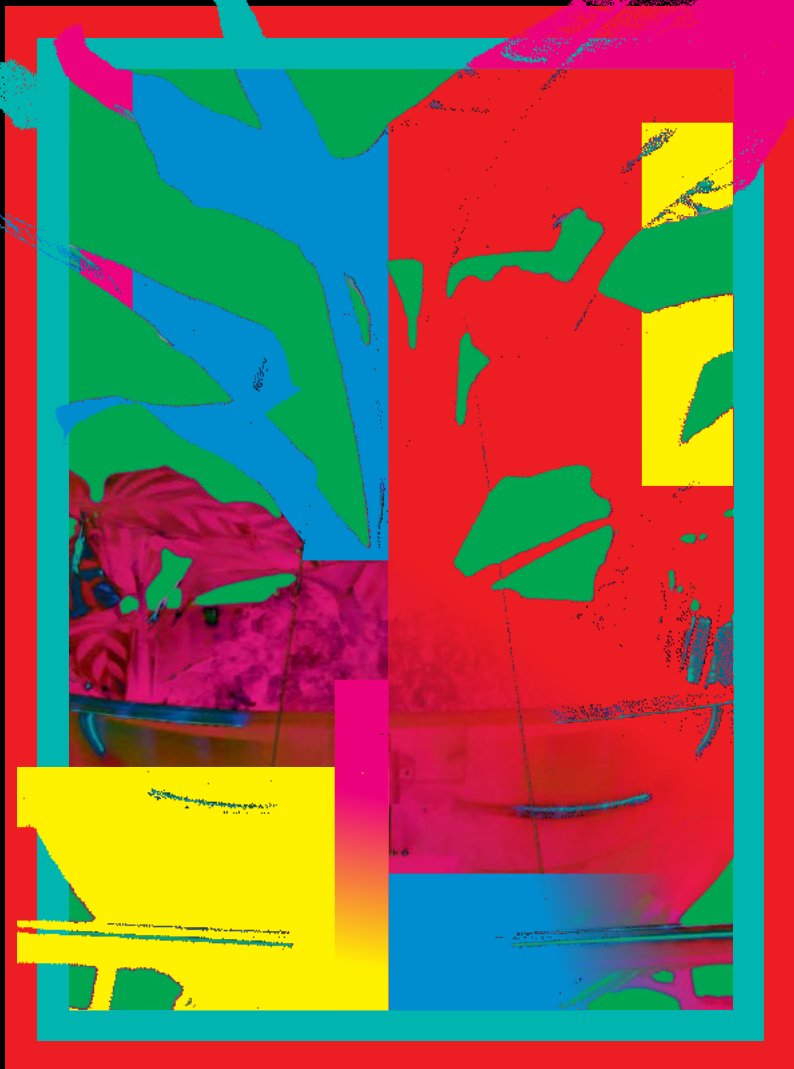


EN

EARTHBOUND IN DIALOGUE WITH NATURE

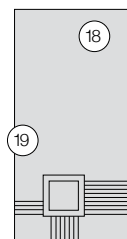
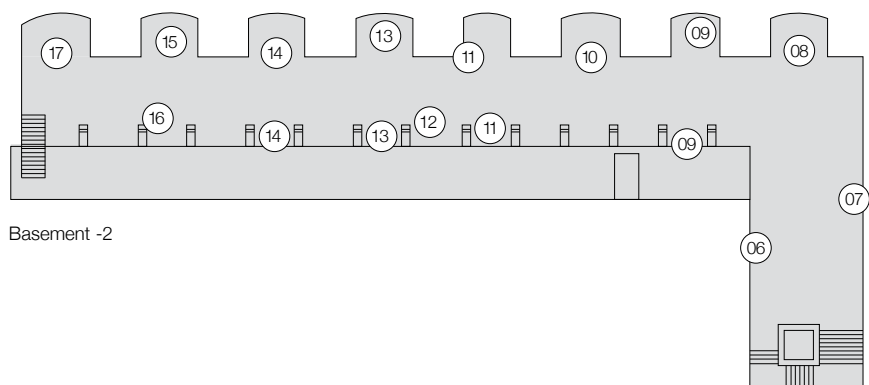
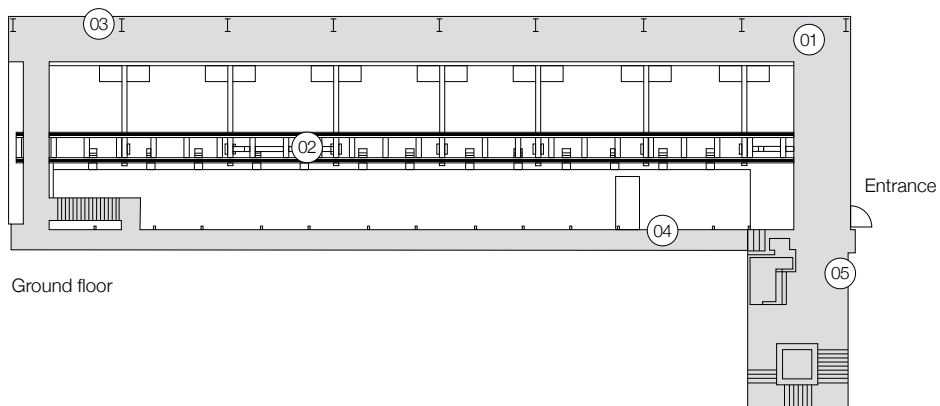
MÖLLEREI / ESCH-BELVAL

04.06. – 14.08.2022



E22

ESCH-SUR-ALZETTE
EUROPEAN CAPITAL
OF CULTURE



EARTHBOUND

IN DIALOGUE WITH NATURE

Curators: Sabine Himmelsbach and Boris Magrini
with the support of Yulia Fisch

We are confronted almost daily by dramatic images of extreme weather phenomena such as floods, hurricanes, and forest fires. Our oceans are littered with accumulated plastic waste. The biodiversity of our planet is diminishing as a wide variety of species become extinct. As climate change intensifies, these are among the many serious issues that demand solutions. It is a fact that these problems are largely man-made, and that human activity has a major impact on biological, geological, and atmospheric processes on Earth.

The exhibition *Earthbound – In Dialogue with Nature* presents 19 artworks by internationally renowned artists reflecting on urgent environmental themes, focusing on the complex relationship between humans and their ecosystems. The works on view span from tentative blueprints to alternative models for a more sustainable coexistence with our environment. They also investigate the use of digital tools in the sustainable treatment of natural resources.

Digitalisation is affecting all areas of life, from economic and cultural production to the private sphere. This raises the question of how digital tools can be applied to advance a sustainable use of our resources. What role can technology take in fostering a biocentric worldview and true coexistence between humans, the ecosystem, and all other species? Accordingly, artistic practices employing media, technologies, and technoscientific methods stand at the centre of *Earthbound – In Dialogue with Nature*. The artists' creative application of digital media and new technologies – from artificial intelligence and virtual reality to interactive and immersive installations, multimedia sculptures, and video installations – invites the audience to experience and engage. Together, these works challenge the notion that humans are at the centre of the universe, encouraging us to surrender our egocentric perspective and rediscover our relationship with nature on this planet.

Many of the works on view were created in interdisciplinary collaborations between artists and scientists from a wide range of fields including geology, meteorology, and oceanography. Technology can often appear detached. Yet, while the artists participating in this exhibition do not advocate that technological solutions alone can guarantee a better future, or save the planet, they all employ technology to enlighten. This enables us to become aware of otherwise invisible ecological processes, therefore contributing to better coexistence with our environment.

The exhibition is produced by HEK (House of Electronic Arts) in Basel. It is curated by Sabine Himmelsbach (Director) and Boris Magrini (Head of Programme). In 2018, HEK realised *Eco-Visionaries*, an exhibition that looked at ecological change via the role of art and the influence of media technologies on the discourses between science, technology, and eco-activism. This exhibition for Esch2022 is a continuation of the debate, offering new food for thought on one of the central issues of our time. This is reflected in the title of the exhibition: *Earthbound – In Dialogue with Nature*. We have only this one Earth and urgently need to find a balanced coexistence here, because escape to other planets is not an option. Where better to stage our connection with Earth than in the rooms of a

former warehouse for raw geological materials in the former Esch-Belval steel plant?

01

Refik Anadol

Quantum Memories – Probability – Square

2021

AI Data Sculpture, Video loop, 18 min.

The morphing images of nature in *Quantum Memories – Probability – Square* by Refik Anadol remind us of familiar landscapes before dissolving into blurred abstract patterns. The work is generated by an artificial intelligence, based on the artist's research into digital representations of nature generated through the learned memories of algorithms. The "painted" digital landscapes that unfold in the video are the result of machine learning processes informed by existing data sets of real places. The artist has developed Generative Adversarial Networks in his studio, feeding these so-called GANs 300 million photographs of forests, clouds, mushrooms, and flowers. Using a qualitative evaluation of this data, the programme derived shapes, patterns, and pigments from nature to render an imaginary three-dimensional universe. What we see is the illusion of a landscape or planet, created by machine vision. The immersive video installation captures the ways that humans and technology use digital instruments to commemorate and reproduce nature. In a world

that is continuously threatened by climate change, the landscapes presented in Anadol's work may come to represent our only remaining memories of nature.

Refik Anadol (TK) is one of the pioneers of data aesthetics and a prominent young media artist. His work explores the relationships between human perception, machine creation, and expanded experience of nature through the use of technology. Partnering with global companies like Microsoft, Google, Intel, and IBM, Anadol uses cutting-edge technologies to explore what it means to be human in the era of artificial intelligence. His works include site-specific, three-dimensional data sculptures, audio and video installations, performances, and videos in physical and virtual worlds. Anadol has received international recognition with numerous exhibitions at international museums. Awards for his work include Google's Artists + Machine Intelligence Artist Residency. Anadol currently resides in Los Angeles.

02

Sabrina Ratté

Floralia I – IV

2020

3D-Animation, 4 Videos, 4 min.

Floralia is a four-channel video installation depicting a possible future in which plants that have become extinct are preserved virtually in digital archives. Four different plants, represented in their original habitats, appear as digitised objects in three dimensions and are stored in virtual rooms appearing as semi-transparent cubes. As the camera pans around

Persijn Broersen & Margit Lukács

Bark with a Trace

2022

Light-boxes, Video, 4K, 7 min.

In *Bark with a Trace*, the artist duo of Persijn Broersen and Margit Lukács examine the role photography plays in constructing our perception of nature in the digital age. Central to the work is a piece of bark that the artists took from an ash tree in Poland's Białowieża Forest – a heavily contested area that is the last of the old-growth forests that used to cover much of Europe. Removed from its original habitat many years ago, the parched patch of bark still bears the marks of its history engraved on its surface; an intricate network of ancient fungi, moss, lichens, and trees. Broersen and Lukács made an extremely close reading of the bark with sensitive photographic equipment, capturing the finest details. Then they digitally combined hundreds of different photographs of the bark into a single image, presented here as a new territory, an unknown terrain. What is shown is a surface that is larger than the eye would normally perceive, but its depths remain impenetrable. The accompanying soundtrack is based on traditional Eastern European and Jewish melodies of the region, in which the spiritual transcends the material and physical world. The music reminds us of

the plants, they begin to fracture, revealing details at different points of view. The digital decomposition of the plants is reminiscent of computer graphic errors, suggesting that these fractures are the result of interference from the plants' own, still persistent, memories. Inspired by visionary science fiction novels, research developments in the field of artificial intelligence, as well as critical observations on post-humanist studies, Ratté's work provokes reflections on the possible evolution of humanity and the preservation of plant and species diversity. This work questions whether the beauty and detail of information captured by digitisation, can sufficiently compensate for the possible extinction of plants.

Sabrina Ratté's (CA) practice is located between abstraction and figuration, centring around various forms of digital imagery including video, animation, installation, sculpture, audio-visual performance, print, and virtual reality. Her interdisciplinary work mixes analogue technologies, photography, and 3D animation to investigate the psychological influences of architecture and digital environments on our perception of reality, as well as our relationship with virtuality. Her work has been exhibited internationally and she has been twice shortlisted for the Sobey Art Award (2019 and 2020). Ratté lives and works between Montreal and Marseille.

sounds we have become acquainted with through a century of science fiction films in which people try to project and tame the unknown within the framework of their knowledge. Amplified or reduced to a meticulous mapping of its almost boundless surface, the artists present us with a new construction of nature, which maintains its roots in the earth beneath our feet.

Persijn Broersen and Margit Lukács (NL)

employ a variety of media including video, animation, sculpture, graphics, and spatial installations. Their work traces the origins of contemporary visual culture, revealing how reality, (mass) media, and fiction are deeply enmeshed in contemporary society. Their practice contemplates questions of perception, exploring in remarkable depth how digital interfaces relate to surfaces found in nature. Both artists studied at the Sandberg Institute and the Rijksakademie in Amsterdam. Their works have been exhibited at renowned institutions and organisations worldwide and their videos have been presented at numerous film festivals. Persijn Broersen and Margit Lukács live and work in Amsterdam.

04

Scenocosme

Grégory Lasserre & Anaïs met den Ancxt

Akousmaflores

2007

Plants, computer, interactive device,
sound system, variable dimensions

Akousmaflores is an installation consisting of a group of suspended plants that visitors are invited to touch. As soon as the spectators makes contact, the plants seem to wake up. They then respond to the

intensity of the spectators' touch or presence, producing a sound interaction that fluctuates in tone and timbre. The human body is charged with static electricity, while plants are sensitive to various flows of energy. Responding to human touch with vegetal singing, the plants signal their presence and their responsiveness to our behaviour. With this work, the artist duo Scenocosme intertwines the worlds of nature, technology, and human beings in an installation that mixes elements of fantasy with science. It also makes perceptible rarely perceived electromagnetic phenomena, demonstrating how fundamental our relationship with our environment is, and that it is alive to our presence. The artists encourage us to think about our invisible relationship with other living beings, inviting us to take care of the species around us.

Scenocosme (FR) is an artist duo of Grégory Lasserre and Anaïs met den Ancxt. Together they create digital art, interactive installations, sound art, and collective performances. Their work results from experiments with the hybridization of technology and the living world, whose intersections drive them to invent sensitive and poetic languages. Most of their interactive artworks focus on the sensory encounter between the human body and its environment. They have exhibited in numerous museums, contemporary art centres and festivals around the world. Scenocosme is based in Lyon.

05

Marc Lee

Used to Be My Home Too

2021

Net-based video installation, endless

The title of this work by Marc Lee takes the perspective of extinct animal species in relation to their former environments, which have become subject to human cultivation. For his net-based installation, Lee uses live data from the online project iNaturalist, which publishes images of flora and fauna taken by naturalists and private individuals around the globe. By means of the images' geolocation data, these live images and observations appear at their real-time locations on Google Earth and are linked to the Red List (RedList.org) of endangered species. With each post, the locations of new observations are displayed live on Google Earth and enhanced with related information about extinct or endangered animal species. Instead of idyllic nesting sites and habitats, viewers are faced with asphalt deserts or natural reservoirs in obvious decline. The work is a homage to the biodiversity of our planet and illustrates how it is threatened by human activity.

Marc Lee (CH) explores how information technologies influence our understanding of

the world and thus permanently change our behaviour. He investigates the effects of the Internet's emergence and the later development of social networks in terms of their creative, cultural, social, ecological, and political impact. Lee creates network-based immersive and interactive installations, which allow visitors to literally dive into the contemporary flood of information. To do this, he employs a wide variety of media and formats: video, augmented reality, virtual reality, and mobile apps. His works have been shown in solo and group exhibitions internationally and he has been awarded numerous prizes, including the Pax Art Award for Swiss media art 2021. Marc Lee lives and works near Zurich.

06

María Castellanos & Alberto Valverde

Beyond Human Perception

2020

Multi-media installation with plants and sensors, 2 videos, HD 2K, 32:54 min.

Beyond Human Perception explores the "secret language of plants" and allows us a glimpse at how we might enter into communication with them. The installation looks at the reactions of human beings and plants to the stimuli of live music. Using EEG technology, human brain activity is measured and compared to electrical oscillations in plants, which is measured with special sensors developed by the artists. The two data sets are compared using the Fourier transform method. The synchronised videos render a visible result: one shows a recording of a concert held for an audience

of plants and humans, while the other illustrates the corresponding response patterns in the form of data visualisation and graphic simulation. Through this direct comparison, María Castellanos and Alberto Valverde bring humans closer to the plant world and provide an understanding of how similarly both react to their common environment.

María Castellanos and Alberto Valverde (ES) have been working together under the name uh513 since 2009. Castellanos is an artist and holds a PhD in Fine Arts from the University of Vigo, Spain. Valverde is an artist and technologist with experience in systems design, interactive environments, and robotics. Their collaborative research focuses on hybridisations between cyborgs and “wearables” as a paradigm through which to expand human sensory capabilities and to create complex systems of communication and understanding between humans and plants. Their work has been shown in a number of exhibitions and they have received several awards for their work, including the recent EU Horizon 2020 “Vertigo Starts” prize. María Castellanos and Alberto Valverde live in Oslo.

07

Marcus Maeder

Edaphon Braggio

2019

Audio Installation

The black wooden plate outlines a map of the natural area in the municipality of Braggio, in the Calanca valley within the Canton of Grisons in Switzerland. Howling, rumbling, and humming sounds fill the space and bring the plate

to resonate. Marcus Maeder's installation is a part of the artist's long-term scientific and artistic research into the acoustic realm of soil biodiversity. “Edaphon” is a word coined by Austrian microbiologist Raoul Heinrich Francé for the totality of underground life. Maeder used a custom-made contact microphone to capture the acoustic lives of soil inhabitants. Ants, springtails, spiders, grasshoppers, and other species use the vibrations and friction produced by their bodies to communicate and navigate acoustically. The resulting sounds vary from soil to soil, so a forest sounds different from a meadow, while agricultural and highly cultivated areas are silent. Species leave these areas because of the impact of biochemicals and agricultural instruments. Maeder made this work in a former industrial location to explore the potential revitalisation of the area.

Marcus Maeder (CH) is an artist, researcher, and composer. In his artistic and scientific work, he investigates areas, communities, and organisms under the influence of climate change, as materialised in ecological soundscapes and acoustics. He is particularly interested in making natural phenomena artistically tangible. He is currently pursuing a PhD in Environmental Systems Science at ETH, Zurich. Maeder manages the music label domizil and works as a research assistant at the Institute for Computer Music and Sound Technology at the Zurich University of the Arts and at the Swiss Federal Institute for Forest, Snow and Landscape Research. His work has been exhibited internationally, including a presentation at the 2015 UN Climate Change Conference. Marcus Maeder lives and works in Zurich.

Alexandra Daisy Ginsberg

The Substitute

2019

Video, 6:18 min.

The Substitute explores the striking paradox of our preoccupation with creating new life forms while neglecting those that already exist. Alexandra Daisy Ginsberg's work brings the virtually extinct northern white rhinoceros back to life digitally, thanks to advances in artificial intelligence. A life-size projection shows the artificial rhino finding its bearings in a virtual space. It becomes more "real" as it grows accustomed to its new digital environment, evolving from a pixelated distortion to a lifelike rendering, pointing to the ways that artificial intelligence learns from its environment. Behaviours and sounds stem from recordings of the rare sightings of the rhino; yet, in the absence of its natural surroundings, the rhino remains conspicuously artificial. Ginsberg's video installation looks at our trust in biotechnology to preserve or return extinct species. It also questions whether humanity would be able to protect a resurrected rhinoceros, considering our previous destruction of an entire species. Or is this artificial rhino a substitute for the real thing?

Alexandra Daisy Ginsberg (UK) explores

our fraught relationships with nature and technology. Her work investigates themes as diverse as artificial intelligence, synthetic biology, conservation, biodiversity, evolution, and the human drive to "improve" the world. She studied architecture at the University of Cambridge, was a visiting scholar at Harvard University, and received her MA in Design Interactions from the Royal College of Art in London, where she completed a practical PhD in 2017. She has received numerous awards for her work, including the World Technology Award for Design (2011) and the Dezeen Changemaker Award (2019). Her work has been exhibited in museums worldwide. Alexandra Daisy Ginsberg lives and works in London.

Donatien Aubert

Les jardins cybernétiques

2020

Video, HD, 16:9, stereo sound, 17:21 min.

Donatien Aubert

Chrysalide n°3

2020

Interactive sound and light device (including ultrasonic sensors, programmable and horticultural LEDs, two Arduino microcontrollers, two Raspberry Pi microcomputers and two pairs of speakers), mirror-polished stainless steel tubes and half-sphere, laser sintered 3D printed nodes, PMMA plates, aluminium box, clay balls, soil, plants

The digital animation video *Les jardins cybernétiques* exposes the origins and questions the consequences of a vision of nature that is reduced to computational models. The origins of this approach go back to cybernetics, a study of

Tega Brain

Deep Swamp

2018

Glass tanks, wetlands, plumbing, shade balls, electronics, custom software, 3 channel sound

The *Deep Swamp* installation addresses the problem of systemic approaches to optimising natural resources through the use of artificial intelligence. Three glass tanks house semi-flooded environments occupied by swamp lifeforms that are monitored by cameras. Three artificial intelligence programmes – named Nicholas, Hans, and Harrison – observe each of the environments in real-time and alter their conditions by modifying light, water flow, fog, and nutrients. The three software agents have different goals, which have been developed through deep learning technology and the analysis of thousands of images of wetlands found online. Harrison works to create a wetland that closely replicates a real environment, while Hans aims to produce a work of art, and Nicholas seeks to produce a composition that will attract a viewer's attention. In this work, Tega Brain emphasises how artificial intelligence is subject to manipulation and can provide different results depending on objectives. At the same time, the artist does not deny the benefits of

the interrelation between natural and technological systems. According to Donatien Aubert, the reduction of the world and natural phenomena to measurable, quantifiable model elements that are constructed according to artificially reproducible units, has led to the development of architectural and urban planning projects and thus the human exploitation of natural resources at the expense of the ecosystem. *Chrysalide n°3*, an installation accompanying the video, exemplifies the reduction of nature to its utilitarian value by simulating the cultivation of plants in isolated, automated cells. Aubert's work is an invitation to consider a less utilitarian approach to both plant and animal life, calling on humans to inhabit the planet with more care.

Donatien Aubert (FR) is an artist, researcher, and author. His theoretical and artistic work examines contemporary transformations caused by mankind. He is particularly interested in the legacy of cybernetic theories and their resilience in movements such as ecology and transhumanism. His mixed-media works, spanning video and installation, are based on scientific research that has led him to collaborate with several laboratories. Aubert graduated from the École Nationale Supérieure d'Arts and holds a PhD in comparative literature from Sorbonne University, Paris. Aubert was awarded the CNAP photographic commission Image 3.0 in 2020. His work has been exhibited internationally and at several biennials. Donatien Aubert lives and works in Paris.

digital technologies when they are used in a non-reductionist way to address ecological problems and to develop a more comprehensive view of the planet and its living forms.

Tega Brain (AU) is an artist, environmental engineer, and researcher working at the intersection of art, ecology, and technology. Guided by the question how technology shapes ecology, she investigates environmental issues, data systems, and infrastructures. Her work is characterised by dysfunctional devices, eccentric infrastructures, and experimental information systems. She creates wireless networks coupled to natural phenomena, systems for obfuscating personal data, and an online smell-based dating service. Brain is an Assistant Professor of Integrated Digital Media at New York University and has given numerous talks and workshops at museums and festivals. Her work has been exhibited internationally at several institutions as well as biennales and triennials. Tega Brain lives and works in Sydney and New York.

11

Gilberto Esparza

KORALLYSIS

2019 – Ongoing

Kinetic multi-media installation, single-channel video projection, sound/colour, 7:00 min.

The installation *KORALLYSIS* by Gilberto Esparza involves kinetic systems developed to be embedded in coral colonies, forming a symbiotic relationship with them. The project's initial experiments have already been placed as artistic interventions underwater at various locations in the Mexican Caribbean. Its aim is

to raise awareness of, and actively counteract, coral reef destruction caused by marine pollution and climate change. Modular ceramic structures, which function like prostheses, are integrated into the damaged coral reefs and as the ocean's currents cause their kinetic structures to generate energy, a new process of reef colonisation is triggered. This attracts natural organisms such as plankton, algae, and barnacle larvae, which accelerates the growth of corals. Here, man-made constructions implanted into the dying reef enable its revitalisation. The creative and cooperative development process of *KORALLYSIS* involves art students, engineers, biologists, physicists, and civil associations.

Gilberto Esparza's (MX) work explores how electronic and robotic technologies have an impact on daily life. Whether through recycling technological waste or the use of biotechnologies, his practice offers new ways to reduce and balance human impact on the planet. He studied at the School of Fine Art of the University of Guanajuato, Mexico, and the Faculty of Fine Arts of San Carlos in Valencia, Spain. Esparza's projects involve the collaboration of various research centres from a wide range of disciplines. His works have been shown in numerous exhibitions around the world and he has received several awards, such as the Prix Ars Electronica (2015). Gilberto Esparza lives and works in San Miguel de Allende and Mexico City.

12

Gil Delindro

RHONE Suspension

2021

Glass vitrine, glacial till, prepared subwoofer, calving infrasound recordings from Rhone Glacier

RHONE Suspension is a kinetic sculpture resulting from three months of research and field recordings made by Gil Delindro at the Rhone Glacier in Switzerland. Shifts, alterations, and changes in the glacier's surfaces are ongoing but almost imperceptible. The artist used highly sensitive microphones to capture low frequencies and infrasounds made by the glacier's movement. These audio waves are below the limits of human perception. The installation consists of a kinetic sculpture based on a custom-made sound system that the artist has filled with gravel collected from the bottom of the glacier. This debris sits on top of a sound amplifier and is brought to float within a glass vitrine by the vibrating acoustic energy of the recorded sounds. The gravel of the Rhone Glacier levitates, creating a variety of shapes and densities, making it possible to experience hidden and ephemeral processes of nature.

Gil Delindro (PT) is a sound and media artist who explores the interrelations between organic elements, technology, and human impact on the processes of decay. He seeks to disclose

intangible and imperceptible processes in nature using the tools of scientific research and advances in technology. Sound is a central element in Delindro's work, which he uses to expose notions of time, space, and a rapidly changing environment. His artistic practice includes film, installation, sound performance, and sculpture, including site-specific research, geology, and bioacoustics. He is the co-founder of Rural Vivo, a cross-disciplinary association dedicated to ecological, educational, and cultural activities in the UNESCO Gerês Reserve in northern Portugal. Gil Delindro lives and works between Berlin and Porto.

13

Mélodie Mousset & Eduardo Fouilloux

The Jellyfish

2020

VR Experience

The virtual reality experience *The Jellyfish* created by Mélodie Mousset and Eduardo Fouilloux invites viewers to immerse themselves in an underwater world and interact with luminous jellyfish. Sea creatures swim around the spectators and are awakened if they look at them or make sounds with their voices. Jellyfish will respond to a viewer's singing with their own sounds and colourful animations. If they continue to sing, more jellyfish will gather to create a polyphonic chorus. The work is powered by a synthesiser, developed by the artists, equipped with real-time voice analysis that measures the pitch, tonality, and phrasing of a spectator's voice. Concurrently, it generates

audio-visual compositions of an underwater environment, which is transformed into a soundscape. Through harmonious interaction and synesthetic exchange between visitors and virtual beings, the artists have created a sense of connection between species in a poetic and playful way.

Mélodie Mousset (AE) is a French artist. She studied art in Rennes, Lausanne, London, and Valencia, California. Her work oscillates between virtual and physical worlds, unfolding in a wide variety of media such as performance, video, installation, photography, sculpture, and interactive media. Her work has been exhibited in institutions, galleries, and festivals worldwide. In 2020 she co-founded Patch XR, a studio specializing in the development of musical tools and gaming experiences for extended realities. Mélodie Mousset lives and works in Zürich.

Edo Fouilloux (MX) creates new ways of playing with interactive audio-visual media in real-time and is the director and co-founder of Patch XR. Edo Fouilloux lives and works in Copenhagen.

14

Rasa Smite & Raitis Smits

Atmospheric Forest

2020

Participatory VR installation, 17 min.

The virtual reality installation *Atmospheric Forest* allows visitors to enter a forest – digitised through 3D scanning – and experience how changes in climate influence the emissions of trees, which is a complex and often imperceptible

phenomenon. A forest in the Swiss Alps affected by severe drought has been monitored by scientists for several years. The scientific data gathered by this research serves as the basis for Rasa Smite and Raitis Smits's vivid visualisation and soundtrack. Trees not only generate vital oxygen but, like the earth itself, they “breathe” by releasing gases into the atmosphere, which we perceive as the smell of the forest. In the future, if forests smell more intensely, it could indicate an alarming sign of climate change. Although technological research can often seem inaccessible, Smite and Smits succeed in giving palpable form to invisible processes, allowing us to understand how climate-related changes in the atmosphere affect the forest ecosystem.

Atmospheric Forest was created as part of the research project Ecodata-Ecomedia-Ecoaesthetics (2017–21) at the Hochschule für Gestaltung und Kunst (FHNW) in Basel, Switzerland.

Rasa Smite and Raitis Smits (LT) are artists and researchers who have been working at the intersection of art, science, and new technologies since the mid-1990s. They create experimental, networked, visionary, and innovative artworks. They are also the main founders of RIXC, The Center for New Media Culture in Riga, Latvia. Smite is a professor of new media at Liepaja University and Smits is a professor at the Art Academy of Latvia. Their work has been presented in numerous exhibitions worldwide. In 1998 they received the prestigious Prix Ars Electronica and in 2016 they were honoured with Latvia's National Award of Excellence in Culture. Rasa Smite and Raitis Smits live and work in Riga.

Fragmentin

Displuvium

2019

Multimedia installation, computer, 2 screens, rusty steel, black aluminium, 3D print nozzles, water pumps, electronic components

Fragmentin's installation *Displuvium* investigates human efforts to control the weather. Known as geoengineering or cloud seeding, practices of modifying the weather have been used in various countries since the 1940s. In a pool of water, jets simulate the impression of falling raindrops. At first the water droplets appear natural, then artificial patterns emerge, making it clear that manipulation is at play. Two screens beside the basin report on exceptional historical weather phenomena of heavy rainfall, both natural and resulting from deliberate weather modifications. Among them is a 1992 military parade in Moscow where chemicals ensured that no rain would disrupt celebrations. In 2008, by contrast, Beijing's attempt to trigger rain after a prolonged drought produced a devastating snowstorm instead. These two incidences are mirrored in the water basin, which switches between natural and man-made rain patterns. The title of the work refers to the ancient Roman displuvium, a basin located in an open atrium to collect falling rainwater and serving as a window to the weather of the outside world. Fragmentin's work

draws attention to the far-reaching extent of human intervention into natural processes. However, the severe meteorology of recent years clearly indicates that humans will never have control over the weather.

Fragmentin (CH) is an artist collective based in Lausanne. Founded in 2014, it consists of Laura Nieder, David Colombini, and Marc Dubois, all graduates of ECAL (Lausanne School of Art and Design). Combining art and technology, their work questions the impact of digital technologies on our everyday lives and examines their inherent mechanisms of control and obscurity. Fragmentin's installations, videos, interactions, web apps, virtual reality experiences, and performances elucidate the consequences of media technologies on society. Their works have been exhibited in numerous museums and institutions worldwide. Fragmentin has received various prizes, including the Pax Art Award for Swiss media art 2018.

Sissel Marie Tonn & Jonathan Reus

The Intimate Earthquake Archive

2016 – 2022

Interactive multimedia installation

Sissel Marie Tonn's interactive installation *The Intimate Earthquake Archive* allows us, via waistcoats equipped with transducers, to experience man-made earthquakes caused by gas drilling in the Dutch province of Groningen over the last 34 years. Tonn employs data from numerous archives, including the

digital database of the Netherlands Meteorological Institute, where all seismic activity is registered and archived. Visitors wearing the specifically designed waistcoats receive information from these records by standing between a series of radio-transmitting cores. Each transmits the record of one of the 12 strongest man-made earthquakes, translating archival data into sound vibrations through direct manipulation. The resulting compositions stimulate “deep listening” in the body. By connecting digitised seismic activity with sentient species, the installation allows us to experience the physical effects of man-made geological changes.

Sissel Marie Tonn (DK) uses her artistic practice to explore the complex ways that people perceive, interact, and connect with their environment. Her hybrid, interactive installations and objects invite the audience to engage with stories and data in a sensory and participatory manner. Tonn studied film and media studies and graduated with a master's degree in Artistic Research from the Royal Academy of Arts in The Hague. Her work has been exhibited internationally and she has received several grants and awards. Together with Jonathan Reus and Flora Reznik, she is co-founder of the artist initiative Platform for Thought in Motion. Sissel Marie Tonn lives and works in The Hague.

Jonathan Chaim Reus (US), is an artist, musician and researcher based in the Netherlands. In his interdisciplinary artistic work he deals with the interplay of human bodies, sound and technology. Reus is co-founder of the cultural initiative iii in The Hague and the Platform for Thought in Motion.

Warning: *The Intimate Earthquake Archive* uses embedded sensors that vibrate through electromagnetic currents. We caution visitors who are sensitive to vibrations

or electromagnetic radiation (e.g. have a pacemaker) that participation is at their own risk.

17

Mary Maggic

Plants of the Future

2013 – 2020

Satellite dish, glass, lighting, polyethylene tubing, aeroponic system, plants

The processes of urbanisation and deforestation are endangering the biodiversity of our planet. Beginning from this observation, Mary Maggic has created a post-natural organism that can survive a future in which the earth no longer has fertile soil, in order to reflect the techno-utopian discourse of our civilisation. The plants in this installation are grown according to hydroponic cultivation (i.e. out of the soil) with nutrient solutions and, in this case, artificial light. Employing the aesthetic of science fiction imagery, the artist questions a utopian vision of the future in which technology is able to solve environmental problems in harmony with nature. The *Plants of the Future* are beautiful and fascinating, arranged with an inverted orientation that allows more prosperous growth than the traditional upright position. This work is perhaps also a cautionary tale about a techno-utopian ideology that increasingly distances us from our planet.

Mary Maggic (US) is a non-binary, Chinese American artist whose interdisciplinary practice spans amateur science, public workshopology,

performance, large scale installation, documentary film, and speculative fiction. They work at the intersection of biotechnology, cultural discourse, and civil disobedience with a main interest in hormone biopolitics and environmental toxicity. Specifically, they have been exploring how the ethos and methodologies of biohacking can serve to demystify invisible lines of molecular (bio)power. They graduated from Carnegie Mellon University, Pittsburgh, and the MIT Media Lab of the Massachusetts Institute of Technology, Cambridge. Their work has been exhibited internationally and they have collaborated with several artist collectives. Mary Maggic is currently based in Vienna.

18

melanie bonajo

Progress vs Sunsets – Re-formulating the Nature Documentary

2017

HD-Video with sound, 48:20 min.

The video *Progress vs Sunsets – Re-formulating the Nature Documentary* investigates how documentary movies and digital photography inform our perception of nature. melanie bonajo has been meticulously collecting images, photos, and animations of nature and animals online. Using that material as a source, she developed questions addressed to children whose honest and poignant responses agree that animals and humans have equal rights. The work is made up of sequences showing children in combination with animations and amateur videos. In the interviews, children ask questions concerning

the rights of, and laws for, humans and nature. The children show a respectful attitude to each other, while illuminating the impact of surveillance technology and the exploitation of nature. Through these interviews, bonajo questions how we could experience the world of nature as children do, with curiosity and respect.

melanie bonajo (NL) are a non-binary eco-feminist, hyper-elf, witch, and animal rights activist. They question the juxtaposition of human and nature and, in their various rituals, they utilise technologies to design tools that aim to escape the alienation of humans from nature. Shamanism, spirituality, and ecological awareness are central concepts in their practice. Their works span film, performance, and installation. bonajo is representing the Netherlands at the 59th Venice Biennale, 2022. They have presented and performed at international museums and festivals. melanie bonajo live and work in Amsterdam and New York.

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Erik Bünger

Nature see you

2022

Video, 18:57 Min.

In 2015, a video message by a gorilla named Koko addressing leaders at the United Nations climate change conference went viral on the Internet. Koko was trained to communicate using American Sign Language. Using a few simple but poignant gestures, the gorilla urged humans to take action to save nature.

Artist Erik Bün­ger uses sequences from the original video message and introduces a digital avatar to comment on Koko's sign language. The artist's digital interpreter analyses the syntax and vocabulary of the gorilla's gestures and how these have been misused by the gorilla's keepers to convey an alleged message from nature. Through the use of a digital interpreter, who acts as the artist's voiceover, Bün­ger intends to reveal the power and abuse of the voiceover. The video question whether nature can comprehend its extinction and why humans remain deaf to its appeals.

Erik Bün­ger (SE) is an artist, composer, and writer. He focuses on the relationship between voice, performed language, and the body, as well as narration and representation of communication through and within technology. His recent research project explores the phenomenon of the voice-over; an unseen narrator speaking in different media. Using archival and documentary materials, musical compositions, and lecture-performances Bün­ger reflects on the manipulative potential of language and narration to adjust meaning. His work has been presented at international cultural festivals and institutions. With a background as a composer and philosopher, Bün­ger is exploring the side-effects of communication and technology. He is a fellow at the University of Applied Arts in Vienna. Erik Bün­ger lives and works in Vienna.

Curators

Since 2012, **Sabine Himmelsbach** is director of HEK (House of Electronic Arts). After studying art history in Munich she worked for galleries in Munich and Vienna from 1993–1996 and later became project manager for exhibitions and conferences for the Steirischer Herbst Festival in Graz, Austria. In 1999 she became exhibition director at the ZKM | Center for Art and Media in Karlsruhe. From 2005–2011 she was the artistic director of the Edith-Russ-House for Media Art in Oldenburg, Germany. Her exhibitions at HEK in Basel include *Ryoji Ikeda* (2014), *Poetics and Politics of Data* (2015), *Lynn Hershman Leeson: Anti-Bodies, Eco-Visionaries* (2018), *Entangled Realities. Making FASHION Sense* (2020) and *Real Feelings. Emotion and Technology* (2020). As a writer and lecturer she is dedicated to topics related to media art and digital culture.

Boris Magrini is head of programme and curator at HEK (House of Electronic Arts). He studied art history at the University of Geneva and completed his PhD at the University of Zurich. He was curator at aDuplex in Geneva, assistant curator at Kunsthalle Fribourg and Kunsthalle Zurich, and he is the editor of the Italian pages of Kunstbulletin. Curated shows include *Radical Gaming* (2021), *Shaping the Invisible World* (2020), *Entangled Realities – Living with Artificial Intelligence* (2019), *Future Love. Desire and Kinship in Hypernature* (2018), *Grounded Visions: Artistic Research into Environmental Issues* (2015–2016), *Hydra Project* (2016), *Anathema* (2007–2008), and *Mutamenti* (2007). Some of his publications include: *Automation and Intentionality – Photography Without the Camera, in Automated Photography* (ECAL/Lausanne, Mörel Books: 2021), *Confronting the Machine: An Enquiry into the Subversive Drives of Computer - Generated Art* (Berlin/Boston: de Gruyter 2017), and *Hackteria: An Example of Neomodern Activism* (Leonardo Electronic Almanac Vol. 20, Issue 1, 2014).

Institution & location

HEK (House of Electronic Arts) is the Swiss centre of excellence in the exploration of artforms utilising and reflecting on new technologies and media. Since opening its doors in 2011, it has played an essential role in creative and critical discourses on the aesthetic, socio-political, economic, and ecological effects of media technologies. HEK's interdisciplinary approach often merges art, media, and technology to make an array of artistic production accessible to a wide audience. hek.ch

The **Möllerei** is a large industrial building originally used to store the raw materials (coke and iron ore) before they were fed into the blast furnaces to produce cast iron and slag. With a total length of about 160 meters the Möllerei is a characteristic feature of the former Belval steel plant and local area. Opened to the public in 2018 after extensive transformation work the North section is now home to the Luxembourg Learning Centre. The South section has recently undergone thorough restoration work. It now connects to Blast Furnace A via a metal footbridge and accommodates a 500 square meter exhibition space spread over three floors.

Associated Programm

Workshop | **Korallysis - building a coral reef from ceramic modules**

Walk-in Workshop for families

04. & 05.06., 14:00 - 15:30 & 15:30 - 17:00

Workshop | **Digital ecology for your laptop**

Workshop for adults

08.06., 18:00 - 19:30

09.06., 10:00 - 11:30, 14:00 - 15:30

& 18:00 - 19:30

Workshop | **Kraut Source Energy - Re-think the future and build a battery out of sauerkraut**

Artist workshop for children

13.08., 14:00 - 17:00

14.08., 13:00 - 16:00

Information & booking

esch2022.lu / reservation@esch2022.lu

Selected projects in Belval

Exhibition

Respire, pour un design climatique

04.06. – 25.09., Massenoire

RESPIRE is an interdisciplinary research/creation project on breathing and its capacity to constitute a lever for changing our relationships to the environment and our lifestyles.

RESPIRE is designed by the DMLab, Laboratory of Environmental Design at ENSAD Nancy.

Escape Room

Escape Room SDG 12 – Responsible Production and Consumption

04.06. – 25.09., Massenoire

Escape Room SDG 12 – Responsible

Production and Consumption is an interactive educational game, which focuses on Sustainable Development Goal number 12: responsible consumption and production. Players must make real life choices in order to help create a better 2030.

List of works

Refik Anadol

Quantum Memories – Probability – Square
2021

AI Data Sculpture, video loop, 18 min.
Courtesy of Refik Anadol Studio, LLC

Donatien Aubert

Les jardins cybernétiques
2020

HD video, 16:9, Stereosound, 17:21 min.

Donatien Aubert

Chrysalide n°3
2020

Interactive sound and light device (including an ultrasonic sensor, programmable and horticultural LEDs, two Arduino microcontrollers, two Raspberry Pi microcomputers, and two pairs of speakers), mirror-polished stainless-steel tubes and half-sphere, laser sintered 3D printed nodes, PMMA plates, aluminum box, clay balls, soil, plants (philodendron, calathes)
Creation produced by CHRONIQUES,
Biennale of Digital Imagination, imagined by
SECOND NATURE und ZINC.
Courtesy artist

melanie bonajo

*Progress vs Sunsets – Re-formulating
the Nature Documentary*
2017

HD video, sound, 48:20 min.
Courtesy artist & AKINCI gallery

Tega Brain

Deep Swamp
2018

Glass tanks, wetlands, plumbing, shade balls, electronics, custom software, 3 channel sound
Courtesy artist

Broersen & Lukács

Bark with a Trace
2022

Lightboxes, video, 7:00 min.
Courtesy artist

Erik Bünger

Nature see you
2022

Video, 18:57 min.
Courtesy artist

María Castellanos & Alberto Valverde

Beyond Human Perception
2020

Multi-media installation with plants and sensors,
2 videos, video HD 2K, 32:54 min.

This work was realised within the framework of the European Media Art Platforms EMARE Program at KONTEJNER | bureau of contemporary art praxis with support of the Creative Europe Culture Programm of the European Union. With the support of UR Institute and LABoral Art Centre.
Courtesy artist

Gil Delindro

RHONE Suspension
2021

Glass vitrine, glacial till, prepared subwoofer, calving infrasound recordings from Rhone Glacier
Courtesy artist

Gilberto Esparza

KORALLYSIS
2019 – ongoing

Kinetic multi-media installation,
single-channel, 7:00 min.
Courtesy artist

Transport generously supported by Cargolux S.A.

Fragementin

Displuvium
2019

Multimedia installation, computer, 2 screens, rusty steel, black aluminium, 3D print nozzles, water pumps, electronic components
15 x 205 x 100 cm

Courtesy artists and Collection HEK
(House of Electronic Arts)

Alexandra Daisy Ginsberg

The Substitute

2019

Video installation, 6:18 min.

Animation by The Mill with behaviour based on research by DeepMind. Commissioned by the Cooper Hewitt, Smithsonian Design Museum and Cube design museum, 2019

Courtesy artist

Marc Lee

Used to Be My Home Too

2021

Net-based video installation, endless

Courtesy artist

Marcus Maeder

Edaphon Braggio

2019

Audio-Installation

Courtesy artist

Mary Maggic

Plants of the Future

2013/2020

Satellite dish, glass, lighting, polyethylene tubing, aeroponic system, plants

Courtesy artist

Mélodie Mousset & Eduardo Fouilloux

The Jellyfish

2021

VR-Experience

Mélodie Mousset & Edo Fouilloux

Co-director

Chris Heinrichs, Interactive Audio Design

Victor Beaupuy, Technical Artist

Vinicius Pereira Faria, Developer

Tom Frackowiak, Developer

Courtesy artist

Sabrina Ratté

Floralia I - IV

2021

3D animation, 4 videos, 4:00 min.

Courtesy artist

Scenocosme :

Grégory Lasserre & Anaïs met den Ancxt

Akousmaïlore

2007

plants, computer, interactive device, sound system, variable sizes

Courtesy artists

Rasa Smite & Raitis Smits

Atmospheric Forest

2020

VR-Experience, 17:00 min.

Created created as part of the

Ecodata–Ecomedia–Ecoesthetics

research project (2017–2021), led by

Yvonne Volkart, hosted by the Academy

of Art and Design (FHNW), funded by the

Swiss National Science Foundation, in

collaboration with the scientists Arthur Gessler,

Christian Ginzler, Andreas Rigling from

Swiss Federal Institute for Forest, Snow and

Landscape Research (WSL), and visiting

scientist Kaisa Rissanen, University of Helsinki.

Courtesy artists

Sissel Marie Tonn & Jonathan Reus

The Intimate Earthquake Archive

2016 – 2022

Interactive installation

Hardware design/Interaction:

Marije Baalman & Jonathan Reus,

Carsten Tonn-Petersen

Vest design: Gino Anthonisse and

Christa van der Meer

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Courtesy artists

Imprint

Earthbound – In Dialogue with Nature

04.06. – 14.08.2022

Möllerei

6, Place de l'Académie
L-4362 Esch-sur-Alzette

Entrance via Visitor Centre

3 avenue des Hauts Fourneaux
L-4362, Esch-sur-Alzette

Collaboration

HEK (House of Electronic Arts)

Curated by Sabine Himmelsbach

and Boris Magrini
with the support of Yulia Fisch

Artists

Refik Anadol
Donatien Aubert
melanie bonajo
Tega Brain
Persijn Broersen & Margit Lukács
Erik Bünger
María Castellanos & Alberto Valverde
Gil Delindro
Gilberto Esparza
Fragmentin
Alexandra Daisy Ginsberg
Marc Lee
Marcus Maeder
Mary Maggic
Mélodie Mousset
Sabrina Ratté
Scenocosme :
Grégory Lasserre & Anaïs met den Ancxt
Rasa Smite & Raitis Smits
Sissel Marie Tonn

Project management Yulia Fisch (HEK)
& Vincent Crapon (Esch2022)

Project collaborator Guillaume Taens
(Esch2022)

Technical project coordination

Thomas Schwab, Matthias Gommel,
Michel Winterberg, Tim Marti, Daniel Dressel

Technical project management

Thomas Schwab, Matthias Gommel

Scenography

 Andreas Wenger

Exhibitions graphic design

 Cropmark

Exhibition visuals Konrad Renner,
Studio Knoth & Renner

Facility manager

 Guillaume Taens

Set-up team Martin Boukhalfa, Christoph
Dinges, Daniel Dressel, Matthias Gommel,
Heiko Hoos, Tim Marti, Marius Nestler, Thomas
Schwab, Olaf Quantius, Michel Winterberg

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Mediators guided tours Mekdes Asefa, Hannah Back, Reyhan Baykara, Emilie Borie, Julia Buso, Jillian Camarda, Khili Chaima, Tiffany Dhur, Carla Genicot, Marie-Paule Greisch, Oumayma Haddioui, Anna Lisiecki, Zaïneb Mouss, Georg Riesenhuber, Caroline Schmit, Yixing Tu, Anthony Visconti, Elisabetta Battaglia

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EARTHBOUND IN DIALOGUE WITH NATURE

04.06. – 14.08.2022

Opening times

11:00 – 19:00

Monday – Sunday & bank holidays

Closed on Tuesday

Exhibition tickets & information

Visitor Centre

3, avenue des Hauts-Fourneaux

L-4362 Esch-sur-Alzette

Guided tours

Guided tours upon request

(LU, FR, DE, EN, PT, IT, ES, sign languages)

reservation@esch2022.lu

Free guided tours

Saturday & Sunday from 15:00



Collaborating institution



Institutional partners

