

# Redesigning the Cloud

## Digital Infrastructures for an Ecosocial Future

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### Capsule

Redesigning the Cloud through Social and Environmental Justice

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### Academic Director

Marina Otero Verzier

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### Academic Coordinator

Ana Robles Pérez

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### Institutions

Eina Obra

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### Description

The cloud is a design project. It is time to redesign it.

Much of our lives unfolds in zeros and ones, in what we call *the cloud*. A space that appears immaterial and limitless, yet depends on data centres, submarine cables, satellites, mines, energy, water, and human labour. Like any infrastructure, the cloud is not neutral: it is shaped by technical, economic, and political decisions that determine who can access it, how it is organised, what futures it enables, and who ultimately benefits from it.

Just as language defines what can be said, digital infrastructures shape how we work, communicate, remember, and imagine. The platforms we rely on encourage particular ways of understanding the world, while generating their own forms of expression and visual cultures. The rapid expansion of artificial intelligence and the increasing availability of computational power are accelerating these transformations, bringing some of the defining conflicts of our time into sharper focus.

Every prompt relies on infrastructures distributed across the globe, whose environmental, social, and political footprint continues to grow: servers that consume vast amounts of electricity and generate emissions; mines that destroy mountains to extract the minerals required to manufacture electronic devices; and digital platforms that amplify disinformation and violence.

Yet these infrastructures are not inevitable. They have been designed—and for that very reason, they can be redesigned.

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|                    | <p>This capsule approaches the cloud as an architectural, political, and cultural project. Bringing together architecture, design, art, media studies, environmental humanities, and political ecology, we will examine the infrastructures that sustain the digital world and explore how they might be transformed.</p> <p>Drawing on examples such as sovereign clouds, permacomputing, community-owned infrastructures, and low-tech computing, we will imagine alternative ways of building the digital: infrastructures that are more distributed and situated; technologies capable of reducing environmental impact; and governance models that place the common good above corporate interests. Against the paradigm of permanent connectivity, we will explore new temporalities for the digital world—rhythms that embrace disconnection and care, while fostering greater attunement to the planet's ecological cycles and limits.</p>                                                                                                                                                                                                                                                                                                           |
| Objective          | <p>This capsule understands digital infrastructures as a field of intervention for architecture, design, and political and cultural practice.</p> <p>Participants will explore tools for imagining and developing alternative models for data storage, processing, and governance that reduce environmental impacts while fostering more just, collective relationships with technology.</p> <p>The programme offers an up-to-date overview of technological developments, regulatory frameworks, and emerging alternatives that are reshaping digital infrastructures, alongside the forms of civic resistance and conflict arising within an increasingly interconnected world.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Faculty            | <p><b>Marina Otero Verzier</b>, architect, researcher, and curator specialising in architecture, technology, and ecological transformation.</p> <p><b>Joana Moll</b>, artist and researcher specialising in digital technologies, data infrastructures, and technological ecologies.</p> <p><b>Mario Santamaría</b>, artist and researcher exploring the physical and political infrastructures of the internet.</p> <p><b>Jara Rocha</b>, researcher, writer, and curator exploring the political and material dimensions of digital technologies.</p> <p><b>Blanca Pujals</b>, architect and researcher specialising in infrastructures, territory, and the geopolitics of materials.</p> <p><b>Andrea Muniáin</b>, architect and researcher exploring the relationships between bodies, technologies, and digital spaces.</p> <p><b>Tu Nube Seca Mi Río</b>, a research and activist collective focused on digital infrastructures and their ecosocial impact.</p> <p><b>José Luis de Vicente</b>, curator and researcher specialising in digital culture, design, and contemporary ecologies.</p> <p><b>Ana Robles Pérez</b>, researcher, designer, and educator working at the intersection of design, visual anthropology, and archival practices.</p> |
| Areas of knowledge | <p>Cloud geographies: from the screen to the mine</p> <p>Socio-environmental impacts of data centres</p> <p>Data ecologies and governance models</p> <p>Regulatory frameworks and civic contestation</p> <p>Decentralised networks, digital sovereignty, and shared infrastructures</p> <p>Community participation in digital infrastructures</p> <p>Collective memory, archives, and digital erasure</p> <p>Alternative computing models and technological innovation</p> <p>Ecosocial approaches to data storage and processing</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Format             | <p>The capsule approaches the classroom as a space for shared inquiry. Each session combines lectures, conversations, workshops, site visits, and hands-on</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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|                        | experimentation, offering multiple entry points into digital infrastructures—from the geopolitics of minerals to interface design, from data centres to archives, and from artificial intelligence to community-based practices.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Who is it for?         | <p>The programme is designed for students, researchers, and professionals from a wide range of fields—including design, architecture, art, technology, communication, anthropology, philosophy, political science, and activism—who are interested in exploring the material, ecological, and political dimensions of digital infrastructures and contributing to their redesign.</p> <p>It is also aimed at those engaged in processes of technological transformation within cultural institutions, public administrations, companies, associations, and grassroots organisations.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Value Proposition      | The cloud is a design project. Its current configuration concentrates power, externalises its costs, and generates profound social and environmental inequalities. This capsule provides the conceptual and practical tools to imagine and design alternatives.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Mode                   | On-site                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| On-site Schedule       | Tuesdays and Wednesdays<br>From 13 October to 4 November                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Languages              | Spanish and English                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Schedule               | 6:30–9:30 pm<br><i>Some sessions have specific schedules to accommodate the availability of the guest faculty. Please see the detailed timetable below.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Contact hours          | 22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Total Hours            | 38                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Number of Participants | 25 participants<br>The capsule will run with a minimum of 12 registrations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| CV                     | <p><b>Marina Otero Verzier</b> is an architect and researcher. In 2022, she received the Harvard Wheelwright Prize for her project on the future of data storage. She is Professor at the Harvard Graduate School of Design (GSD) and Director of The Data Mourning Clinic at Columbia University GSAPP. She has collaborated with the DIPC Supercomputing Center to develop alternative models for data storage, including <i>Computational Compost</i>, which received awards from Ars Electronica and the Spanish Biennial of Architecture and Urbanism. She contributed as an expert to the development of Chile's first National Data Centre Plan, working alongside communities affected by digital extractivism, and advises governments on data centre policy. She is the author of <i>Flotando en Litio</i> (2025) and <i>En las Profundidades de la Nube</i> (2024), and co-editor of <i>Automated Landscapes</i> (2023), <i>Lithium: States of Exhaustion</i> (2021), and <i>More-than-Human</i> (2020), among other publications.</p> <p><b>Joana Moll</b> is an artist and researcher. Her practice critically explores the material infrastructures of the Internet and the social, political, and ecological impacts of digital technologies, with a particular focus on surveillance, data extraction, and the</p> |

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environmental costs of the digital economy. Her work has been presented at international institutions including the Venice Biennale, MoMA, CCCB, ZKM, and Ars Electronica. She is co-founder of the research group *Critical Interface Politics* and co-director of the *Institute for the Advancement of Popular Automatisms*.

**Mario Santamaría** is a Barcelona-based visual artist working across installation, photography, video and performance. In 2018, he founded Internet Tour, a travel agency dedicated to exploring the physical infrastructure of the internet through collective tours and site-specific experiences. His work has been presented at institutions including ZKM Karlsruhe, C/O Berlin, WKV Stuttgart, MACBA, Aksioma Ljubljana and Arebyte London. Alongside his artistic practice, he teaches and has been invited to lecture at institutions such as UC Berkeley, HSLU Lucerne, The New School in New York and Trinity College Dublin.

**Jara Rocha** (they) is a member of The Institute for Technology in the Public Interest (TITiPI). Their practice spans writing, remediation, editing, action research and in(ter)dependent curating. Their work focuses on the semiotic-material conditions that make regenerative justice infrastructures possible, approaching technological infrastructures through situated and complex forms of distribution informed by non-binary, antifascist and transfeminist perspectives. They are currently involved in the project *Infrastructural Rehearsals*, collaborating with abolitionist community practices resisting the socio-technical impositions of the green, digital and military transitions. Recent projects include *Volumetric Regimes*, *The Underground Division*, *Queering Damage*, *The Cell for Digital Discomfort* and *Altas Latencias*. In 2023 they were InfraMaintenance Fellow at Hangar / La Virreina with the project *LaaS (Life as a Service)*. They are also part of the curatorial team at La Capella, and their programme *Naturopculturas son Disturbios* is broadcast intermittently on Dublab radio.

**Blanca Pujals** is an architect, spatial researcher and filmmaker. Her work investigates the political and material dimensions of contemporary technoscientific infrastructures and the geopolitics of materials. She studied architecture at ETSAB-UPC, completed an MA in Critical Theory through the Independent Studies Programme at MACBA (2012–13) under the supervision of Paul B. Preciado, and graduated with distinction from the Centre for Research Architecture (2015–16), directed by Susan Schuppli and Eyal Weizman at Goldsmiths, University of London. She holds a PhD in Philosophy, Visual and Material Cultures (2024) with the dissertation *Quantum Detection Infrastructures: A Spatial Examination of Soft Power, the Neutrino Particle and Underground Fundamental Physics Laboratories*. Her work has been exhibited, published and presented internationally.

**Andrea Muniáin** works at the intersection of architecture, visual arts and critical theory, exploring the relationships between digitality, embodiment and materiality. Her research has been supported by TBA21, Fundación "la Caixa" and Medialab Matadero, and has been presented at institutions including the Fosun Foundation (Shanghai), Frankfurter Kunstverein, the Thyssen-Bornemisza Museum and Matadero Madrid. She is co-author of *El Giro Fotogramétrico* (Bartlebooth, 2024) and Director of the Master's programme in Digital Arts and Creative Technologies at IED Madrid.

**Tu Nube Seca Mi Río** is a collective dedicated to making visible the ecosocial impacts of data centres in Spain, with particular attention to water use. Data centres are the backbone of the internet's physical infrastructure, and the growing demand for computational power has led to a rapid expansion of these facilities. Tu Nube Seca Mi Río is the first collective in Spain to focus on this issue, while also forming part of a broader international network of resistance against data centre expansion. Their work seeks to understand the environmental and social impacts of these infrastructures—and their entire supply chains—through decolonial, ecofeminist and solarpunk perspectives.

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**José Luis de Vicente** is a curator, researcher and writer specialising in digital culture, design, innovation and emerging technologies. His practice operates at the intersection of design, science, technology and culture, investigating how these fields shape society and everyday life. He has developed projects for museums, cultural institutions and international biennials, and from 2020 to 2025 served as Director of the Museu del Disseny de Barcelona, where he led a programme addressing contemporary ecological, technological and social challenges.

**Ana Robles Pérez** is a researcher, designer, and educator working at the intersection of design, visual anthropology, and archival practices. Her interests revolve around speculative narratives, more-than-human conditions, and alternative heritage practices, always through an approach attentive to social and territorial contexts. She has collaborated with institutions and collectives including the Huaca Pucllana Site Museum, TBA21 – Thyssen-Bornemisza Art Contemporary, the Venice Biennale, the Dutch Flood Museum, La Casa de la Arquitectura, the Milan Triennale, ARQVA – National Museum of Underwater Archaeology, Willem de Kooning Academie, CentroCentro, the Royal Academy of Art, The Hague, and Design Academy Eindhoven.

| Registration fee                        | 676 €                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                             |
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| Scholarships                            | Redesigning the Cloud offers two scholarships supported by the Fundació Banc Sabadell. To apply, please send your portfolio or CV, together with a motivation letter, to <a href="mailto:eina.obra@eina.cat">eina.obra@eina.cat</a> by 15 September. |                                                                                                                                                                                                                                                                                                                                             |
| Session                                 | Faculty                                                                                                                                                                                                                                              | Content                                                                                                                                                                                                                                                                                                                                     |
| 1 - 13/10<br>6:30 - 9:30 pm<br>room tbc | Marina Otero<br>Ana Robles                                                                                                                                                                                                                           | <b>Wild Clouds</b><br>Programme kick-off. The cloud is a material and political construct. In this opening session, we will examine the layers that sustain it: bodies, territories, energy, minerals, data centres, regulatory frameworks, and communities. We will introduce design as a tool for intervening in digital infrastructures. |
| 2 - 14/10<br>5:30 – 8:30 pm<br>room tbc | Joana Moll<br>Tu Nube Seca Mi Río<br>Marina Otero                                                                                                                                                                                                    | <b>Contested Infrastructures</b><br>Who designs digital infrastructures, and who bears their consequences? This session explores the impacts of digital infrastructures and the ways they can be challenged and transformed through art, architecture, politics, and activism.                                                              |
| 3 - 20/10<br>6:30 – 9:30 pm<br>room tbc | Andrea Muniáin<br>Mario Santamaria                                                                                                                                                                                                                   | <b>Post-Internet Bodies</b><br>How do digital technologies reshape our perception and our ways of representing the body and space? This session explores how these technologies reconfigure bodies, identities, and architectures, while examining the possibilities they open for appropriation and reinterpretation.                      |
| 4 - 21/10<br>5:30 – 8:30 pm<br>room tbc | TBC                                                                                                                                                                                                                                                  | <b>Decentralised Networks and Low-Tech Computing</b><br>A hands-on laboratory exploring servers, alternative hardware, and digital devices to imagine more autonomous, situated, and creative forms of computing                                                                                                                            |

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| 5 - 27/10<br>5:30 – 8:00 pm<br>room tbc | Marina Otero<br>Blanca Pujals                      | <b>New Frontiers of Computing</b><br>A visit to the Barcelona Supercomputing Center to explore the infrastructures behind advanced computing. Together, we will examine their role in knowledge production and discuss their ecosocial, territorial, and political implications. |
| 6 - 28/10<br>6:30 – 7:30 pm<br>room tbc | Marina Otero<br>Andrea Muniáin                     | <b>Beyond the Prompt</b><br>An exploration of design practices that use artificial intelligence to rethink our relationship with memory, intimacy, learning, and creativity.                                                                                                     |
| 7 - 31/10<br>Pte. conf.<br>room tbc     | Mario Santamaría                                   | <b>Internet Tour</b><br>A guided exploration of the geographies of the Internet across the city of Barcelona, uncovering how the digital materialises in buildings, cables, infrastructures, and urban landscapes that often remain invisible                                    |
| 8 - 03/11<br>6:30 – 9:30 h<br>room tbc  | Jara Rocha                                         | <b>Practices of Dissent and Care</b><br>A space for dialogue on digital infrastructures as sites of contestation, care, and transformation, where participants will explore situated and collective ways of relating to technology.                                              |
| 9 - 04/11<br>6:30 – 9:30 h<br>room tbc  | Marina Otero<br>José Luis de Vicente<br>Ana Robles | <b>Other Digital Futures</b><br>A closing session of conversations, activations, and shared experimentation to begin imagining desirable digital futures beyond those shaped by corporate interests.                                                                             |

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