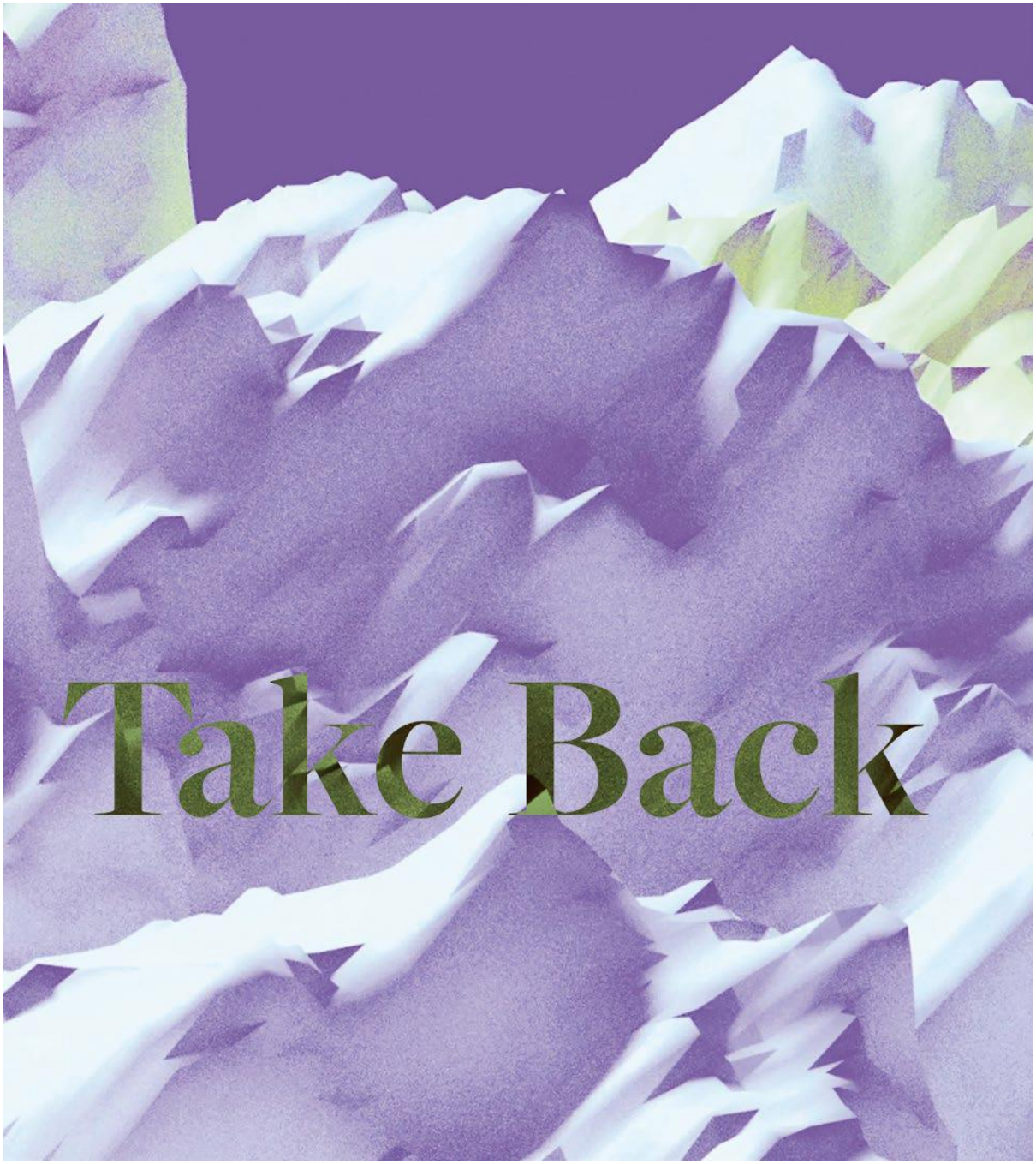
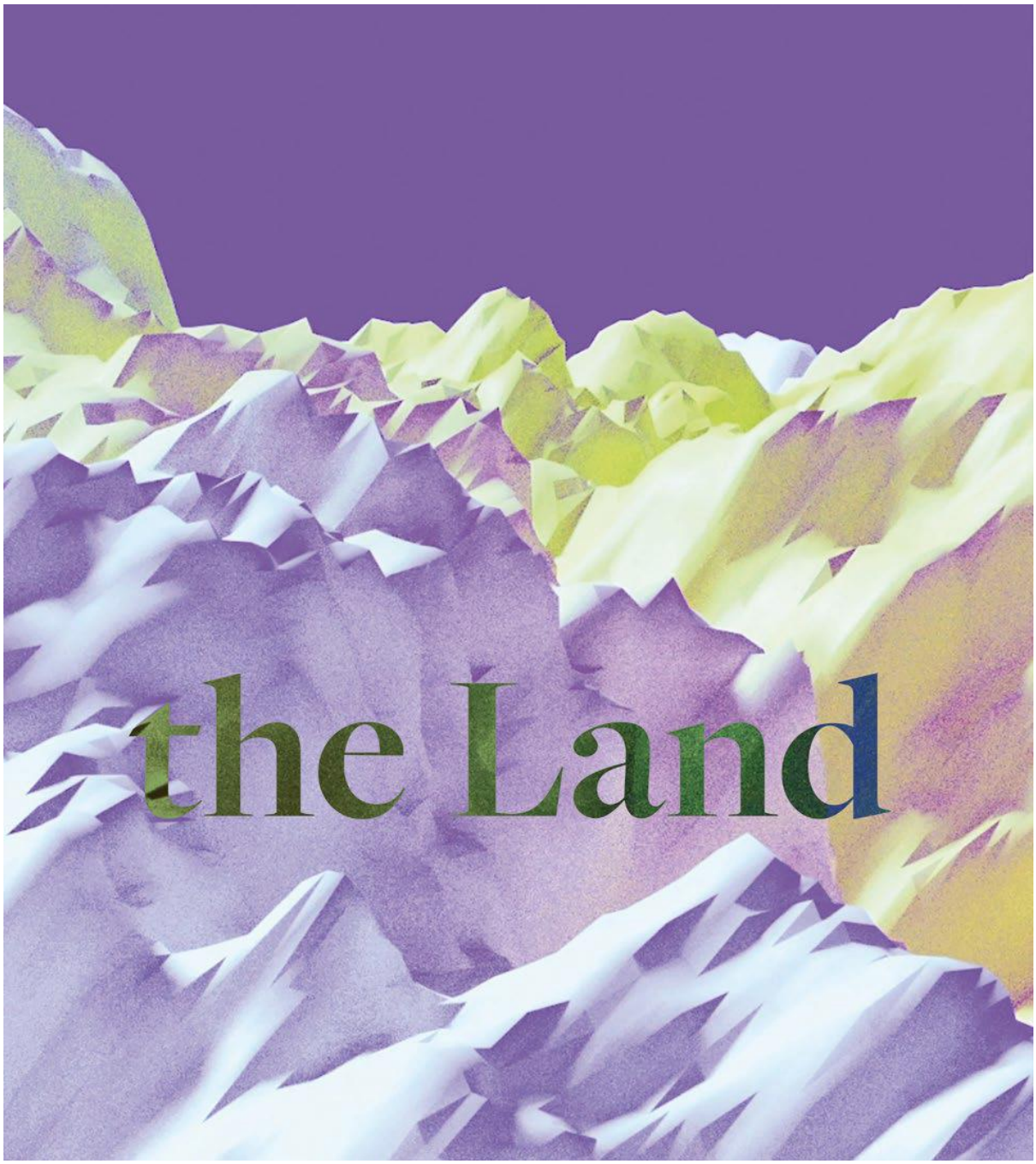

Take Back



Mingxin Li,
Non-Human Stromatolite Landscapes,
Chile,
Lithium Triangle research studio,
MA Environmental Architecture,
Royal College of Art (RCA),
London,
2020

Godofredo Enes Pereira, Christina Leigh Geros and Jon Goodbun

Godofredo Enes Pereira, Christina Leigh Geros and Jon Goodbun have been analysing governmental Green New Deal policy globally, viewing it through the microcosmic eye of their own research and that of their students on the MA Environmental Architecture course at the Royal College of Art in London. This includes their Lithium Triangle project that concentrates on the environmental damage caused by the extraction of lithium from the Chilean landscape, and the Orang-orang and the Hutan project in Indonesia that contests Western dominance and the effects of centuries of colonisation.

Over the last decade, and particularly over the last few years, many papers, policy documents and activist positions have emerged that all reference and organise themselves around the demand for a Green New Deal (GND). When viewed as a dialogue, this has arguably become the most systematic project to date, aimed at developing proposals that confront the necessary reorganisation of our societies, both socially and environmentally. The MA Environmental Architecture programme at the Royal College of Art (RCA) has developed an analysis of the different social, political and environmental impacts and qualities of these various GND documents.1 While the EU's Green Deal proposals do little more than camouflage existing consumption under veneers of piecemeal 'green' adjustments, the Ocasio-Cortez/Sanders proposals in the US and the Lucas/Lewis joint Green/Labour proposal in the UK have both made important shifts in arguing that responses to the climate emergency must align with the principles of a Just Transition, bringing together new proposals around jobs and forms of labour, transport, food, water and energy infrastructures in the context of municipal and national policy. More radical still, the Blueprint for Europe's Just Transition, produced by the GND for Europe group, included a call for an Environmental Justice Commission with international, intersectional and intergenerational justice dimensions.2

While all of the above GND proposals have called for international climate justice and have recognised the dangers of a green new colonialism that any GND presents, it is the more recent Pacto Ecosocial del Sur3 and Red Deal (see pp 78–85 of this issue) that have more seriously addressed the most critical aspect of any meaningful and global GND proposal; namely, how to confront the asymmetrical reality of the colonial/capitalist project and its reliance on an endless expansion of extractivist frontiers with the voices situated at those very front lines.

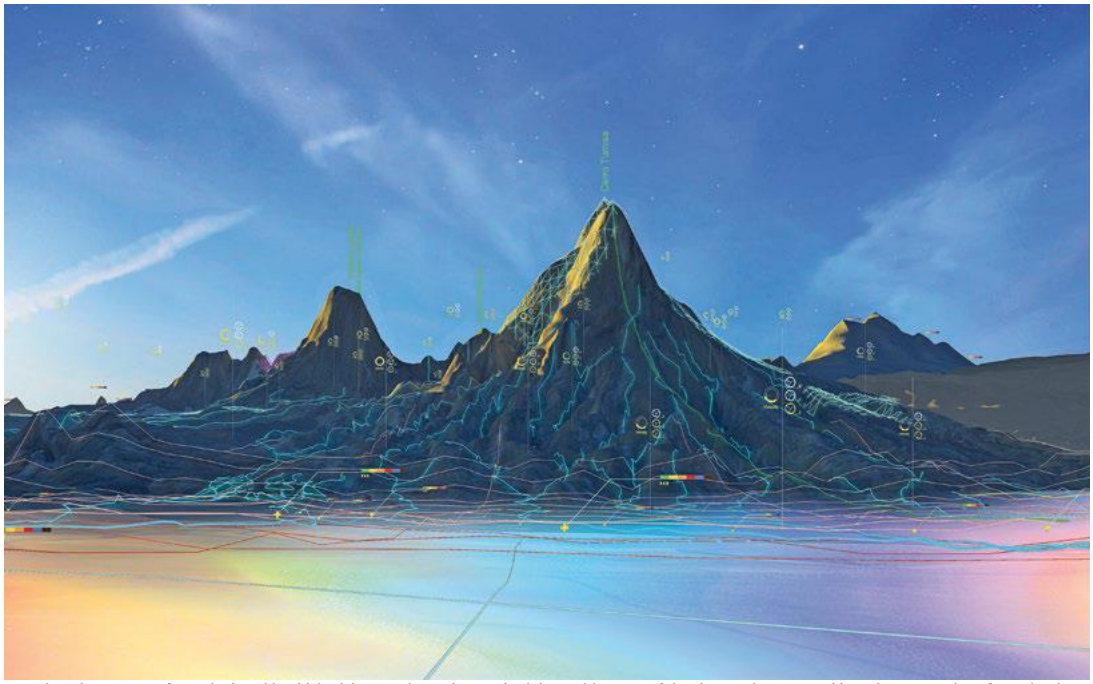
The research at the RCA aligns itself with these latter proposals along two main priorities: to investigate the socioenvironmental impacts of resource extraction and to develop methods and proposals to 'Take Back the Land'. While there are important developments in the design disciplines to address climate breakdown, the impacts of extractivism are not being adequately considered within the field of architecture. The MA research studios are focused on the impacts of extracting resources to address the contradictions of developing progressive and transformative proposals within a global capitalist system. However, at the centre of every environmental struggle is land. The term 'take back the land' originally referred to the resistance by Indigenous peoples against the settler colonial state. But beyond that, as an expression, it has come to include a broad range of struggles over socio-environmental relations that recognise land as crucial for a counter-hegemonic project: control over land is necessary for resisting the expansion of the extractive frontiers; for resisting dispossessions and land-grabbing by governments and corporations; for fighting gentrification and expulsions; for creating levels of autonomy required for the survival and wellbeing of many peoples; and for exploring alternative forms of stewardship of nature and resources. Any transformation in environmental relations, as required by the different GNDs, must therefore include strategies for taking back the land.

The Lithium Triangle

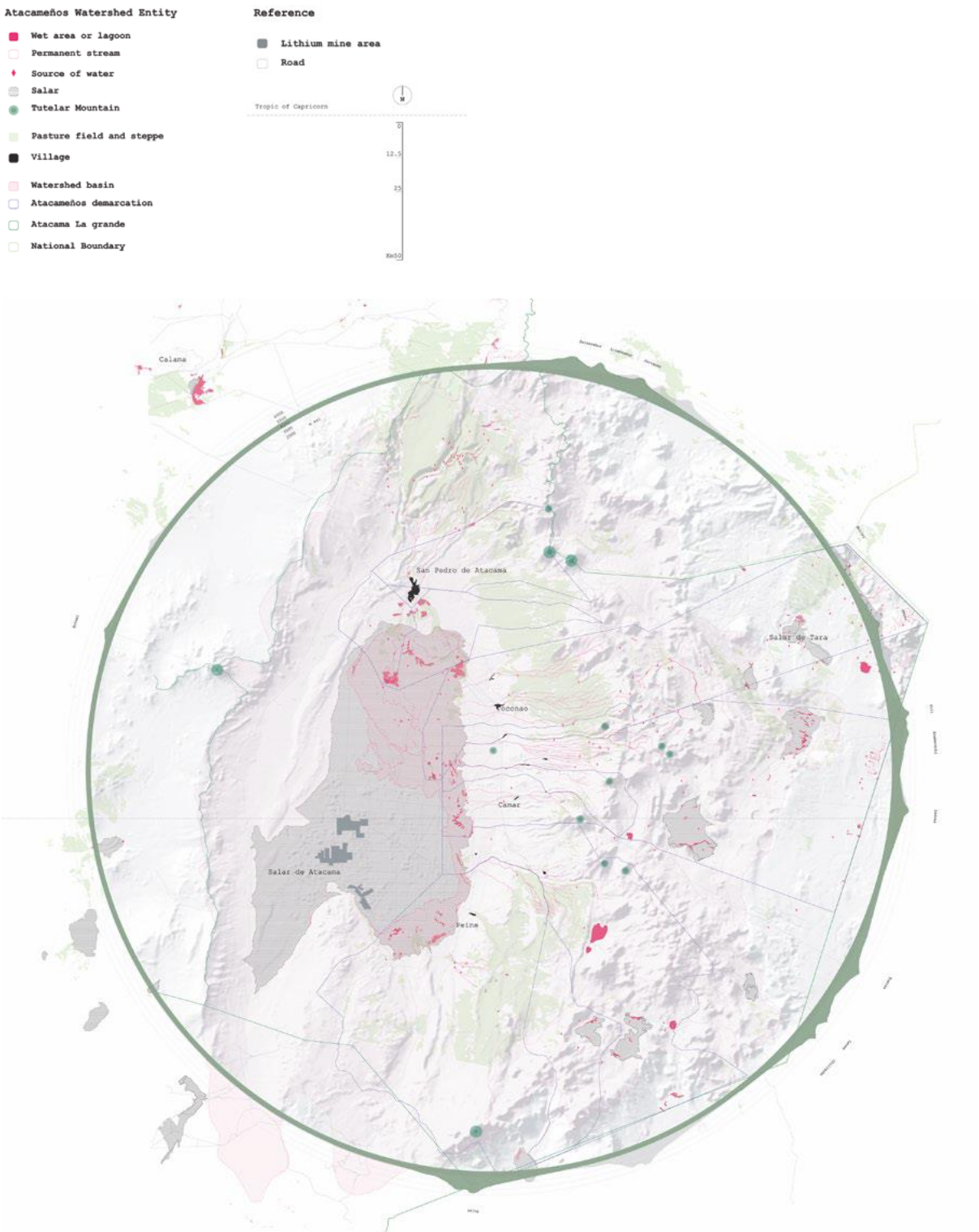
Under the guise of the 'green' transition and decarbonisation of existing modes of production, transportation and existence, a new frontier of capitalist expansion has emerged and the race for lithium has accelerated across the world. Crucial in the shift to electromobility, lithium is part of a select group of metals and minerals (such as cobalt, copper and rare earths). Unfortunately, the impacts of yet another expansion of the resource frontier are often unaddressed by the marketing campaigns of 'clean energy'. For the past four years the Lithium Triangle research studio at the RCA has been examining the socio-environmental impacts of lithium extraction in collaboration with Indigenous leaders, advocacy teams and other experts working on the Atacama Desert in Chile, such as the Atacama Desert Foundation. Seventy per cent of the world's exploitable reserves of lithium are located in the 'lithium triangle', a highland region in the Andes delineated by the salt fl ats (salares) of Uyuni in Bolivia, Atacama in Chile and Hombre Muerto in Argentina. Salt fl ats are dried lake beds with underground reservoirs that contain high concentrations of dissolved salts, such as lithium, potassium and sodium. The extraction process requires holes to be drilled into the salt flats and brine to be pumped to the surface to evaporate in ponds. This allows lithium carbonate to be extracted through a chemical process. The Salar de Atacama in Chile, containing 27 per cent of the global lithium reserve base, is the world's largest producer of lithium. But all across the region, lithium extraction is expanding into dozens of other smaller salt fl ats. Following from silver, gold, nitrate and copper, lithium continues the long history of extraction in the Atacama.

While the studio’s broader investigation has looked at lithium across local and global scales, both contemporary and historical, the design efforts have focused on how to take back the land from the control of mining corporations or the Chilean state, and place it in the hands of local and Indigenous organisations – while speculating on how to use that land differently. The importance of the International Labour Organization’s Indigenous and Tribal Peoples Convention, 1989 (ILO169), to which Chile is a signatory, became clear, as it requires mining projects to undergo a process of consultation with affected communities, opening possibilities for environmental claims on both techno-scientifi c and ontological bases; for example, from the perspective of the Atacameño cosmovision.

For this reason, many of the studio’s collaborations with local Indigenous and advocacy teams focus on exploring architectures of environmental sensing and monitoring to be used by locals against mining companies. Drawing on the expanding fi eld of counter-mapping as well as on the emerging forensic approach to architectural activism, the project has made use of remote-sensing, multispectral analysis and GIS for the production of environmental reports to be used in legal disputes, and proposed the development of a series of tools to allow ground observations to be interpreted in relation to invisible data such as, among others, concession boundaries, aquifer location, soil depth, real-time measurements of water and wind, and vegetation health in time. It focuses on the collective and collaborative devices that bring them together, including online platforms, apps and AR systems, but more importantly how these enter into composition with non-academic modes of knowledge production, including oral histories, environmental knowledge developed by farmers, as well as those inherited from Andean knowledge traditions of reciprocity, care and respect for the ancestors.



Based on the system of geoglyphs with which Lickanantai peoples marked the architecture of the desert, the proposal introduces a series of new landscape markings that in linking to an augmented-reality data stack support community monitoring and contestation of mining activities.
Mouhamadou Cisse,
Augmented Reality in the Atacama,
Chile,
Lithium Triangle research studio,
MA Environmental Architecture,
Royal College of Art (RCA),
London,
2019

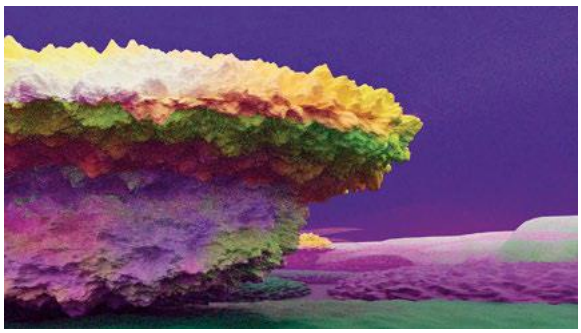


The map seeks to represent the entangled ecologies relevant to local livelihoods in one geographical space. One's position on or around the Salar de Atacama can be inferred from the relative position of the mountains and the shadows they cast over the course of the day. The map can be read in the same way, independently from standard coordinates.

Vanessa Lastrucci,
The Salar de Atacama basin
as Indigenous land with
ancestors/mountains as devices
for space-time orientation,
Chile,
Lithium Triangle research studio,
MA Environmental Architecture,
Royal College of Art (RCA),
London,
2018

For example, as part of a collaboration with lawyers, microbiologists and archaeologists, the studio investigated the architecture of microbial mats and of stromatolites – sedimentary rocks produced over 3.5 billion years by the accumulation of layer upon layer of cyanobacteria – and how they have become unlikely protagonists of a legal conflict that pits one of the world's major lithium producers, Chilean chemicals company Sociedad Química y Minera (SQM), against environmentalist and Indigenous groups. Stromatolites are precious sources of environmental knowledge about the development of life on Earth. And in being delicate sensors of water quantity and quality, microbial ecosystems can demonstrate the invisible impacts of mining operations. They have therefore become a crucial site of resistance against the expansion of mining, and part of the research studio's work has been developed to support those struggles.

The other key component of the work is to complement struggles for land with alternative visions of how it should be used. Every reality claim made during environmental disputes embodies the possibility of alternative modes of coexistence, insofar as it foregrounds how local communities have for generations made use of these ecosystems without destroying or depleting them. In collaborating with local groups – such as the ayllus of Tulor and Beter on the north of the Atacama salt flat – the aim has been to redeploy conceptual and practical aspects of Atacameño environmental thinking to address contemporary challenges around land management, desertification, water scarcity and reproductive justice. In particular, the focus has been the necessity of developing hydrological forms of environmental planning, taking into consideration water's potential as a maker for a just energy transition.



Animation of microbial communities in the Salar de Llamara salt fl at in the Atacama Desert. The stills aim to reveal the desert's complex microbial ecosystems.
Mingxin Li,
Non-Human Stromatolite Landscapes,
Chile,
Lithium Triangle research studio,
MA Environmental Architecture,
Royal College of Art (RCA),
London,
2020

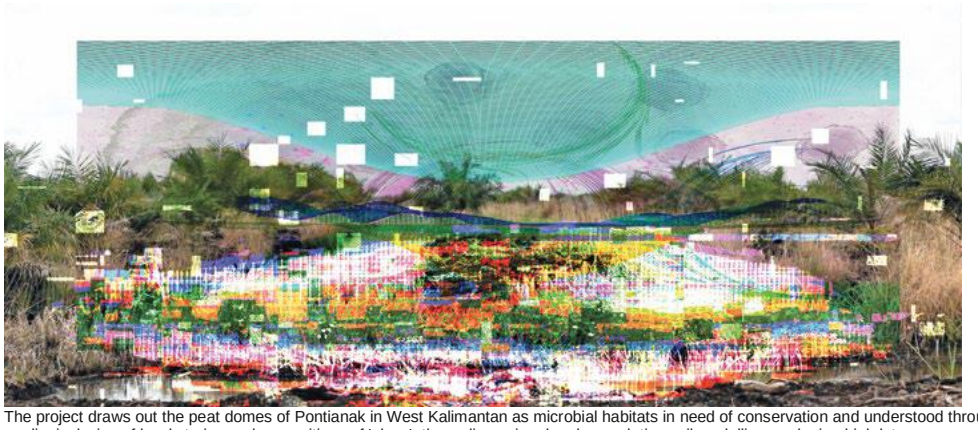
The Orang-orang and the Hutan

With increased global demand for mobile technologies, the proliferation of lithium-powered access to networked data and dialogue is actively rearranging relationships between activist struggles and the socio-material forest of southeast Asia. Rich in resources, the material and affective atmosphere of the tropical belt – particularly within the Indonesian archipelago – realises the industrialised violence of nature's commodifi cation. Decades in the making and compounded by a destabilising climate, the transnational impact of the Indonesian peat fi res of 2015 captured the world's attention, and the country's forests became a focus area for 'green' capital expansion and international scrutiny. While the eyes of the world are focused through the lenses of satellites, increasing the capacity for local communities to collect, organise and draw out their own data is an important space for design to help empower local knowledge systems and regimes of care and maintenance.

Since 2018, the Orang-orang and the Hutan research studio at the RCA has been working with activists, scholars, artists and local communities in Kalimantan (Indonesian Borneo) to better understand and collaborate within momentums of destruction, knowledge building and power exchange. Radiating out and from west to east of Indonesia's centre, Jakarta, destruction of the nation's forests arrived in Borneo after ravaging both Java and Sumatra. Since the 1980s the Bornean forests have been levelled at an unprecedented rate, and with each cycle of destruction – whether due to mining, logging or agricultural extraction – local communities have lost rights and access to lands and resources. With the help of international movements and collaborations over the past two decades, some Indigenous communities have gained legal recognition, but this alone does not guarantee them a voice in environmental struggles, knowledge and management when facing the capitalist machine of international relations and nation building.

Working with communities to legitimise and make visible their claims to land, the studio has been exploring the microorganisms that enliven the peat soils. These soils carry histories of deep knowledge and ancestral connection to place and concepts of multi-species kinship that counter colonial systems of land policy and management. Local Indigenous communities and activists help in understanding how these soils might provide evidence in the struggle to reclaim lands from foreign and commercial enterprises. When attempting to comply

with legal frameworks for making Indigenous land claims, the lack of static, physical markers that clearly establish historic boundaries often poses a challenge due to historically nomadic and semi-nomadic practices. Still today, territorial knowledge is passed from one generation to the next via shared everyday tasks that operate as methods of performative storytelling. These tasks largely revolve around the development and continuation of a set of intimate relations with the soils that ground, nourish and record the bodies that live within them. This kind of knowledge, however, does not easily draw itself into legal documents. Collaboratively questioning the authority of traditional cartographies, the studio has been experimenting with different methods of analysing and recording different languages and stories of soil knowledge as they are performed, marked and shared.



The project draws out the peat domes of Pontianak in West Kalimantan as microbial habitats in need of conservation and understood through composite media, inclusive of local stories and recognitions of 'place', three-dimensional and speculative soil modelling, and microbial data.
Puyang Liu and Fei Cheng,
Microbial Habitats / Microbial Atmospheres,
West Kalimantan, Indonesia,
The Orang-orang and the Hutan research studio,
MA Environmental Architecture,
Royal College of Art (RCA),
London,
2021

In this rethinking of the foundation of land-use planning policy and design, soils are modelled in section and according to their primary characteristics in the peat forest of Central Kalimantan.
Kaiwen Yu,
Discrepant Cartographies,
Central Kalimantan, Indonesia,
The Orang-orang and the Hutan research studio,

MA Environmental Architecture,
Royal College of Art (RCA),
London,
2019

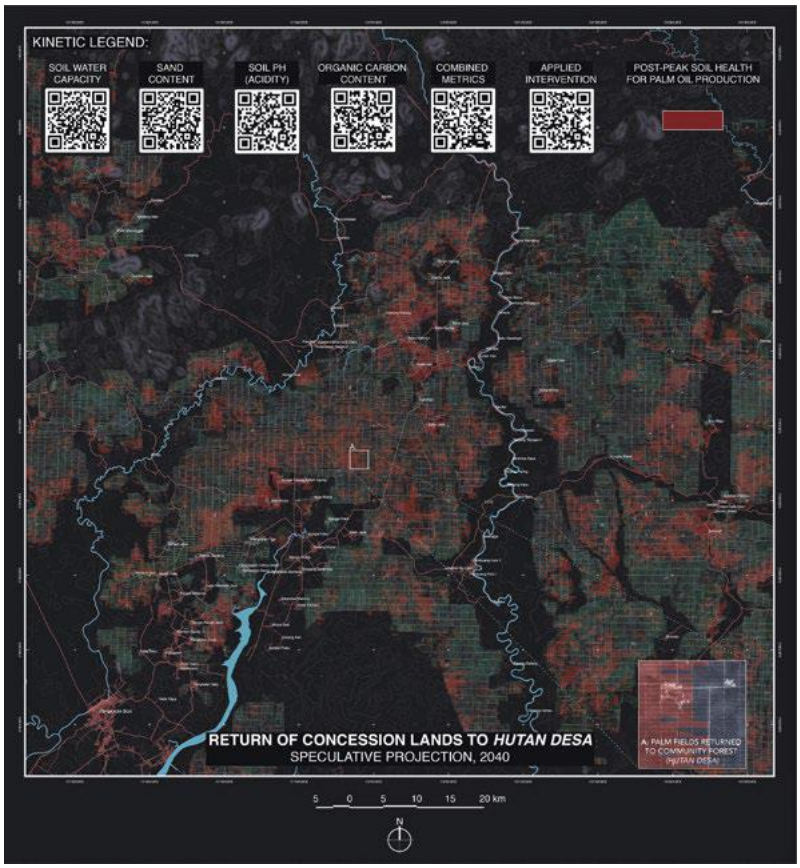
Across both of the MA studios, the aim is to develop longterm research that can provide an important contribution to understanding the environmental values and costs of the green transition

Challenging the dominance of Western, colonial land-policy and mapping systems requires an understanding of soils as non-monolithic, differentiated characters that are evolving organic bodies. Through detailed analysis and modelling, science-based soil knowledge begins to resemble the stories of Indigenous residents, and may be drawn into formal documents. In finding ways to merge Indigenous knowledge and scientific data, the studio is working with others to take back the land. International outrage has increased pressure on the Indonesian government to enact laws and regulations against deforestation. However, until such regulations are written into long-term enforced policy, change will not come. Intervening within existing land policy, planning and management systems, then, becomes an important pathway towards action.

Towards a Green New Deal

Across both of the MA studios, the aim is to develop long-term research that can provide an important contribution to understanding the environmental values and costs of the green transition in ways that are open to the many worlds of the world, exploring multiple avenues of contestation and resistance, and providing tools – both practical and conceptual – for taking back the land. If the dialogue around the GND is to continue to evolve in a radical and transformative direction, it is essential to contest the colonial logic necessarily implicit within capitalist decarbonisation industries. ‘Take back the land’ must be a central demand of any radical GND project. Architecture’s role here is to recognise the extractive machines on which it depends and is so often implemented, to deploy its analytical and investigative tools to counter-hegemonic means, and to provide alternative models of non-extractive modes of coexistence.

Notes
1. See Jon Goodbun, ‘There Isn't One Green New Deal’, in Markus Bader et al (eds), Making Futures, Spector Books (Leipzig), 2021, pp 74–9.
2. Founded by DiEM21 (the Democracy in Europe Movement) and including left thinktanks such as Autonomy, Common Wealth, the New Economics Foundation and the original GND Group: https://report.gndforeurope.com/cms/wp-content/uploads/2020/01/Blueprint-for-Europes-Just-Transition-2nd-Ed.pdf.
3. https://pactoecosocialdelsur.com/quienes-somos/.Text



Data analysis and 2D modelling of the defi ning characteristics of peat soil in Central Kalimantan with the goal of returning concession lands to community forest.