Emergency: Eco-Visionaries Symposium

Saturday 22 February, 10am–6pm



Presentations of new research helping us understand the complexity of current ecological changes and proposals for inventive and critical spatial solutions on how to address them.

Find out more and book your tickets at [roy.ac/eco-visionaries](http://roy.ac/eco-visionaries)

## **A Sustainable Exhibition Practice**

This exhibition was designed by Delvendahl Martin Architects and the graphic design studio Daly & Lyon, who followed a sustainability strategy to reduce the exhibition's carbon footprint and minimise the amount of waste it generates.

The approach was to build little from scratch and make use of existing resources and reclaimed materials as much as possible, with free-standing plinths and furniture salvaged from past exhibitions.

The partition screens are made from old promotional exhibition banners and create a new display which is modular, efficient and cost-effective. The design avoids single-use plastics in favour of sustainable and, where possible, recycled materials, such as plywood, paper and card, chosen for their low environmental impact.

The exhibition graphics use paper and paper-derived substrates in the standard sizes offered by suppliers as a single elemental material to eliminate any need for bespoke production.

The substrates are made from 100% recyclable post-consumer waste, and are printed with vegetable-based inks, minimising ink coverage wherever possible. All materials are sourced from local suppliers, and the printing is carried out locally.

# Want to Know More About the Jellyfish?

Steps have been taken by the Royal Academy of Arts, with advice and assistance from marine biologists Project Jellyfish, to ensure the greatest care for the jellyfish included in Rimini Protokoll's installation 'win > < win'.

The jellyfish in the display are moon jellyfish (*Aurelia aurita*). They are one of the most common jellyfish species and can be found worldwide.

This species lives for less than a year in the harsh environments of the wild, but they can live up to one year in captivity. These jellyfish have been raised in the UK by experienced breeders.

Project Jellyfish perform a daily maintenance routine for the jellyfish. Each day they monitor the water parameters, clean the tank, carry out maintenance on the tank's filtration system, check the health of the jellyfish and feed them with high-quality brine shrimp (*Artemia nauplii*).

'Eco-Visionaries' is a project initiated by Fundação EDP/MAAT (Lisbon, Portugal), Bildmuseet (Umeå, Sweden), HeK (Basel, Switzerland) and LABoral (Gijón, Spain), in collaboration with the Royal Academy of Arts (London, UK) and Matadero Madrid (Madrid, Spain).

# Curators

Gonzalo Herrero Delicado

Mariana Pestana

Pedro Gadanho

assisted by

Rose Thompson

# Exhibition Management

Rebecca England

assisted by

Belén Lasheras Díaz

Rebecca Bailey

# Rights and Reproduction

Susana Vázquez Fernández

# Design

Delvendahl Martin Architects

# Graphics

Daly & Lyon

# Lighting

Lightwaves

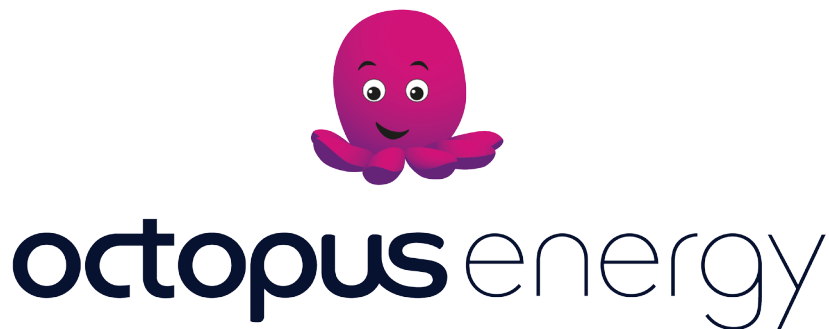
# Audio-Visual Installation

KS Objectiv

# Build

Exib Ltd

Lead Supporter



Supported by

swiss arts council

**prohelvetia**

The International Patrons of  
the Royal Academy of Arts

Scott and Laura Malkin

Additional Support by

Office for Cultural and Scientific Affairs  
of the Embassy of Spain in London

Swiss Cultural Fund UK

Embassy of Denmark in the UK

# Your feedback, please

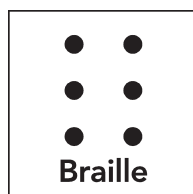
As we are committed to access for all, we would like your feedback on our large-print provision. Feedback forms are available from both Information Desks on the ground floor.

We also offer one-to-one audio descriptive tours of the exhibitions with trained volunteer audio describers.

Wheelchair users can also benefit from our volunteers, who can assist with taking you around the galleries so you can enjoy our exhibitions at your leisure. With prior notice we can arrange these at a time that fits in with your schedule.

For more information please contact the Access team at [access@royalacademy.org.uk](mailto:access@royalacademy.org.uk)

Thank you.



**InTouch**  **at the RA**

Typography & layout: Portugal Prints; Brent, Wandsworth and Westminster Mind [www.bwwmind.org.uk](http://www.bwwmind.org.uk)

© Copyright Royal Academy of Arts, London, 2019



