

DESIGN
设计

振动的
云层

Vibrat
ing

Clouds

互联
SOCIETY

设计互联
设计策展计划
Design Society
Curating Design Plan

2021.4.30-9.21

振 动 的 云 层
Vibrating Clouds

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About Curating Design Plan

由设计互联发起的设计策展计划是跨学科新型策展人的扶持平台,鼓励对策展的创新探索,支持对社会文化的多元观察、研究与讨论。自2020年8月面向全球征集策展方案,由评审委员会评选出入围方案、设计互联研究伙伴与设计互联策展人奖得主。设计互联为获奖与入围团队持续提供专业支持,协助他们深化研究、完善方案,持续设计策展的实践与探索。

Initiated by Design Society, the 2020 Curating Design Plan is a platform aiming to support new interdisciplinary curators, encourage explorations of innovative curatorial practice, diverse and multi-cultural research and discussion. Since the open call in 2020 August, the jury committee has solicited an award winner and 3 research fellows. Design Society provides professional support for the winning and shortlisted teams to dive into the research, improve the proposal, and continue exploration on design curatorial practice.

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出品: 招商蛇口 | 设计互联
联合主办: 深圳市创想公益基金会、招商局慈善基金会、深圳市设计互联文化艺术基金会
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Partner: School of Design, Central Academy of Fine Arts (CAFA); Institute of Contemporary Art and Social Thought, School of Inter-Media Art, China Academy of Art; Art Museum of Guangzhou Academy of Fine Arts

关于策展人

About Curator

设计师, 策展人, 研究性艺术组织 Conversazione (CVSZ) 创始人。毕业于罗德岛设计学院建筑系, 现工作于 MAD 建筑事务所。创作领域涉及建筑设计、短片电影和实验剧场, 致力于探索生态气候、媒体技术与空间政治等跨学科议题。短片电影 Poetic Gaze 获得鸣凤堂国际青年影像节铜奖。展览“齐物生息: 堆栈地貌中的自然系统变动”进入2020OCAT 研究性展览。展览“振动的云层”获首届设计策展计划策展人奖, 并在设计互联展出。

Designer, Curator, Founder of research-based art organization Conversazione(CVSZ). Graduated from Rhode Island School of Design, Architecture. Now work at MAD Architects. Yixuan's practice ranges from architecture design, independent film to experimental theater. She is dedicated to issues of geopolitical ecology, media technology and spatial cosmotechnical arts. Her short film "Poetic Gaze" has won the bronze plate in 2019 MEIHUO International Youth Film Festival. Her curatorial project "QiWu: Natural Footprint in Technological Vicissitude" has entered the 2020 OCAT research-based exhibition. Her exhibition "Vibrating Clouds" has won the first Curating Design Plan Curator Award, and presented by Design Society.

展览前言

Curatorial Forward

空气无形无相，却可以承载湿度、温度、闪电、云层、风、污染物、无线电波、飞鸟与尘埃。它穿梭在身体与自然、建筑与山川、现实与虚拟平台之间，构成了我们共同呼吸的环境。

20 世纪以来，当代人的生活空间已面临着本质上的转变，以化石燃料为基础的工业生产将碳物质和大量温室气体送入大气，将大气由自然转化为人工的产物。空气作为公共界面，流转于不同的生态圈层之间，也在数字控制和资本的驱动下不断受到侵占：化学物质占领云层，可吸入颗粒物漂浮在肺部，电磁辐射包围着地球。在这样一个时代，如何呼吸？如何抵抗气候变化和对地球

Despite being amorphous, air carries humidity, temperature, clouds, wind, lightning, radio waves, birds, pollutants, and dust. Air percolates through both the living and inanimate, buildings and mountains, spatial and virtual; binding the environments that we all breathe together. Synonymous with mobility, intimacy, sharing, and freedom, air sits in contrast with the trends of a world gripped by a pandemic; one of control, distance, global protectionism, and digital tracking.

As an open, public interface that flows freely across biospheres and boundaries, air is frequently appropriated by digital and capital-driven processes. Fossil fuel-based industries transform the atmosphere

的资源开采？设计师如何介入气候调节及空间设计？对不可见气象的数字呈现如何改变我们对环境的认知？都是此次展览希望提出的问题。

从地表到万米高空之间并非真空，而是充满了微观粒子的振动，水汽波、通讯信号和宇宙射线，嗡鸣作响的无人机等高空作业。

“云”与“云平台”同构，自然现象的振动、通讯网络的电波振动以及无人机对地表的实时监控，占据了同样的空间。从物理空间到虚拟平台，网络将我们自己拓展到多个终端和数据库中。与此同时，人们对空气的认知依赖技术与图像数据。只有从宇宙回看包裹陆地的大气，将整体环境视作客体，大气才成为可被编辑与创作的媒材。占领云层、与占领云端，已成为新的占领陆地与身体的方式。

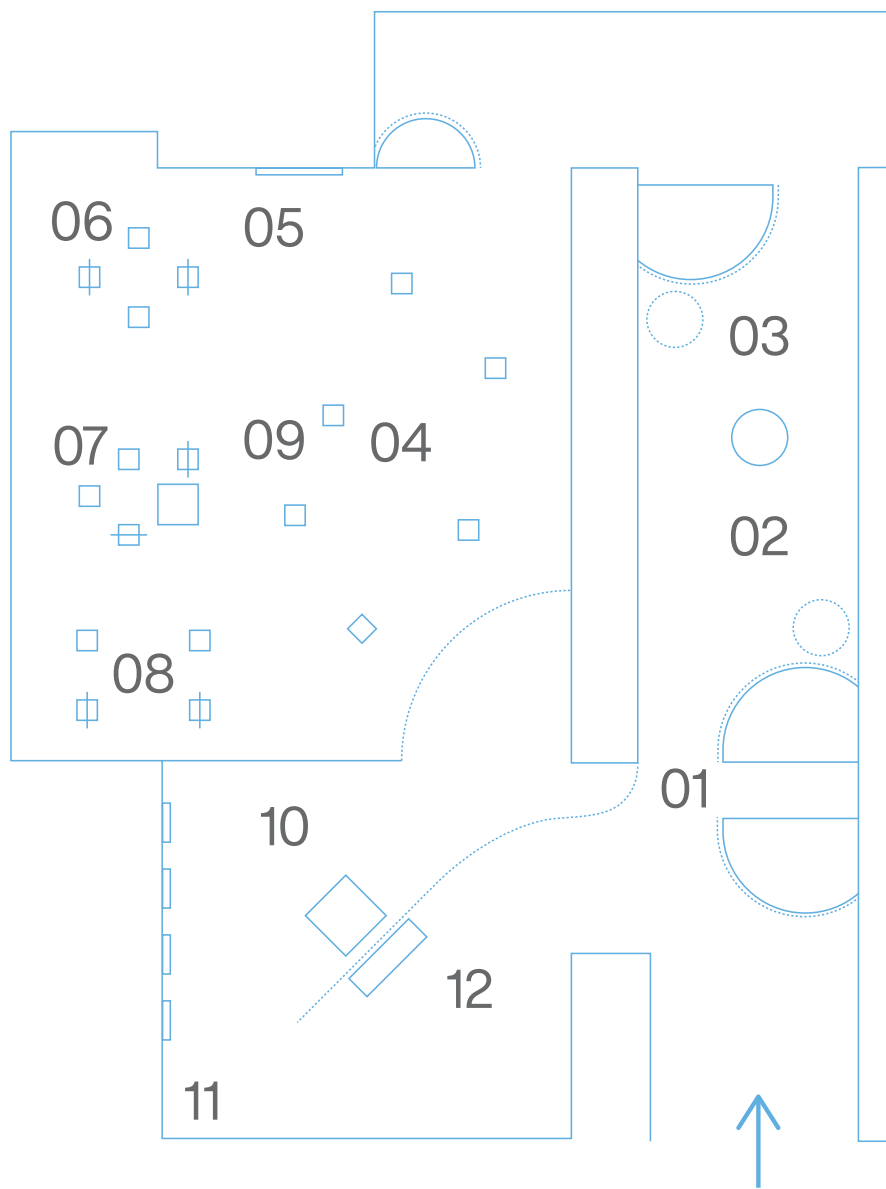
空气作为流转于自然与人工两种系统之间的介质，是滤器也是容器。人类与空气的关系，是心理、文化以及技术的共同建构。

策展人
蔡艺璇

from natural to artificial; electromagnetic waves envelope the earth; digital model builds infinite nature into a finite world of knowledge. In response, “Vibrating Clouds” raises a series of questions: how can we co-exist with a medium as intimate yet uncontrollable as air? How can designers intervene in the realms of climate regulation and space? How can we mediate between vastly opposing scales, from planetary computations to individual sensations?

The space from terrene to ether is not empty. Rather, it is full of vibrations from natural phenomenon to artificial infrastructure; from water vapor to cosmic rays, from humming drones to 5G signals, from aerial operations to communication flows. The “Cloud Platform” is in fact analogous to a “Cloud”. From physical space to virtual platform, the network expands ourselves into multiple terminals and databases. Our perception of these invisible surroundings also relies on artificial viewpoints. It is only when we can look back at the earth from outer space that the atmosphere becomes a tangible, recognizable entity. In this new paradigm, to occupy clouds and cloud platforms is as familiar as occupying the land and self.

Curator
Yixuan Cai



01

记忆，理想（状态）与假设 A Memory, An Ideal, A Proposition

装置，单屏影像，书籍，摄影
Installation, Single Channel Video, Books, Photography

2017
卡罗琳娜·苏贝卡
Karolina Sobecka

02

云的反照率 Albedo of Clouds

声音，视频投影，定制的圆形聚合物屏幕
Sound, Video projection, Custom-made Round Polymer Screens

2021 年版
珍妮·兰德森
Janine Randerson

03

气的化石 Fossils of Air

声音，视频投影，定制的圆形聚合物屏幕
Sound, Video projection, Custom-made Round Polymer Screens

2021
珍妮·兰德森
Janine Randerson

04

暖水待风 Warm Water Waits Wind

声音系统
Sound System

2021 版本
孙雷
Sun Lei

05

气象建筑 Meteorological Architecture

建筑设计
Architectural Design

2008 - 至今
菲利普·朗恩
Philippe Rahm

06

模糊大楼 Blur Building

建筑设计
Architecture Design

2002
DS+R 建筑事务所
Diller Scofidio + Renfro

07

气候作为媒介 Climate as Medium

服装，思辨设计
Apparel, Speculative Design

2019
王哲睿
Zherui Wang

08

气的纪元 Aerocene

气球，帆布背包，回收塑料瓶，传感装置
Ripstop balloon, Canvas backpack, Recycled plastic bottle, Sensing Devices

2016- 至今
托马斯·萨拉切诺
Tomas Saraceno

09

楼板 Interarea

建筑装置
Architectural Installation

2021
黄泽林
Zelin Huang

10

甲亥，九五 JiaHai, JiuWu

实验音乐
Experimental Music

2013-2015
梁奕源
Yiyuan Liang

11

可感的云层 -- 一种大气建筑 Sentient Cloud -- Architecture for the Atmosphere

思辨设计
Speculative Design

2019, 2021 版本
赵潇潇
Zhao Xiaoxiao

12

种子、图像、土地 Seed, Image, Ground

双屏影像
Two channel video

2020
阿维拉多 吉尔 - 福尼尔, 尤西·帕里卡
Abelardo Gil-Fournier, Jussi Parikka

第一章

Chapter I



记忆、理想与假设
卡洛琳娜·苏贝卡

A Memory, An Ideal and A Proposition
Karolina Sobecka



云的反射率、气的化石
珍妮·兰德森

Albedo of Clouds, Fossils of Air
Janine Randerson

云在天，水在瓶。我们对空气的认知建立于不同的感知方式，这取决于它的可见性、不透明度和与我们的距离。前现代智慧常将气视为一种灵性媒介，而现代技术则将空气清晰化为一系列肉眼不可见的化学元素。人类对空气的知识体系即是在科学手段的不断变化下而变化的。我们并不想建立前现代与现代两种认知方式之间的二元分化，而是要了解认知的变化如何揭示和重建我们在宇宙中的位置。

Clouds float in the sky; water contains in a bottle. As a universal, natural medium, air is perceived in radically different forms depending on its visibility, opacity, and proximity. We have arrived at our present understanding of air through a changing knowledge structure. Indigenous wisdom presents air as a spiritual medium, while modern technology maps the content of air as an arrangement of chemical compositions. We do not aim to establish a binary view between pre-modern and modern knowledge, but to understand how such advancements in knowledge can expose and reconstruct our place in the universe.

Karolina Sobecka is an artist and researcher whose work is focused on the relationship between environmental concerns and science and technology development. Her current projects explore the histories of ecology and their legacies in the contemporary formulations of carbon governance. One of the questions driving Karolina's research is how artistic methods can be used outside of the art context towards socially-just and emancipatory ends. Through her projects, Karolina participates in and often instigates interdisciplinary collaborations in the settings of science and policy. Karolina's artwork has been shown internationally, and has received numerous awards, including from Creative Capital, New York Foundation for the Arts, Princess Grace Foundation, Eyebeam, Rhizome, and Vida Art and Artificial Life Awards. Karolina has taught internationally and is currently part of a team of the research project "Cycles of Circulation" based at Critical Media Lab Basel and a Predoctoral Fellow at the Max Planck Institute for the History of Science in Berlin.



01

记忆，理想（状态）与假设 A Memory, An Ideal, A Proposition

2020
卡罗琳娜·苏贝卡
Karolina Sobecka

装置，单屏影像，书籍，摄影
Installation, Single Channel Video,
Books, Photography

该项目在一个化学仪器中呈现了历史阶段中的三种云。在这里，云的变化串起了自然、科学和艺术视角的知识演化。从 1816 年火山喷发后的云中物质，到实验室中的云，再到气候工程实验下的云，这些在玻璃器皿中可变的云层分别讲述了其背后的记忆、实验模型，以及当代假设。通过研究它们的组成、形成条件和创造的环境，作品为地质和社会转型提供了一种新的思考可能性。

The project presents three types of cloud in historical phases in a glassware, where a variation of cloud is a thread of knowledge evolution of natural, scientific, and artistic perspectives. From the representation of substances in a cloud that formed in an eruption in 1816, a cloud that formed in a lab, and a cloud that is designed and proposed to be created, variable clouds in the glassware respectively storytell clouds in a memory, an ideal, and a speculative proposition. By examining their composition, the conditions in which they have formed and those which they created, the project aims to think about the reality of geological and social transformations they paved a way for.

Karolina Sobecka(卡罗琳娜·苏贝卡) 是一位在艺术、科学与技术交叉领域进行创作的艺术家。她是 Flight Phase 艺术与设计工作室的创立者，曾任教于罗德岛设计学院、芝加哥艺术学院以及华盛顿大学。她也是克利普斯海洋学研究所 (Scripps Institution of Oceanography) 的访问学者。同时，她还是瑞士西北专科高等学校 (HGK) 艺术设计学院 (Hochschule für Gestaltung und Kunst, Fachhochschule Nordwestschweiz) 美学实践与理论研究所 (Aesthetic Practice and Theory) 的博士研究生。她近期的项目探究技术创新背后的驱动力，并探寻人类对自然的哲学观念。卡罗琳娜的作品在国际范围内展出，并获得了多家机构颁发的奖项，包括 Creative Capital、Rhizome、NYFA、Princess Grace Foundation、Eyebeam、Queens Museum、Vida Art and Artificial Life Awards、Japan Media Arts Festival。

Janine Randerson is an Aotearoa (New Zealand) based artist and writer. Her moving image and sound artworks are exhibited in the Asia-Pacific region and internationally. She also creates large-scale landscape projections. She collaborates with both community groups and scientists including glaciologists at the University of Canterbury in New Zealand, the BoM (Bureau of Meteorology) in Melbourne and with environmental research scientists in Denmark. She is a LASER (Leonardo Art Science Evening Rendezvous) talk host for Tāmaki Makarau (Auckland).

Janine's book "Weather as Medium: Toward a Meteorological Art" (MIT Press, 2018) examines artworks that offer possible engagement with our future weathers, while creating openings for immediate action in the present. She is an Associate Professor in Art and Design at AUT University.

Janine Randerson (珍妮·兰德森) 是一位来自新西兰的艺术家和作家，关注技术调解和生态系统。她是奥克兰 AUT 大学艺术与设计系副教授，也是 LASER (莱昂纳多艺术科学大会) 的主持人。同时，她的装置和表演作品在亚太地区和国际上均有展出。在项目中，她与来自新西兰国家水和大气研究所、美国国家水和大气研究所 (NIWA)，以及墨尔本的气象局 (BoM) 和丹麦的环境研究科学家进行合作。她的最新著作《气候作为媒介：迈向气象艺术》(Weather as Medium: Toward a Meteorological Art, MIT Press, 2018) 研究了与我们未来的天气可能联系在一起的艺术品，为当前的解决措施提供了可能。

Albedo of Clouds has been redeveloped for the Design society in ShenZhen, China and paired with 'Fossils of Air'. Albedo of Clouds is a conversation between cloud observers, the artist on the ground and a meteorological satellite. As well as mediating between different modes of cloud observation, the subjective nature of cloud gazing is investigated in terms of how different technologies 'see' clouds, and how clouds might vibrate in sonic form. The footage captured from earthbound cloud observation is paired with meteorological imaging data processed by Mike Willmott (Australian Bureau of Meteorology, Satellite Division) generated from a remote observational perspective. From our own earthbound position we attempt to reconcile our fugitive responses to cloud's we photograph, while the machinic vision of the satellite implicates us in the global atmospheric system.

The artwork mirrors a scientific experiment in the late Nineteenth Century where cloud observers around the world triangulated data to measure clouds in photographs for the 'International Cloud Atlas,' first published in 1896. The effect of cloud albedo, or cloud reflectivity on global warming is one of the more controversial issues among climate scientists. Clouds often feature in 'Big Science' geo-engineering projects to ward off atmospheric warming, and some scientists speculate that an increase in cloud cover could reflect sunlight back into space with a cooling effect. Cloud-gazing, once innocent, now opens anxious speculation about the future of the earth's atmosphere.

02

云的反照率 Albedo of Clouds

2021 年版
珍妮·兰德森
音效设计师：杰森·约翰斯顿
特别感谢：迈克·维穆特 (澳大利亚气象局卫星部)
Janine Randerson
Sound Designer: Jason Johnston
Special Thanks: Mike Willmott (Australian Bureau of Meteorology, Satellite Division)

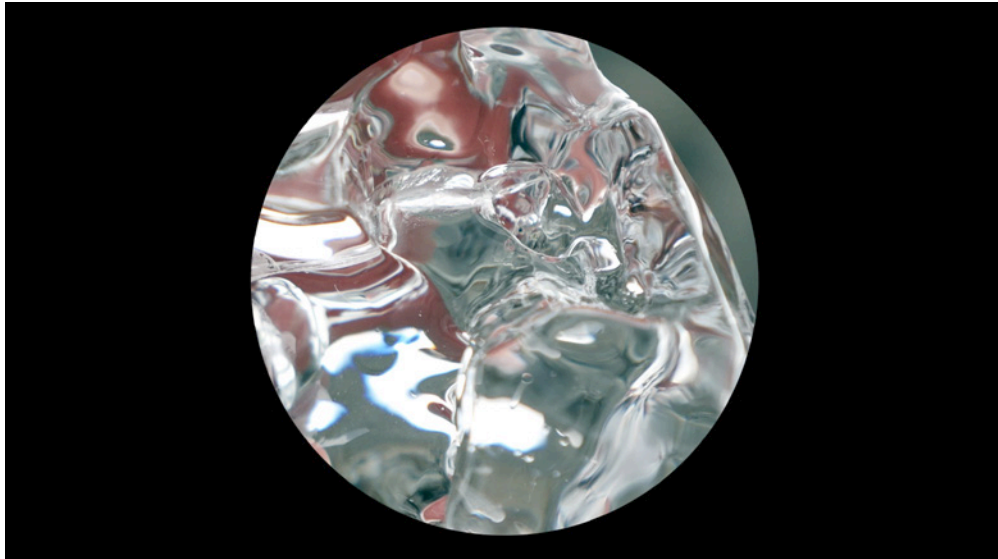
声音，视频投影，定制的圆形聚合物屏幕
Sound, video projection, custom-made round polymer screens

“云的反照率”这件作品是为深圳设计互联展览重新制作的。它涉及了云的观测者、地面上的艺术家和气象卫星之间的一次对话。除了在对云层不同的观测模式之间调和，作品也探究了观云的主观层面，研究了不同的技术如何“看到”云，以及声波如何在云层中振动。迈克·威尔莫特 (Mike Willmott) 处理的气象成像数据，与从地表观测云层的镜头相吻合。从地球上的观测点出发，我们试图调和云的无常性，与此同时，卫星的机械视觉也将我们与全球大气系统联系在一起。

作品反映了 19 世纪后期的一项实验，通过数据三角测量方法来探测《国际云图》中的云。在全球变暖下，云的反照效应是气候科学家中比较有争议的问题之一。一些科学家推测，云层的增加可以将阳光反射回太空，产生冷却效果。“观云”这一曾经纯粹的自然体验，现在却引发了人们对地球大气层未来的焦虑与思辨。



03

气的化石
Fossils of Air

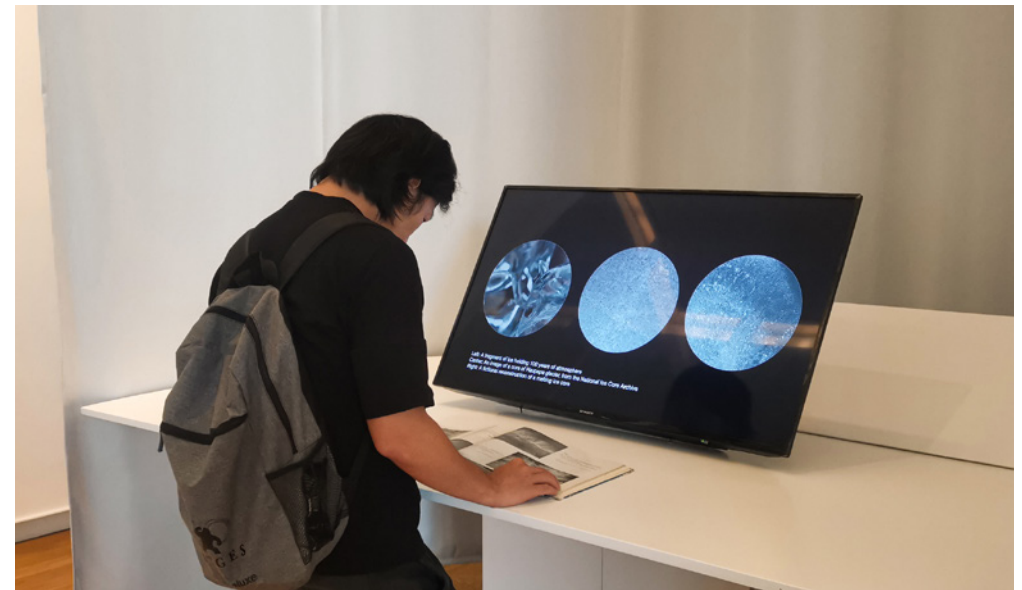
2021
珍妮·安德森
声音设计：杰森·约翰斯顿
特别鸣谢：（冰川学家）希瑟·泼戴，乌维·莫根施特恩
声音：与杰夫·利伯曼合作
录音：希瑟·珀迪
Janine Randerson
Sound Designer: Jason Johnston
Special Thanks: Glaciologists Heather Purdie and Uwe Morgenstern
Audio: Collaboration with Jason Johnston
Recording: Heather Purdie

声音，视频，定制的圆形聚合银幕
Sound, video projection, custom-made round polymer screens

气的化石是一件多媒体影像作品，探索来自哈乌帕帕 / 塔斯曼冰川中的气穴。它们既真实，又充满想象的空间。这段视频揭示了大气中的微小气泡——包括二氧化碳和甲烷等温室气体——被压在冰层内而形成的气袋。这些气穴“化石”提供了在南阿尔卑斯山脉（毛利语：Kā tiritiri o te Moana）冰层形成时大气的迹象。该冰层位于新西兰的奥特拉罗亚，哈乌帕帕 / 塔斯曼冰川拥有新西兰奥特拉瓦岛三分之一的冰川，并且正在迅速消退。被保存在冰芯档案中的空气化石，是科学家乌维·摩根斯特（Uwe Morgenstern）在十多年前收集的。这段视频还记录了我手中的一块冰川碎片，它包含了大约一百年前的空气。“哈乌帕帕”在新西兰的土著语言 Māori 中大致翻译为“空气的宝盒”。这段音频作品是与詹森·约翰斯顿合作制作的，以哈乌帕帕冰川裂缝深处快速融化的冰的录音为底色。

艺术家为两件作品（云的反照律与气的化石）制作的阐释视频。
Informational Video for two art works (Albedo of Clouds and Fossils of Air) produced by Janine Randerson.

Fossils of Air is a moving image work that explores the air in glacial ice from Haupapa/Tasman glacier; both real, imagined and animated. The video reveals tiny bubbles of the atmosphere—including greenhouse gases like carbon dioxide and methane—pressed inside the ice. These air pocket “fossils” provide indications of what the atmosphere was like when each layer of ice formed in Kā Tiritiri o te Moana, Aotearoa/New Zealand’s Southern Alpine mountain chain. Haupapa/ Tasman glacier holds one third of all of Aotearoa New Zealand’s glacial ice and it is retreating rapidly. Fossils of Air includes images of an ice core from Haupapa/Tasman that was collected by scientist Uwe Morgenstern over a decade ago and is held in an Ice Core archive. The video also documents a fallen fragment of the glacier, held in my hands, which contains an estimated one hundred years of air. Haupapa loosely translates as a treasure box of air of winds in Te Reo Māori, the indigenous language of Aotearoa/New Zealand.



第二章 CHAPTER II



楼板
黄泽林
Interarea
Huang Zelin

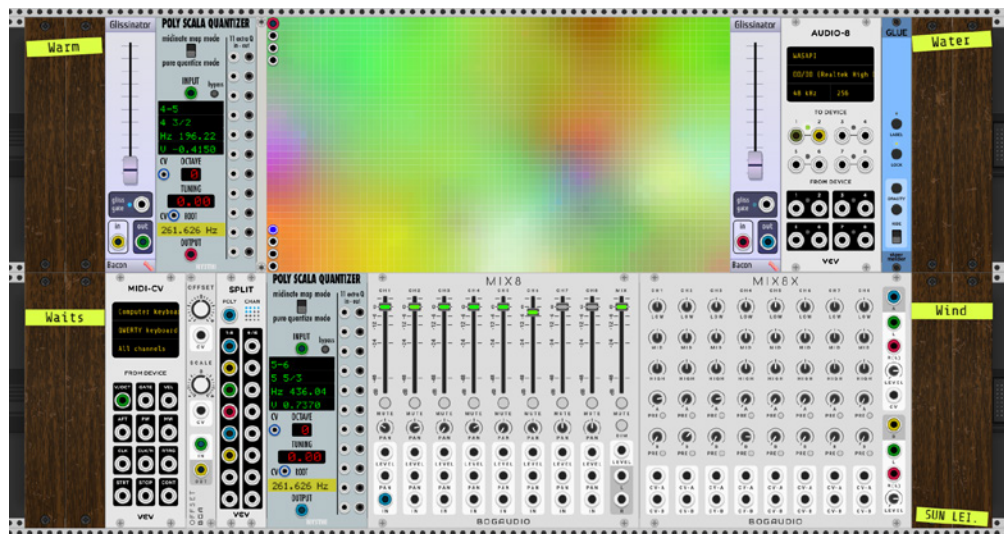
从大地与天空，再到粒子之间，空气的尺度比我们日常所熟悉的要更广阔、也更细微。也由此引发了建筑师们的进一步思考：如何将自然现象中的尺度和丰富的内涵引入建筑？可否从环境和感知上塑造空间，而非仅仅将建筑作为经济分配和功能性的实体。这种思考也引发了设计范式的转变，设计的重点从实体转向气候。同时，设计工具也从形态转变为气象原理，例如对流、辐射、压力、传导、湿度等 这同时也对气象控制的复杂性及有效性提出了问题。



暖水待风
孙雷
Warm Water Waits Wind
Sun Lei

Between the earthly and unknown, the scale of air is at once smaller and larger than our daily perception suggests, spanning from microscopic particles to macro phenomena. This dichotomy leads architects to reflect on how this richness of natural scales can be translated into architecture. Could spaces be shaped in accordance with their environment, rather than as an entity for economic gain? Such thinking evokes a paradigm shift, positing that the focus of design should switch from the solid to the void. The tools for design would therefore also shift from Euclidean geometry to a set of meteorological principles, such as convection, radiation, and pressure. This in turn leads to questions regarding the complexity and effects of artificial control over the natural.

04

暖水待风
Warm Water Waits Wind

Lei Sun is a composer, music producer, sound artist, seal engrave expert, multimedia artist, and photographer. He has released numerous solo albums and singles in the UK, France, Austria, Belgium, Spain, Norway, Japan, Hong Kong, Poland, etc. He composes and produces music and sound design for many films and TV plays, music programs, staged plays, parties, live performances, documentaries, advertisements, promotional videos and games. Moreover, he also collaborated with art institutes and government projects domestically or internationally. Projects include sound design for Beijing Olympic Forest Park, sound art design for Arnolfini Art Museum and International Architects Forum in Bristol, UK, etc. He works as a producer for many well-known singers. His photography and seal cutting works have been collected by well-known collectors. He is the co-founder and vice president of the children's education brand Big and Small Planet, in charge of the overall planning and construction of virtual reality and augmented reality projects. He is also project chair of Octo-X Lab.

孙雷，作曲家，音乐制作人，听觉艺术家，篆刻家，多媒体艺术家，摄影师。曾发行过多张个人专辑与单曲，出版范围包括英国，法国，奥地利，比利时，西班牙，挪威，日本，香港，波兰等；曾为多部影视剧，音乐类节目，舞台剧，晚会，实景演出，纪录片，广告，宣传片，游戏作曲并制作过音乐与声音设计；并与国内外多个艺术或实业单位进行过相关合作，如作为顾问为北京奥林匹克森林公园进行过声音景观规划及声音艺术设计，为英国布里斯托 Arnolfini 美术馆与国际建筑师论坛等进行声音艺术设计；为多位知名歌手担当制作人，个人摄影作品与篆刻作品曾被知名收藏家收藏；也是儿童教育品牌《大小星球》联合创始人及副总裁，负责虚拟现实与增强现实项目的整体规划与构建，以及 Octo-X Lab 实验室的项目主持。

2021 版本
孙雷
Sun Lei

声音系统
Sound System

早期宇宙的历史可以用三件事来概括：体积增加，时间流逝，以及温度下降。就我们的宇宙而言，这三件事讲的是同一个故事：随着空间扩张，时间流逝，温度也下降了。其中只有一个过程需要具体研究，人们选择了温度。人们谈论最多的话题是天气，这并非偶然。美国的新英格兰人抱怨东风的到来，中国人耐心等待着第一场春雨唤醒已经播种的土地，阿拉伯人一遇见陌生人就会询问雨到底下在了何方。暖水在等待风。

Three things epitomize the early history of the cosmos: space expands, time elapses, and temperature drops. As far as our universe is concerned, the three things tell the same story: as space expands, time passes, and temperature cools. There was only one process that requires careful studies, in which human chose the temperature. People talked about the weather most. Chinese wait patiently for the first spring rain to awaken their sown fields. The Arab, once meeting a stranger, will ask where the rain is coming. Warm water is waiting for the wind.



Philippe Rahm is a swiss architect, principal in the office of "Philippe Rahm architectes", based in Paris, France. His work, which extends the field of architecture from the physiological to the meteorological, has received an international audience in the context of sustainability. His recent work includes the first prize for the Farini competition (60 ha) in Milan in 2019, the 70 hectares Central Park in Taichung, Taiwan, completed in December 2020, the Agora of the French National Radio in Paris, a 2700 m2 Exhibition architecture for Luma Foundation in Arles, France. He has held professorships at GSD Harvard University, Columbia, Cornell or Princeton Universities. He is a tenured associate professor at the National Superior School of Architecture in Versailles, France (ENSA-V). His work has been exhibited in 2017 at the Chicago and Seoul Architecture Biennales.



05

气象建筑 Meteorological Architecture

2008 - 至今
菲利普·拉姆
Philippe Rahm

建筑设计
Architectural Design

建筑和城市在传统意义上是基于气候、舒适和健康的，我们可以在维特鲁威、帕拉迪奥或阿尔贝蒂的论文中读到：“在风和阳光之下，温度和湿度的变化影响了城市和建筑的形状。”20世纪下半叶，由于供暖、空调系统、水泵和冰箱大量消耗化石能源，加剧了温室效应和全球变暖。城市规划和建筑长期忽略这些根本原因。可持续发展和气候变化迫使建筑师和城市设计师认真考虑气候问题，在设计时更多地考虑当地的气候环境和能源资源。面对21世纪的气候挑战，我们建议在其固有的气候特性上重新设定我们的学科，空气、光、热或湿度是建筑的真实材料，对流、热传导、蒸发、发射率或散发率是构成建筑和城市的设计工具，并通过唯物辩证法，实现审美价值和社会价值的革命。

Architecture and urbanism were traditionally based on climate, comfort and health, as we can read in treatises of Vitruvius, Palladio or Alberti, where exposure to wind and sun, variations in temperature and humidity influenced the shapes of cities and buildings. These fundamental causes of urban planning and buildings were ignored in the second half of the 20th century thanks to the enormous use of fossil energy by heating and air conditioning systems, pumps and refrigerators, that today cause the greenhouse effect and global warming. Sustainability and fight against climate change force the architects and urban designer to take back seriously the climatic issue in order to base their design on more consideration to the local climatic context and energy resources. Faced with the climatic challenge of the 21st century, we propose to reset our discipline on its intrinsic climatic qualities, where air, light, heat or humidity are recognized as real materials of building, convection, thermal conduction, evaporation, emissivity, or effusivity are becoming design tools for composing architecture and cities, and through materialism dialectic, are able to revolutionize esthetic and social values.

菲利普·朗恩，瑞士建筑师，法国巴黎“菲利普朗恩建筑事务所（Philippe Rahm architectes）”主持建筑师。其作品致力于拓展建筑设计至生理学与气象学领域，并在可持续性发展领域下具有国际影响力。他是亚伦·贝茨基（Aaron Betsky）2008年威尼斯建筑双年展（Architectural Venice Biennale）的25位建筑师之一。同时，他也在世界各地有多次个展，如 Archilab, Orléans, 法国, 2000; SF-MoMA 2001; 巴黎蓬皮杜中心, 2003-2007年；路易斯安那博物馆, 丹麦, 2009年；古根海姆博物馆, 纽约, 2010; Maxxi, 罗马, 2014)等。他也在耶鲁大学、北京论坛、加州大学洛杉矶分校和ETH论坛（Zürich）等各个场所演讲。

DS+R Architects was established in 1981 as a design studio located in New York. Its business covers architecture, urban design, installation art, multimedia performance, digital media and other fields. DS+R focuses on cultural and public projects, and is committed to solving the changes in the role of institutions and the future of the city. The studio is located in New York and is composed of more than 100 architects, designers, artists and researchers. It is led by four partners, Elizabeth Diller, Ricardo Scofidio, Charles Renfro, and Benjamin Gilmartin. DS+R was named "100 Most Influential People" by Time Magazine and won the first grant from the MacArthur Foundation in the field of architecture. The foundation considers Diller and Scofidio to be "architects, they Created an alternative architectural form that combines design, performance, and architectural practice", combining design and electronic media in the context of cultural and architectural theory and criticism. Their work explored the role of space in our culture, and clarified that architecture far exceeds construction itself—it is ubiquitous as a physical form of social relations.

06

模糊大楼 Blur Building

2002
DS+R 建筑事务所
Diller Scofidio + Renfro

建筑设计
Architecture Design

建筑材料通常坚实可触，而模糊大楼是一种大气的建筑——建筑整体由自然和人造雾团建造而成。水从纳沙泰尔湖中抽取出来，经过过滤，通过 35000 个高压喷嘴喷射成细雾，构成一种沉浸式的氛围。作品通过将建筑化为无形的云雾，向人们对空间环境的感知方式发问。在此，建筑的物质性被解构，“整个展览馆中唯一的展品是文化对视觉的依赖”（Diller）。

Architecture is often perceived as a tangible entity, yet Blur Building is an architecture of atmosphere—a fog mass resulting from natural and manmade forces. Water is pumped from Lake Neuchâtel, filtered, and shot as a fine mist through 35,000 high-pressure nozzles. Contrary to immersive environments that strive for visual fidelity in high-definition with ever-greater technical virtuosity, Blur is decidedly low-definition. By turning the solid building into a shapeless cloud, the project questions our way of perceiving spatial environments. With concrete materiality dissolved, “it was an exhibition pavilion with nothing on display except for cultural dependency on vision.” (Diller)



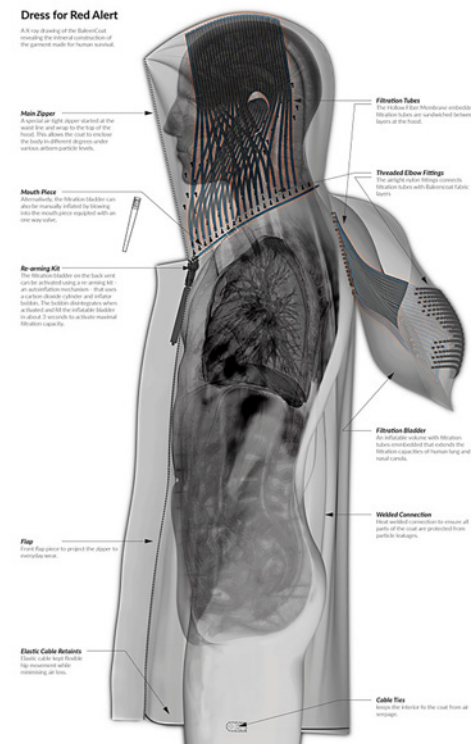
DS+R 建筑事务所成立于 1981 年，是一家位于纽约的设计工作室。其业务涵盖建筑、城市设计、装置艺术、多媒体艺术、数字媒体等领域。DS+R 专注于文化及公共项目，致力于解决机构角色变化和城市未来的问题。该工作室位于纽约，由超过 100 名建筑师、设计师、艺术家和研究人员组成，由 Elizabeth Diller, Ricardo Scofidio, Charles Renfro, Benjamin Gilmartin 四位合伙人领导。DS+R 被《时代》杂志评为“100 位最具影响力的人物”，并获得了麦克阿瑟基金会在建筑领域的第一笔赠款，该基金会认为 Diller 和 Scofidio “创造了一种将设计、性能、建筑实践结合在一起的另类建筑形式”，结合了在文化和建筑理论和批评语境下的设计和电子媒体。他们的工作探索了空间在我们的文化中发挥的作用，并阐明了建筑远超于建造本身的意义——它作为一种表现社会关系的物理形式，是无处不在的。

Zherui Wang is a New York based designer and researcher. His work explores the issues of environmental uncertainties through design, research and making; and has been featured in New York, Toronto, Chicago, and Buffalo, NY.

Wang has taught design studios and seminars at the University of Pennsylvania, Princeton University and Pratt Institute, and has contributed to the design and research endeavours at various offices and institutions, including Barkow Leibinger, Princeton Andlinger Center for Energy and the Environment, and Columbia C-lab. He is the 2020-21 Peter Reyner Banham Fellow at SUNY Buffalo.

Wang holds a BArch from Pratt Institute, a post-professional MArch and Media+Modernity Certificate from Princeton University, where he was awarded the Lee & Norman Rosenfeld Award and the Suzanne Kolarik Underwood Prize.

王哲睿是一名设计师和研究员，他的设计及研究探索环境的脆弱性，并在纽约、多伦多、芝加哥和纽约州布法罗等多地展出。他曾在宾夕法尼亚大学、普林斯顿大学和普拉特学院教授设计课程，并为包括 Barkow Leibinger、普林斯顿安德林格能源与环境中心和哥伦比亚大学在内的多个机构和研究室做出了贡献。他也是纽约州立大学布法罗分校 2020-21 年度 Peter Reyner Banham 研究员。他在普瑞特建筑学院获得建筑学学士学位，并获得 Alpha Rho Chi Medal, Pratt Endowment 奖学金，以及 Lee & Norman Rosenfeld 最佳论文奖。他拥有普林斯顿大学的建筑专业性硕士学位，他的题为《气候作为媒介》的论文被授予苏珊娜·科拉里克·安德伍德奖，这是普林斯顿大学的最高荣誉奖。



气候作为媒介 Climate as Medium

2019
王哲睿
Zherui Wang

服装、思辨设计
Apparel, Speculative Design

空气污染不可见却极有渗透性，是未来城市中对人类健康最致命的威胁之一。空气污染可扩散，但地区政府却时常各自为政：如果单靠公共政策无法解决危机，那就需要依靠人力资本，来通过设计代理，应对环境的变化，以延长人类的生存。气候作为媒介这一作品使用中空纤维膜（一种吸管状的纳米材料）作为建筑表皮过滤、调解空气中的有害颗粒——成为一层可呼吸的立面。大气污染这一公共领域危机，指向了一种身体与城市尺度上全新的界面 - 空间关系。

Mostly invisible, but physically influential, air pollution claims 1 of 9 lives and threatens the future of our cities. 92% of the population in the world, rural or urban, lives in places with air quality above the WHO guidelines. In Beijing, the concentration of pm 2.5 particles in itself is 7.3 times the safety level, resulting in an annual death of $\pm 1,944,436$ individuals.

In a world of inconsistent governance, where policy-making alone does not seem to protect the citizens, it rests upon human capitals to confront the crisis on an individual or communal basis. Climate as a Medium capitalizes the mediatic and mediation potential of hollow fiber membrane (a straw-like nanometer scale material) as a building material for respiratory architecture. The proposed are three architectural artifacts — interventions that augment a new form of transparency while filter undesirable particles — for survival.

At the body scale, Baleen Coat is a waist-long wearable capable of air filtration when activated by a re-arming kit (inflator). Encased by the coat, citizens can amplify their breathing surfaces through a field of tubular pores on the garment. Skin-graft is a spongy fenestration system for existing buildings. In revisiting the disciplinary reference, the dome is a cautionary urban scale intervention that regulates airborne content with maximized area of dome surface.

The collapse of air as a collective common has induced a new surface-to-volume relationship. These artifacts are the beginning of an alternative lifestyle — a new way to breathe, a new way to live, and a new way to be.



Aerocene is a collaborative project that designs a fuel-free hot air balloon that lifts a person traverses the sky by only sun and air we all breathe. Without the use of solar panels or batteries, helium, hydrogen or other rare gases, it develops a sustainable flying method innovative to the public, and suggests the green application of the air.

A poetic tool for imagining a renewed zero-carbon era without fossil fuels, the Aerocene Backpack is intended to be borrowed or built autonomously. The development of aerosolar sculptures and SensAIR devices are always evolving through a collective process of construction and an open-source approach, and anyone is invited to launch their own sculpture and join the transnational Aerocene community of artists, geographers, philosophers, thinkers, scientists, balloonists, technologists and other enthusiasts in this tactile and engaging way in becoming aerosolar—co-thinking, sensing and experiencing other possible futures in a renewed era, the one of the Aerocene.

If it's a sunny day and not too windy, you can take off on your own aerosolar journeys, tracing aeroglyphs—signatures of and for the air—towards the planetary declaration of independence from fossil fuels.

气的纪元 Aerocene

2016- 至今

托马斯·萨拉切诺

开发团队：Aerocene 基金会，当地社区

联合设计：托马斯·萨拉切诺，亚历克斯·伯切纳，巴勃罗·苏亚雷斯，加纳特·孟德尔·德斯拉兹，红十字会红新月会，萨莎·恩格尔曼氏，约尔汤姆森，于图·布朗斯威格 IAK 建筑学院的“成为飞行员”课程的学员。

Tomás Saraceno

Developer: Aerocene Foundation and community.

Collaborated Design: Tomás Saraceno, Pablo Suarez and Janot Mendler de Suarez, Red Cross Red Crescent, Sasha Engelmann, Jol Thomson, and IAK Architecture-related Art Institute at TU-Braunschweig students of the "Becoming Pilots" course, in particular Alex Bouchner, and Studio Tomás Saraceno.

材料：气球，帆布背包，回收塑料瓶

传感装置：空气质量传感器测量，空气质量，丈量压力，湿度和温度的内部和外部传感器，远程操作的照片和视频相机，GPS 跟踪器，便携式太阳能电池，远程 wifi 模块和天线，计算机接口。

Materials: Ripstop balloon, canvas backpack, recycled plastic bottle

Sensing devices: Air quality internal and external sensors measuring air quality, pressure, humidity and temperature, remotely operated photo and video camera, GPS tracker, portable solar power bank, long range wifi module and antenna, computer interface.

开源许可：CC BY-SA 4.0

Open Source Permission: CC BY-SA 4.0 license.

Aerocene 是一个合作项目，它设计了一个无需燃料的热气球，可以让人仅通过阳光和空气的能量就可以穿越天空。在不使用太阳能电池板、氦、氢或其他稀有气体的情况下，它为公众开发了一种可持续的创新飞行方法，提倡了一种绿色使用空气的方式。

Aerocene 背包是一种诗意化的工具，在没有化石燃料的新的零碳时代，它可以被自发地借用或制作出来。气溶胶雕塑和 SensAIR 设备的开发始终通过集体构建和开放资源的方式不断发展；任何人都可以被邀请创造自己的雕塑，以一种触觉的、参与式的方式加入由艺术家、地理学家、哲学家、思想家、科学家、热气球飞行员、技术人员和其他爱好者们组成的社区中，共同思考、感知和体验新时代中的未来。

如果天气晴朗，风也不太大，你可以开始你自己的航天之旅，在天空中画出航空符号：即是天空书，也是走向脱离化石燃料的星球独立宣言。

Tomás Saraceno's floating sculptures, artworks and interactive installations challenge ways of inhabiting and sensing the environment. From collaborations with the air to spider/webs, he envisions renewed relationships with the terrestrial, atmospheric, and cosmic realms. Saraceno's community projects Aerocene and Arachnophilia furthermore invite all to deepen an understanding of environmental justice and interspecies cohabitation. He has lectured in institutions worldwide, and directed the Institute of Architecture-related Art (IAK) at Braunschweig University of Technology, Germany (2014–2016); and held residencies at Centre National d'Études Spatiales (2014–2015), MIT Center for Art, Science & Technology (2012–ongoing) and Atelier Calder (2010), among others.

托马斯·萨拉切诺 (Tomás Saraceno) 的漂浮雕塑、艺术品和互动装置对居住和感知方式提出了挑战。从以空气为媒介到蜘蛛网，他想象着与陆地、大气和宇宙领域的新关系。萨拉切诺的社区项目 "Aerocene" 和 "Arachnophilia" 进一步加深人们对环境正义和物种间共存的理解。2014-2016 年，他曾在世界各地的机构演讲，并指导德国布伦瑞克理工大学建筑 - 艺术研究所；曾在国家空间中心 (2014-2015)、麻省理工学院艺术、科学与技术中心 (2012 - 至今) 和考尔德工作室 (2010) 等地担任驻地工作。

楼板 Interarea

2021
黄泽林
Zelin Huang

建筑装置
Architectural Installation

在本次展览中，参展装置基于解读客观的场地环境特质而被呈现。通过在场地中发现特征，克服限制，获得线索，最终一个若隐若现，通透柔软的楼板装置被提出。装置的置入调整了空间的高度比例，使空间尺度开始宜人舒适；顶部的光线穿过透明的新楼板被过滤后再传达到地面，让空间渗进了新的色彩与光影；周边的物件，外部的草地和行走的人们以隐约的倒影方式被吸附在装置光滑而透明的材质表面；塑造装置形体的结构拉索，在光的照射下如一片纤细的森林影子投射到下部场所的表面。最终，装置的出现既作为客观场地的一部分，也通过和周边事物发生相关性引发新的空间 / 环境现象。

楼板 / 基面，作为人造建筑环境中基本的构成元素之一，是一种怎样的存在呢？回顾当代的建筑，似乎目前大部分建筑中的楼板更多的是一种有关市场经济的概念，除此之外好像难以找到其他性能。同样作为支撑丰富生活的基面，楼板这种人造面为何会与海、陆、空这些自然面的丰富度相差甚远呢？本次装置也是探索建筑基本元素崭新可能性的一次延伸思考。

The installation in this exhibition is presented based on the interpretation of the site. By discovering features, overcoming limitations and obtaining clues in the site, an atmospheric, transparent and soft floor installation is proposed. The floor installation adjusted the height ratio of the space to made the scale of the space become pleasant and comfortable; The light on the top passes through the installation is filtered and transmitted to the ground and infiltrating new colors and light in the space; The surrounding objects, the grass outside and pedestrian are absorbed on the installation's smooth and transparent surface in a faint reflection manner; The structural cable under the illumination of the light casts a shadow as a slender forest onto the surface of the lower space. Eventually, the installation is not just part of the place physically, but also triggers new spatial/environmental phenomena through the correlation with the surroundings.

黄泽林，建筑师，英国东伦敦大学建筑学硕士与中国深圳大学艺术学学士。黄先生于 2006 年至 2013 年工作于“ARUP | 英国奥雅纳工程顾问深圳分公司”建筑组，于 2015 年设立“黄泽林·空气联盟建筑事务所”。目前专注于在结合现象哲学、自然物理学和建筑学三者之间探寻建筑创作的手段。

Floor/surface, is one of the fundamental elements in Architecture, what kind of existential characteristic is it? Observing the contemporary buildings, it seems that the floor in most buildings at present are more of a demand for market economy, in addition, it seems difficult to find other properties. As a fundamental surface for lives, why is the richness of artificial surfaces such as floor so different from natural surfaces such as sea, land and air? The installation of this exhibition is also an extended reflection on exploring the new possibilities of the fundamental elements in Architecture.

Zelin Huang, Architect, Master of Architecture from University of East London, UK and Bachelor of Arts from Shenzhen University, China. Mr. Huang worked in the ARUP's Architectural team from 2006 to 2013 and established "Huang Zelin·Aether Architects" in 2015. At present, he focuses on exploring the architectural theory between the combination of Phenomenological philosophy, Natural physics and Architecture.

第三章

CHAPTER III

从地表到无尽宇宙之间并非真空，而是充满了来自自然现象和人工物的振动：从水蒸气波到宇宙 UV 射线，从嗡嗡作响的无人机到 5G 网络 大气已不再是纯粹的自然物，而是由全球政治、军事和经济共同塑造的基础设施。“云”与“云平台”同构，在这个新的范式中，占领云端已经成为新的占领陆地与身体的方式。

只有从宇宙回看包裹陆地的大气，将整体环境视作客体，大气才成为可被编辑与创作的媒材。人们对空气的认知依赖技术与图像数据。当远地遥感和卫星图像将大气化为可阅读的图像，根据反射率、区分层级、生成表面，人类活动才能更精确地介入气候控制。图像是认知仪器，将大气化为承载文化想象的媒介；图像也是实验仪器，带领我们从实验室步入景观。

The space from terrene to ether is not empty. Rather, it is full of vibrations from natural phenomena and artificial infrastructures; from water vapor to cosmic rays, from humming drones to 5G and WiFi networks, from aerial operations to communication flows. The “Cloud Platform” is in fact analogous to a “Cloud”. The atmosphere is no longer purely natural, but has become an infrastructure shaped by global political, military, and economic entities. Meanwhile, our perception of these invisible surroundings relies on artificial viewpoints. It is only when we can look back at the Earth from outer space that the atmosphere becomes a tangible, recognizable entity. In this new paradigm, to occupy clouds and cloud platforms is as familiar as occupying the land and self.



大气建筑 -- 可感的云层
赵潇潇

Sentient Clouds: Architecture for the Atmosphere
Zhao Xiaoxiao

Yiyuan Liang was born in Wuhan and now lives in Yunnan Province. He studied painting in his early years and turned to music composing later. His works cover electronics, ambience, new folk music, ballads, minimalism, experimental music, improvisation and other genres. In addition, he produces music for film, videos, theatre, modern dance, exhibitions, architecture and the environment.



梁奕源

爛柯時間表

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甲亥，九五 JiaHai, JiuWu

2013-2015
梁奕源
Yiyuan Liang

实验音乐
Experimental Music

该音乐组曲通过效果器采集吉他对音箱的反馈，并在演奏的同时进行编辑，形成类似于电子信号的音色和氛围。两首作品分别收录于专辑《烂柯时间表》（2013）、《捕风之事及其他》（2015）中，错乱的天干地支命名和烂柯的典故也抽象呈现了前现代的意趣，它们和吉他演奏一起融入于电子信号里，将貌似田园山水般的所指，转向未来与虚无交织的茫然之中。

The music suit collects the guitar feedback through the effector. The sound is edited as it is playing to form an ambience field similar to electronic signals. The two singles belong to the album The Vexation of Spirit and More (2013) and When Time Decays (2015), in which the literary quotation of 'Lan Ke' (烂柯) and the garbled name of 'sexagenary cycle' (天干地支) sketch the charm of pre-modern Chinese cultures. The guitar music fuses into electronic signals, turning the pastoral scenery to the amalgamation of emptiness and futurism.

梁奕源于武汉，现居云南，早年习画，后转向音乐创作，作品涉及电子、氛围、新民乐、民谣、极简、实验音乐、自由即兴等类型。除此之外，也为电影、实验影像、戏剧、现代舞、展览、建筑及环境等进行音乐创作。

Xiaoxiao Zhao, Architecture Designer and researcher, graduated from China Central Academy of Fine Arts and Cooper Union, exchanged in Oslo School of Architecture and Design. She has worked in Rockwell Group in New York, and Xing Design in Shanghai. Her practice ranges from architectural design, research, installation to painting and wearable design. She is interested in environmental technologies and Narrative Design, spatial politics and Urban Sociology, Cyborg and Feminism. Her works have been exhibited in the National Art Museum of China and Venice Biennial. Her research has been published on e-flux magazine. She also participated in teaching in Cooper Union and Architectural Association as research assistant, and research programs in Institute for Advanced Architecture of Catalonia.



可感的云层 ——一种大气建筑

Sentient Cloud – Architecture for the Atmosphere

2019, 2021 版本
赵潇潇
Zhao Xiaoxiao

思辨设计
Speculative Design

“可感的云层”是由一系列漂浮装置所构成的环境感知与干预系统。装置作品呈现了不同信号频段在大气层中的纵向分布，以及各频段内的斗争事件。4个动画分别讲述了“宇宙射线”、“紫外线”、“水汽信号”、“5G 移动通讯信号”这四种射线与对应的“可感云层”的环境叙事。通过对大气的技术性想象，该作品旨在建立个体与环境之间的新连结，扩展公众对于社会生态等公共议题的具体感知，将设计的场域扩展到充满粒子、电子与振动波的大气层。

‘Sentient Cloud’ is a set of installations that interpret and interfere with the environment. The project speculates on the environmental perception of diverse rations waves from cosmic rays and UV radiation, to water vapor signals, and 5G mobile communication networks. The 4 videos reveal the vertical distribution and conflicts of these invisible vibrations. Through technological imaginations for the atmosphere, the project aims to build new relationships of individuals and the environment, extend our awareness of social ecological problems, and extend the realm of design beyond solid matters.

赵潇潇是一名建筑设计师和研究者，毕业于中央美术学院和纽约库珀联盟，曾赴挪威奥斯陆建筑设计学院交换。曾就职于纽约 Rockwell Group, 上海行之建筑设计事务所等，参与项目包括迪拜市中心规划设计、策略与叙事设计等。个人作品包括研究、绘画、装置、可穿戴设备等，作品曾于中国美术馆，威尼斯双年展等展出，并发表于 e-flux 期刊等。曾参与 Cooper Union、Architectural Association 的设计工作室与工作坊教学，以及加泰罗尼亚高等建筑研究院、中央美术学院的研究项目。作品研究方向涉及环境技术与身体政治，现代城市空间与城市社会学，赛博格与女性主义等。

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种子，图像，土地
Seed, Image, Ground

2020
阿维拉多·吉尔·福尼尔，尤西·帕里卡
声音设计：玛丽亚·安杜埃萨·奥尔梅多
Abelardo Gil-Fournier, Jussi Parikka
Sound design: María Andueza Olmedo

双屏影像，9分38秒
Two channel video, 9'38"

支持：操作性图像项目，布拉格表演艺术学院
摄影系视觉文化系
资助：捷克科学基金会项目 19-26865X
Support: Operational Images Project,
Visual Culture in the Department
of Photography at the Academy of
Performing Arts, Prague.
Funding: Czech Science Foundation
project 19-26865X

散文影像讲述了气流、风、和生长的技术。它探索了种子、空中作业、图像以及将地表信息化为数据之间的联系。风如何化为图像？如何编制风？风与大气的界面如何映射我们的技术文化？从农业到数据文化，如何制造增长？围绕这些问题，作品主要呈现了空中应用技术“种子轰炸”（Seed Bombing）在植育和环境修复上的农业用途，探寻人们对植物、空中作业、和土地认知的转变。作品采用实验媒介考古学的方法描绘生长与呈像，徐徐展开对环境管理的讨论。通过航拍图像，专业人士能够通过视觉图像和数据分析，进一步掌握农作信息状况，使播种更加自动化和精确化。它证明了植物知识史、以及视觉分析下的生态环境史，是一部图像的历史，也是关乎循环、速度、自动化飞机的历史。



Seed, Image, Ground is a video essay that addresses techniques of air, wind, and growth. The work investigates the link between seeds, aerial operations, photographic images and the transformation of earth surfaces into data. From an initial question – how does wind become an image? – the work continues: how do you fabricate wind? How are surfaces of air and atmospheres addressed and implied in our technological culture? How do you fabricate growth, from agriculture to data culture? Responding to these questions, the work presents the operational techniques of seed bombing for agricultural growth and restoration, exploring the epistemological transformation of plants, aircrafts, and land. These seed bombing sequences are then entwined to a wider context of historical images, related to the dissemination of botanical knowledge, in a fast-paced, two-screen montage. Following an experimental media archaeological approach to imaging and growth, the essay lets a discussion on environmental management unfold. Through aerial footage, professionals are able to handle the growth situation automatically and specially through visual images and data analysis. It demonstrates how the history of botanic knowledge and visual surveys of green surfaces is a history of images, and as such, a history of circulation, speed and motorised aircraft.

Abelardo Gil-Fournier is a Spanish artist and researcher, born in Salé (Morocco) and based in Madrid. Originally trained in Physics, he holds a PhD in Arts from the Winchester School of Art (UK). He currently works at FAMU Prague (Czech Republic) as part of the project Operational Images and Visual Culture and is a member of AMT Archaeologies of Media and Technology.

Gil-Fournier's practice addresses the entwining of image surfaces with the living crust of the planet. In his work, images are understood as temporal processes operating through manifolds of varied materiality while involving different scales at the same time. As a consequence of this, his work encompasses different techniques, spanning from sound and video installations to computational processes such as machine learning, including assemblages where the living conflates with the animate.

His work has been shown and discussed in international venues such as Transmediale (Berlin), Medialab Prado (Madrid), Strelka Institute (Moscow), Galeria Millenium (Lisbon), Fotomuseum Winterthur (Switzerland), MUSAC and Fundación Cerezales Antonino y Cinia (León), Le Bal (Paris), Fotocolección (Barcelona), NeMe Center of Art (Cyprus), Matadero Center of Art (Madrid), Laboral Center of Art (Gijón) as well as in Cultural Centers of Spain in Mexico, Nicaragua and El Salvador. Together with Jussi Parikka, he is currently working on a book on vegetal surfaces and the multi-scalar materialities of the image.

Jussi Parikka is a Finnish media theorist and writer Jussi Parikka is Professor of Technological Culture at University of Southampton's Winchester School of Art. He is also Visiting Professor at FAMU, in Prague, where he directs the project Operational Images and Visual Culture (2019-2023, funded by the Czech Science Foundation). He is the author of several books on digital culture and media archaeology, environmental humanities and cultural theory, including: Digital Contagions: A Media Archaeology of Computer Viruses (2nd ed. 2016), Insect Media (2010), A Geology of Media (2015) as well as What is Media Archaeology? His co-edited volume (with Erkki Huhtamo) titled Media Archaeology: Approaches, Applications, and Implications has been translated into Chinese (Fudan University Press, 2019). Recently he published the co-edited volume Photography Off the Scale (2021, with Tomas Dvorak) and in Autumn 2021 his co-authored book (with Lori Emerson and Darren Wershler) The Lab Book is out.

阿维拉多 吉尔 - 福尼尔 (Abelardo Gil-Fournier) 是一位艺术家和研究者，其工作探讨了当代图像与行星活动表面之间的关系。他拥有温彻斯特艺术学院的博士学位，目前是布拉格 FAMU 的博士后研究员，是 AMT 媒体与技术考古学的成员，也是马德里欧洲大学的兼职讲师。他的实践基于对平台（装置，设备和工作室）的精心设计。这些平台被视为有开放机制，呈现了艺术，知识和政治的相交。他的作品已展出于 Transmediale, Matadero Center of Art, Galeria Millenium (Lisbon), MUSAC, Fundación Cerezales Antonino y Cinia, Medialab Prado, IKKM, Baluarte, Laboral Center of Art 等文化中心。

尤西·帕里卡 (Jussi Parikka) 博士是南安普敦大学温彻斯特艺术学院的教授，也是图尔库大学数字文化理论专业的教授。在 WSA 上，Parikka 是 AMT（媒体与技术考古学）研究小组的创始人之一。他还是布拉格表演艺术学院 FAMU 的客座教授，领导项目“操作图像和视觉文化”（2019-2023，由捷克科学基金会资助）。帕里卡的书籍主题广泛丰富，他对网络文化，当代社会的美学和媒体考古学也有批判性的理解。例如媒体生态学三部曲《数字传染》(Digital Contagions, 2007)，《昆虫媒体》(Insect Media, 2010) 和《媒介地质学》(Media Geology, 2015)，这些内容涉及技术媒体文化的环境背景。他也著有手册《缓慢的当代暴力：技术文化的破坏环境》(A Slow, Contemporary Violence, 2016) 和短篇合作书籍《持留》(Remain, 2019)。此外，帕里卡还出版了书籍《什么是媒体考古学》(What is Media Archaeology, 2012)。即将出版物为《尺度外的摄影》(Photography Off the Scale) 系列（预计到 2020 年末）。



潘晓楠
开幕式舞蹈表演
《暖水待风》
Xiao nan Pan
Improvisation Performance on Opening
Music: Warm Water Waits Wind

系列论坛 Panel Series

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2021 年极端气候频现，暴雨、野火、雷电、地震、飓风……动辄夺取数十万生命。即使有技术手段的辅助，提早预知天气仍旧是一大难题；而 19 世纪现代天气预报发明之前，天空更是神秘的存在。现代天气预报的出现，也是由航海家、画家、科学家、天文学家、工程师、军事家、甚至投机分子……共同推动的结果。征服风云诡谲的天空，也意味着对新殖民地的登陆，间接影响了全球霸权的建立。这一过程并未随着殖民主义的结束而告一段落，气候所牵动的自然资源，仍旧是各国争相角逐的领地。通过改造陆地、海洋和天空来扩大宜居环境，也是现代文明的重要特征。

现代天气预报的历史，与军事飞行的历史，以及通讯技术的发展，也构成一部平行史。19 世纪中叶，中法两国为与沙皇俄国争夺巴尔干半岛而发动克里木战争，一场 11-12 级的风暴在海上掀起万丈狂澜，险些使得舰队全军覆没。这场战争推动了第一幅天气预报的绘制，而后气象局也委托科学家进行无线电通讯技术的研究，收集各地的气象数据用于预测。百年后，现代战争催生了毒气等化学武器与天气控制技术，根据 Peter Sloterdijk 的说法，二十世纪起源与某个特定的日期：1915 年 4 月 22 日，法国北部的德国军队使用氯气以试图进行无差别的消灭行动。在那之前，拿破仑式的战争皆是以攻击对手为主要功能。毒气标志着从古典战争向恐怖主义的转变。从此，战争不再单单意味着杀灭敌军的肉体，而也是杀灭敌军的环境。环境即是媒介，恐怖就是对环境暴力。

人工的、或自然的气候，都无差别的包裹着所有人；二十世纪同时发展起来的通讯及数字技术，也渗入日常生活，主宰者我们感受世界的方式。John Durham Peters 在他的书《奇云：走向元素媒体哲学》中提出“媒体即环境，环境即媒体”，数据云与积雨云同构，两者都揭示了一个基本事实：自然世界和技术世界并没有那么大差别。无处不在的数字设备，让我们将媒体视为环境的一部分，栖息地的一部分。当代技术可以被视为大气和元素，模糊了人工环境与生物环境之间的界限。

系列论坛由《振动的云层》延伸而来。通过与中央美院设计学院、新时线媒体中心、假杂志、群岛、卷宗等多个机构合作，将议题带到不同城市，从气象设计、媒介哲学、以及地缘政治等多维度介入。

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电磁波引发的大气政治 The Politics of Atmosphere Triggered by Electromagnetic Waves

1

联合主办机构：中央美院设计学院 x CVSZ x 设计互联

嘉宾：韩涛 x 赵潇潇 x 刘昕 x 蔡艺璇

Panelists: Han Tao, Zhao Xiaoxiao, Liu Xin, Cai Yixuan

解剖大气 ---- 身体作为气象设计中的生理传感器 Atmosphere Anatomies: Body as Parameter in Climate Design

2

联合主办机构：CVSZ x 设计互联

媒体合作：群岛 Books

嘉宾：塞尔维亚·本尼托 x 王哲睿

Panelists: Silvia Benedito x Zherui Wang

大气建筑师：菲利普·朗恩 Atmosphere Architect: Philippe Rahm

3

联合主办机构：卷宗 Wallpaper x CVSZ x 设计互联

特邀主持：程婧如

嘉宾：菲利普·朗恩

Guest Host: Cheng Jingru

Panelist: Philippe Rahm

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4

考古气象：冰川与火山，地质历史及 文明兴衰的见证者

Meteorology Archaeology: Glaciers and
Volcanoes - Witnesses of Geological History
and the Rise and Fall of Civilization

联合主办机构：假杂志 x CVSZ x 设计互联

嘉宾：陈海舒 x 珍妮·兰德森

Panelists: Chen Haishu x Janine Randerson

5

风，种子，热力学与大气控制实验 Wind, Seed, Thermodynamics and Weather Control Experiments

联合主办机构：新时线艺术媒体中心 x CVSZ x 设计互联

嘉宾：阿维拉多 吉尔 - 福尼尔 x 李麟学 x 古畑百合子

Panelists: Abelardo Gil-Founier x Li Linxue x Yuriko Furuhashi

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CONVERSAZIONE

art dialogue practice

电磁波引发的大气政治

The Politics of Atmosphere Triggered
by Electromagnetic Waves

学术主持：宋协伟

嘉宾：韩涛 x 赵潇潇 x 刘昕 x 蔡艺璇

线下活动地点：

中央美院设计学院513教室

线上地点：

扫描二维码添加CVSZ小助手



6/18/2021

(北京时间)

18:00-20:00

(欧洲时间)

12:00-14:00

议题概述

从地表，到对流层、平流层……再到浩渺的宇宙空间，我们所处的大气并非真空，而是充满了由自然现象与人造物所制造的振动和信号：在无线电到微波、红外线、可见波段、紫外线、X射线与伽马射线的频率之间，有网络隔离也有流产的 Google Loon 全球 Wi-Fi 计划，无论是环境监测、气候控制、领空争端、无核区还是太空争霸、Space X 的星链计划……大气层已然不再是纯粹的自然物，而是被全球政治、军事、经济博弈所不断重塑的「偶然的基础设施」。这些暗涌的湍流挟裹着自然与人为的信号，在不同海拔高度上重写着大气的地形。

构建大气地形的“建筑”也指向一种新的空间范式。从地表到无尽上空，数据中心、电信网络、与周卫星……等一系列基础设施构建了一个层层包裹地球的堆栈系统（Stack），构建现代生活基础的重要空间却是我们无法访问的，它们服务于机器视觉与无线电通讯，通过网络连接终端，将我们的身体也拓展到无数节点当中。室内和室外的分界线已经被天线上的频率切换所定义。正如新西兰建筑师马克·维格利（Mark Wigley, 1956）所说，“空间本身被无数不可见的振动所定义、再定义。我们‘调频’到一处空间，而不是‘占据’一处空间，并且通常是同时‘调频’到许多层不同的空间。”

本次对话，由设计互联《振动的云层》展览团队和央美设计学院联合举办。策展人蔡艺璇从展览出发，介绍大气的现代历史、设计师介入气象设计的维度，以及我们当下所面临的紧迫问题。并由建筑师赵潇潇的作品《可感的云层》以及艺术家刘昕“捕捉卫星讯号”的艺术实践切入议题，展开对大气中的电磁波、背后的基础设施、以及政治格局的讨论。最后由设计学院副院长韩涛将当下所面临的气候问题及政治背景放入历史发展的谱系当中，探讨大气的现代意义转向，并对未来提问。



议题概述

建筑师王哲睿预测了一个城市中心面临大气退化的反乌托邦叙事：人类生活在一个重度污染的大气环境下，空气已经变得无法让人呼吸。由此，哲睿设计了一件可以净化空气的大气行走夹克。如果仅靠公共政策不能解决危机，则只能依靠人力资本通过设计来应对环境变化以延长人类生存。

这件作品引发了一个问题：纵使现代建筑和环境管理技术如同一层层衣服包裹着我们，身体依旧是我们直接对抗大气危机的前线。

人类历史上若干重要的人口迁移和生产活动都受到气候变化的影响：距今约一万两千年前的新石器时代，随气温逐渐升高，人类开始了农业种植；小冰河时期的降温，致使挪威皇室向南迁移到哥本哈根，英国葡萄酒产量遭受损失，大量人口迁移到波尔多地区，也间接引起了往后的英法百年战争；明末清初的第四次小冰河期，气温剧降造成北方干旱，粮食大量减产，形成几十年的社会剧烈动荡和战乱……我们习惯以经济、政治和文化的视角思考世界，却忘记了基于“物质”的传统奠定了人与世界的关系，人类对气候环境的需求是最基本的“生理”需求。

与此同时，环境也牵扯着隐晦的生理及情绪变化：“不管我们喜欢与否，我们都是各种形式、颜色、空间环境的奴隶，是天空和大地的臣民。阴雨连绵时候的情绪，和清空万里时候的情绪截然不同。在湿气重的日子里，人会感到心情忧郁；也因雷电可以增加大气中的负离子，暴雨前的人们通常会异常活跃和兴奋。”（Fernando Pessoa, The Book of Disquiet）

在这个背景下，身体如何活动并调节于不同的气候系统？如何从身体出发进行气象设计？本次对话，邀请了建筑师 Silvia Benedito 来谈谈她的新书《大气解剖：论设计、天气和感知》，将天气和氛围作为空间的基础组成部分，通过一系列建筑实例，呈现大气 / 氛围为个人和集体体验不可或缺的一部分。建筑师王哲睿，则着重于他的作品“气候作为媒介”，来介绍他如何通过设计、研究和建造，来探索环境不确定性问题，为所存在的环境危机进行思辨性设计。

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以身体为尺度的气象设计

Atmosphere Anatomies

Body as Parameter in Climate Design

主持人 蔡艺璇

嘉宾 Silvia Benedito

王哲睿

6/26/2021

(北京时间)

20:00-22:00

(欧洲时间)

14:00-18:00



1.25km

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大气建筑师：菲利普·朗恩 Atmosphere Architect Philippe Rahm

主持人 程婧如

嘉宾 菲利普·朗恩

7/3/2021

(北京时间)

20:00-21:30

(欧洲时间)

14:00-15:30



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议题概述

“我认为，建筑的真正目标不是可见的，它不是雕塑、不是物体、不是结构，而是内部，是空间和空间之间的化学品质，是热、湿度、气体和光。”

——Philippe Rahm

我们居住在不可见的气候中，而非可见的实体墙壁中。瑞士建筑师 Philippe Rahm 因此提出了气象建筑学：“建筑是营造气候的艺术”。

由此也引发了建筑本体，以及设计模式的转变：我们不再使用几何、形态、点线面的组合，构成建筑的条件变为对流、传导、蒸发、压力、辐射……等气象条件。建筑师必须绘制气候，而非几何形态：使结构蒸发、使墙壁和天花板升华、从固态转变为气态，制造空间和光——气态的建筑、瓦解的建筑、蒸发的建筑。

此次对话将会介绍他最近在台湾刚刚落成的项目清翠园（Jade Eco Park），他的项目还包括根据气候条件而设计的生活空间“蒸发室”、“室内天文学”，以及更大尺度的“蒸发式建筑”、“对流房屋”以及“气象博物馆”等等。

议题概述

2021 年极端气候频发，河南郑州暴雨引发的洪水，北美西部毁灭性的野火……以及 8 月 14 日，有史以来第一次，北极格陵兰岛上，大约 63 亿吨的雨水倾斜而下，导致 87.2 万平方公里的冰川在一天内融化。科学家预测：冰原的逐渐融化将会导致冰原重量大量减少，地下岩浆释放，从而导致更多的火山爆发。

古老的冰川与火山历经万年，即是许多极端气候（甚至灾害）的始作俑者，其稳定且富庶的自然资源也为无数文明奠定了基础。它们汇聚的不仅是地质历史，也包含政治、宗教、及文明的发展。

1815 年印度尼西亚坦博拉火山爆发，喷发出的火山灰抵达高至 44 公里的平流层，远至英国伦敦亦可见橙红色的天空。同时，云层中大量的火山灰将阳光反射回太空，致使全球平均温度下降 0.4-0.7 摄氏度，英国人说 1816 年是“冻死年”，德国人说 1817 年是“乞丐之年”，也是在寒冷多雨的 1816 年夏天，玛丽·雪莱构思了弗兰克斯坦的故事，伴随着极端气象变化而出现的科学怪人还有吸血鬼鼻祖德古拉。直到多年之后，我们才逐渐拼凑起 19 世纪初的这场自然灾害，与诸多文化艺术和科学想象之间的关联。

由于坦博拉火山的喷发，火山灰在平流层中形成了一个覆盖地球的硫酸盐面纱，细微颗粒在高中气流中流转，最远的一路来到南北极，在冰盖上留下泄露行踪的硫酸钠痕迹，直到一个半世纪之后，考古气象学家才发现它们的存在 (Gillen D'Arcy Wood)。

考古学家在了解一个古老文明历史的时候，会深挖土壤，通过寻找工具和物件来完成历史叙事。而古气候学家，则会通过研究珊瑚礁、挖掘海洋和湖底沉淀物，并且深入冰川和冰盖来寻找有关星球气候历史的线索。他们从冰川中收集样本（称为冰芯），还原封存在冰层中数万年的气候历史。

冰层中常含有大量大气中的颗粒物—尘埃、灰烬、花粉、微量元素和海盐等气溶胶。数千年后，这些颗粒仍然存在于冰中，为过去的全球事件（例如重大火山爆发）提供了物理证据。此外，随着冰层随着时间的推移而压缩，大气中的微小气泡——包括二氧化碳和甲烷等温室气体——会压入冰层。冰川学家勒格兰德说，这些气穴“化石”提供了当那层冰形成时大气的样本。“科学家可以通过对这些气泡进行采样，直接测量当时大气中的温室气体含量。”

此次对话我们将邀请陈海舒和 Janine Randerson 两位艺术家及研究者，从他们对冰川及火山的研究出发，讨论自然媒介所承载的地质历史与文化兴衰的过往。

考古气象：冰川与火山 地质历史及文明兴衰的见证者

**Meteorology Archaeology:
Glaciers and Volcanoes - Witnesses of Geological
History and the Rise and Fall of Civilization**

主持人：蔡艺璇

嘉宾：Janine Randerson

陈海舒

8/29/2021

(北京)

16:00-18:00

(欧洲)

10:00-12:00

(新西兰)

18:00-20:00



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风、种子、热力学 与大气控制实验

Wind, Seed, Thermodynamics and Atmospheric Control Experiments



主持人：新时线媒体艺术中心

CVSZ

嘉宾：Aberlardo Gil- Fournier

Yuriko Furuhashi

李麟学

9/3/2021

(北京时间)

21:00-23:00

9/4/2021

(欧洲时间)

15:00-17:00

(美东时间)

9:00-11:00



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新时线媒体艺术中心
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议题概述

导航、播种、空调、人工降雨、飞行 随着越来越多的科学家及工程师介入大气空间，风、种子和热量已不只是一种自然元素，而被不断的媒介化和技术化。对媒介环境学的研究逐渐脱离了传统的以多伦多传播研究学院和 Marshall McLuhan 为代表的“媒介即是环境 (media as environments)”的生态框架，进而转变为对自然环境化的技术媒介 (technical media that become environmental) 实现更物质化、底层化和系统化的研究。

Abelardo Gil-Fournier 与 Jussi Parikka 合作的散文电影《种子、图像与土地》抛出了这样一个问题：风如何转化为图像？空中作业不仅通过种子轰炸技术影响着植被生长，也通过机器视觉构建了我们在地表的认知。地球表面被捕捉并转化为数据图像，图像即是仪器，带我们走进田野与实验室。植被生长被描绘为图像，图像也定义了土地的形态和肥力。这样大规模的对气象和土地的视觉化和图像化处理，隐射了怎样的技术逻辑与文化？

艺术史与媒体史学者 Yuriko Furuhashi 在《气候媒体：大气控制中的跨太平洋实验》(Climatic Media: Transpacific Experiments in Atmospheric Control) 一书中指出，无论对大气进行何种方式的控制，大气工程的建设都逃不开人类对于生存空间安全性的考量——从军事中的应用，到平民生活中确保食物和水的安全，再至大气控制与二十世纪的地缘和生物政治。大气变化所造成的不安全感，也是现代性技术发展的必然规律。人们通过研发更多技术去克服技术所引发的焦虑，例如发明防毒面具、空气净化器等，然而也因此陷入了一个持续焦虑的循环。

当现代建筑室内引入了冰箱、空调、加湿器等微气候调节装置，人们实现了对空气温度、湿度、成分的主动调控。而为了维持这个微循环系统而付出的热能，也加剧了气候变暖的负担。在热力学建筑体系中，物质、能量、气候、形式、身体和系统形成了能量桥梁。同济大学建筑与城市规划学院的李麟学教授将建筑中的能量流动机理总结为“能量捕获”、“能量协同”与“能量引导”的过程。于是，能量在气候环境、建筑系统和人的身体之间流动与转化。正如美国建筑理论家萨拉·怀汀 (Sarah Whiting) 所讲：“将热力学定律应用于建筑领域，‘空气’便成为空间组织的主角；建筑可理解为一种物质的组织，并由这种组织带来‘能量流动’的秩序，同时平衡与维持建筑的‘物质形式’”。热力学建筑又如何在现代中国的背景下进行实践？

在本次讲座中，三位嘉宾将从各自的研究视角出发，分析人类工业文明和殖民历史中对于陆地、海洋、天空持续性的气象改造，并批判性地回应人类对生活在“可控气候环境”中的渴望与生存空间的不断开拓。(编辑 / 文 郎天玥)

《振动的云层》

2020-2021 设计策展计划获奖与入围方案展

展期：2021 年 4 月 30 日 -2021 年 9 月 18 日

地点：设计互联旗下园景展馆

策展人

蔡艺璇

参展人

阿维拉多 吉尔 - 福尼尔 (西班牙)

Diller Scofidio + Renfro (美国)

黄泽林 (中国)

珍妮·兰德森 (新西兰)

尤西·帕里卡 (芬兰)

卡洛琳娜·苏贝卡 (瑞士)

梁奕源 (中国)

菲利普·朗恩 建筑事务所 (瑞士)

孙雷 (中国)

托马斯·萨拉切诺 (阿根廷)

王哲睿 (美国)

赵潇潇 (中国)

设计互联团队：

副馆长：赵蓉

品牌总监：顾灵

策展人：唐司韵

策展助理：张睿、陈沛

展览经理：周辰琛

展览助理：潘璇

策展及研究团队：Conversazione

项目经理及外联：潘锦心

研究员：曹雪菲、陈思睿

媒体统筹：徐頔

策展助理：李国宁、翁静妍、肖亚汐、张瑞麒

设计团队：

展陈设计师：赵潇潇

展陈设计助理：李思涵、罗森、聂梓伦

平面设计：Pocca

平面设计助理：施婧

志愿者：

李玉燕、郑希婉、段慧仙、程鑫、马佳婕、王琛玥

主办：招商蛇口 | 海上世界文化艺术中心

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互联文化艺术基金会

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互联文化艺术基金会

Vibrating Clouds

2020-2021 Curating Design Plan Winning Exhibition and Shortlisted

Proposal Exhibition

Duration: 2021 April.30th - 2021 September.18th

Location: Sea World Culture and Arts Center, Park View Gallery

Curator

Cai Yixuan

Participants

Abelardo Gil-Fournier (Spanish)

Diller Scofidio + Renfro (United States)

Huang Zelin (China)

Janine Randerson (New Zealand)

Jussi Parikka (Finland)

Karolina Sobecka (Switzerland)

Liang Yiyuan (China)

Philippe Rahm architectes (Switzerland)

Sun Lei (China)

Tomas Saraceno (Argentina)

Wang Zherui (United States)

Zhao Xiaoxiao (China)

Design Society Team

Deputy Director: Zhao Rong

Head of Communication: Gu Ling

Curator: Tang Siyun

Assistant Curator: Zhang Rui, Chen Pei

Exhibition Manager: Zhou Chenchen

Exhibition Assistant: Pan Xuan

Curation and Research Team: Conversazione

Project Manager and Public Relations: Pan Jinxin

Researcher: Cao Xuefei, Chen Sirui

Media Communication: Xu Di

Assistant Curator: Li Guoning, Weng Jingyan, Xiao Yaxi, Zhang Ruilin

Design Team:

Exhibition Designer: Zhao Xiaoxiao

Exhibition Design Assistant: Li Sihan, Luo Sen, Nie Zilun

Graphic Design: Pocca

Graphic Design Assistant: Shi Jing

Volunteer:

Li Yuyan, Zheng Xiwan, Duan Huixian, Cheng Xin, Ma Jiajie, Wang
Chenyue

Initiator & Organizer: China Merchants Shekou (CMSK) | The Sea World
Culture and Arts Center

Presented by: Design Society

Co-organizer: C Foundation, China Merchants Foundation, Design
Society Culture and Arts Foundation

Supported by: Zhaoshang Sub-district Office of Shenzhen Nanshan
District