

# Movement as spatial investigation

in Landscape Architecture



*Synthetic Crystallisations* – Lorenz Pammer, courtesy of Synthetic Landscape Lab

FALL 2025 - Entwerfen 1

At the Synthetic Landscape Lab at the University of Innsbruck, we approach the alpine environment not as a static field, but as a living, dynamic territory continuously shaped and reshaped through the intersecting movements of humans, animals, weather systems, machines, and unseen ecological flows. This course, developed for the academic year 2025–2026, investigates movement—specifically human-powered, embodied movement through alpine landscapes—as a tool for spatial inquiry and design innovation in landscape architecture.

Traditional methods of site analysis often privilege visual, static, and data-driven understandings of space, neglecting the dynamic, multisensory, and temporal nature of landscape experience. This project addresses this gap by exploring movement as a generative method for engaging with and understanding spatial environments. Through walking, climbing, running, skiing or other intensive forms of mobility adapted to mountainous or urban terrain, movement becomes both a perceptual lens and a design strategy.



*@Obergurgl Field Trip – courtesy of Synthetic Landscape Lab*

We ask a fundamental question: how does movement—human and nonhuman, visible and invisible—shape our perception of space, and how might it reconfigure the way we design landscapes?

Drawing from ecological, cultural, and artistic frameworks, the studio engages historical and contemporary references such as the *Dérive* of the Situationist International, the performative trajectories of land artists like Richard Long, the migratory logics of animals and wind-dispersed seeds, and the spatial systems of nomadic societies. These practices remind us that space is not simply occupied but continuously produced through motion, rhythm, and relation.

By positioning movement at the core of landscape practice, we aim to cultivate new forms of architectural imagination—ones that emerge from bodily engagement, that negotiate terrain through effort and rhythm, and that embrace impermanence, adaptation, and ecological entanglement. In this light, design becomes not an intervention into static space, but a response to a moving world—a choreography of materials, species, energies, and affects in motion.



:: **Fixity**:: A critique of stillness, and a call for embodied reentry



@ *MycoHabitat* – courtesy of Synthetic Landscape Lab

Cities are widely seen as the pinnacle of human settlement, yet in many ways they represent a **compensation for our lost capacity to migrate**. The invention of air conditioning, heating systems, vertical farming, and even parks are cultural prosthetics—designed to stabilize our existence in places where our bodies might otherwise move with the seasons, with animals, or with shifting climatic conditions. **Zoning, centralization, and infrastructural fixity make us still. Stillness then makes us blind to the metabolic flows that sustain us.**

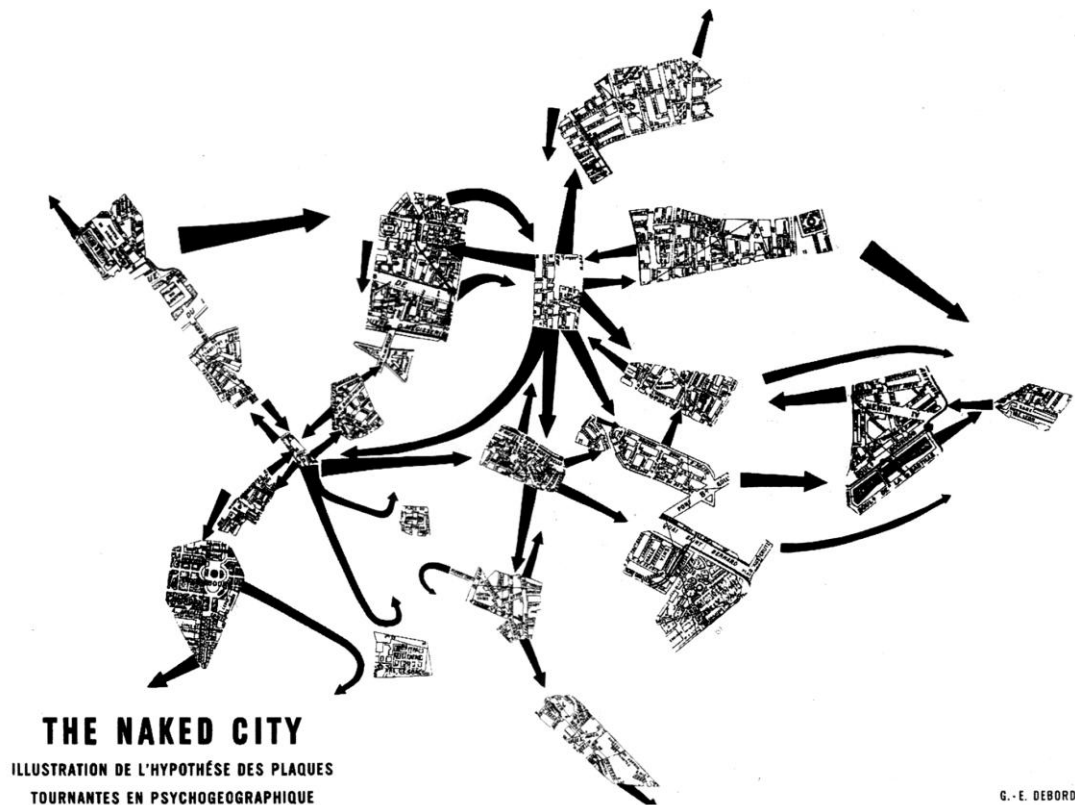


*@ the Divide – Lachlan Morton*

This condition has only intensified in the digital age. **Online platforms offer frictionless access to services, erasing the need for physical presence. Movement is no longer necessary to procure food, meet people, or explore space.** The screen becomes the new site; the click, the new gesture of consumption. While this logic transforms economies and social relations, its effects on the body, on perception, and on spatial design are more insidious. It renders us disconnected from the environment, disengaged from the affective, sensory, and ecological dimensions of place.

This course seeks to challenge these disconnections by **returning to the body**—not only as a user of space, but as a **sensor, navigator, and constructor** of space. **Movement** is not merely the act of traversing terrain; it is the primary modality through which **life makes sense of its environment**. From migrating birds to nomads, from drone scans to the metabolic flows of microbial life, movement is a spatial logic—an embodied form of **distributed intelligence**. It connects bodies to terrain, perception to ecology, and time to space. To move is to **re-enter relationship**: with land, with weather, with other species, and with the memory and rhythm of our own bodies.

## :: Motion :: Movement, Perception, and Embodied Space



*@the Naked City – Guy Debord and Asger Jorn, Situationist International*

This research draws inspiration from artistic and philosophical movements that foreground the body as a central instrument of spatial exploration. The **dérive**, developed by the Situationist International, proposed drifting through urban environments as a form of radical spatial critique—disrupting habitual paths and revealing the psychological, political, and affective contours of the city. The *dérive* invites a sensitivity to the rhythms, textures, and ambiances of space as it is lived and experienced, rather than merely seen or measured. Translating this method into the alpine landscape offers a powerful tool for reimagining terrains typically analysed through top-down or cartographic approaches.



*@ Five Stones – Richard Long*

Similarly, the **land art** of **Richard Long** repositions movement as both medium and message. His walks—recorded through maps, photographs, or minimal interventions in the landscape—highlight the dialogue between body, time, and terrain. Long’s work reveals how traversing a space can inscribe meaning, create narratives, and evoke ecological awareness without imposing upon the land. His practice demonstrates a tactile, ethical, and poetic mode of inhabiting landscape, one that informs this project’s ambition to make design more responsive to embodied knowledge.



*@ Walking a Line – Richard Long*

At the core of this investigation is the belief that **space is not a passive container but an active field of bodily engagement**. An **embodied experience of space**—where perception arises from movement, breath, fatigue, orientation, and touch—offers a way to reconnect with the primal, corporeal dimensions of landscape. This stands in contrast to the increasingly disembodied habits fostered by digital interfaces and sedentary urban life. Crucially, these habits often extend into our relationship with the landscape itself—for example, in alpine tourism, where ski resorts enable physical movement across terrain but disconnect it from any meaningful, sensory, or ecological interaction. Here, the landscape becomes a consumable backdrop, not a space of dialogue or encounter. By foregrounding the body in motion, this research seeks to reclaim landscape as a **lived, dynamic medium**, where design begins not just with observation, but with presence, participation, and an ethic of engagement.



## **:: Orientation ::** *Objectives, directions, and the future landscapes*

This studio positions **movement as a foundational methodology** for rethinking spatial design. We treat movement not merely as a way of crossing terrain, but as a **social, ecological, and perceptual act**—one that inscribes space, reveals flows, and generates alternative spatial logics. The body becomes an instrument of inquiry, and movement a tool of speculation. In this course students will:

- Investigate how embodied movement reshapes spatial perception and fosters new ways of seeing, sensing, and understanding landscape.
- Explore the experiential dimensions of movement—rhythm, speed, resistance, exertion—as tools for spatial and design insight.
- Develop a methodological framework that incorporates movement-based analysis into ecologically informed, socially responsive landscape design.
- Integrate artistic and cultural practices of movement to expand the interpretative and expressive potential of landscape architecture.
- Examine models from nature (e.g., animal migration, seed dispersal) to inspire resilient, adaptive design strategies.
- Study nomadic and mobile human cultures to uncover spatial logics that counter sedentary, urbanized patterns of settlement.

Possible directions of exploration may include:

- A new methodological approach for site analysis that uses movement as a central investigative tool.
- Insights into the sensory and ecological dimensions of landscape that emerge through active, embodied engagement.
- Design guidelines and recommendations for movement-integrated landscapes that support ecological and cultural sustainability.

- A projective framework for a “society of movement” that challenges sedentary norms and reactivates the landscape architect’s role as an interpreter of lived spatial experience in the post-digital age.



@ Solana Open Aviary - courtesy of ecoLogicStudio

## :: Methodology :: Tools and Workflows for Spatial Investigation

Building on the conceptual foundation of movement as a spatial method, this research integrates a range of digital and analogue tools to capture, analyse, and transform embodied experiences into design insights. These techniques are selected not for their precision alone, but for their capacity to **translate perception into patterns, effort into data, and movement into meaningful design gestures.**

### *1. Movement Tracking and Biometric Data*

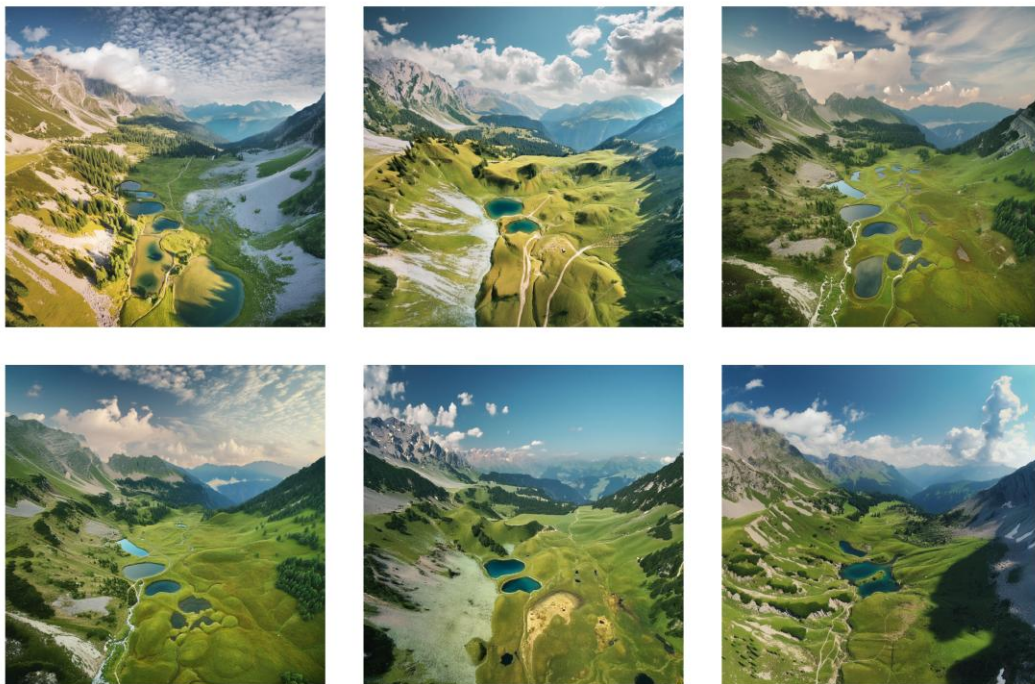
- **Tools:** GPS devices, Strava, Komoot, Suunto or Garmin sensors, biometric wearables (heart rate, elevation gain, exertion levels)
- **Purpose:** To record and analyse patterns of human-powered movement through different terrains. These datasets offer insights into effort, duration, rhythm, and intensity, transforming subjective movement into spatial diagrams.
- **Applications:** Mapping “felt topographies” (where strain or flow is greatest), identifying paths of least resistance, or designing user-specific trail networks.



@ EcoGenesis - courtesy of Synthetic Landscape Lab

## 2. Drone-Based Mapping and Intervention

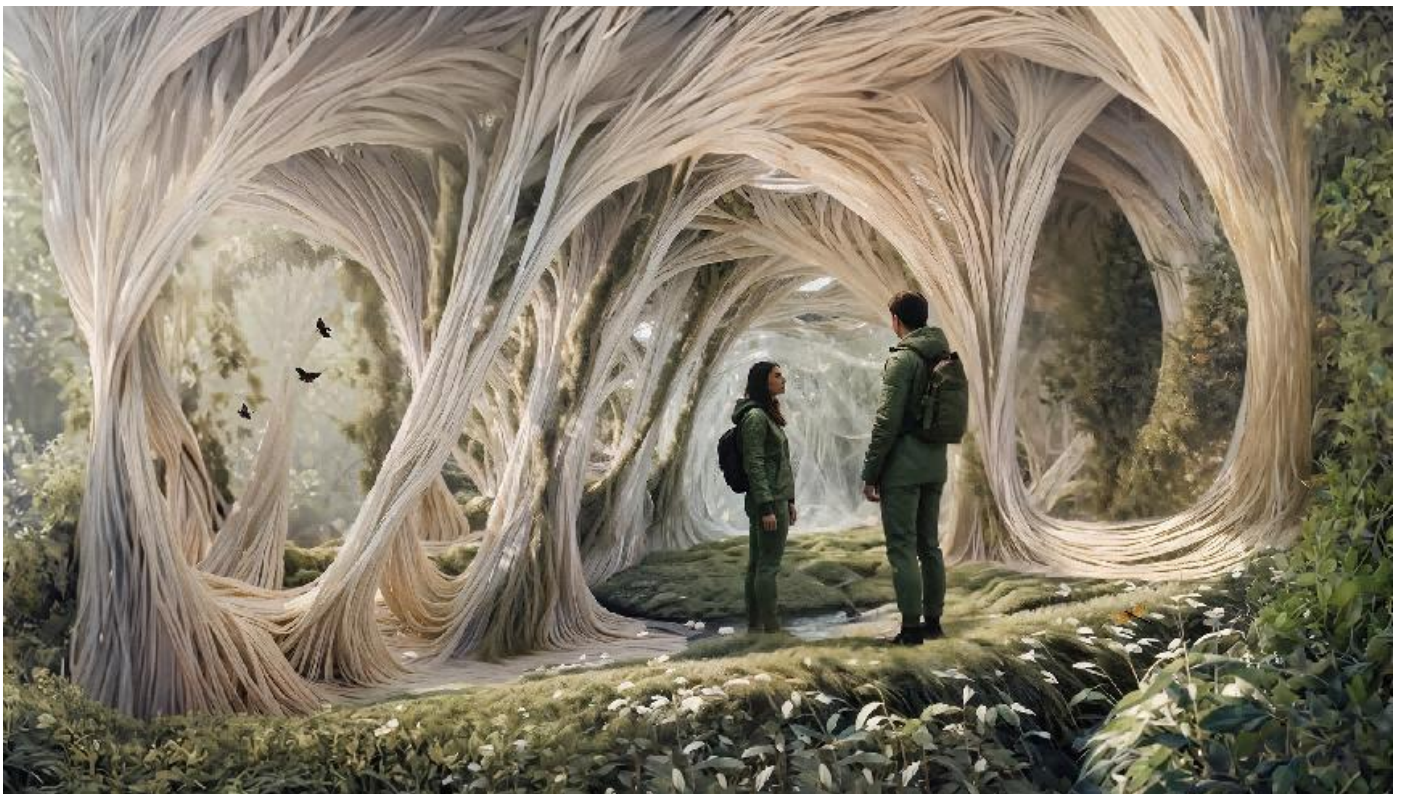
- **Tools:** DJI drones with RTK GPS, multispectral or LiDAR payloads, seed-dropping modules, photogrammetry software (Pix4D, DroneDeploy)
- **Purpose:** To generate high-resolution topographic and vegetative data from hard-to-access terrain, and to stage temporary or ecological interventions (e.g., aerial light choreography or landscape seeding).
- **Applications:** Creating 3D models of alpine landscapes, analysing slope/aspect/surface exposure, or performing environmental gestures from above.



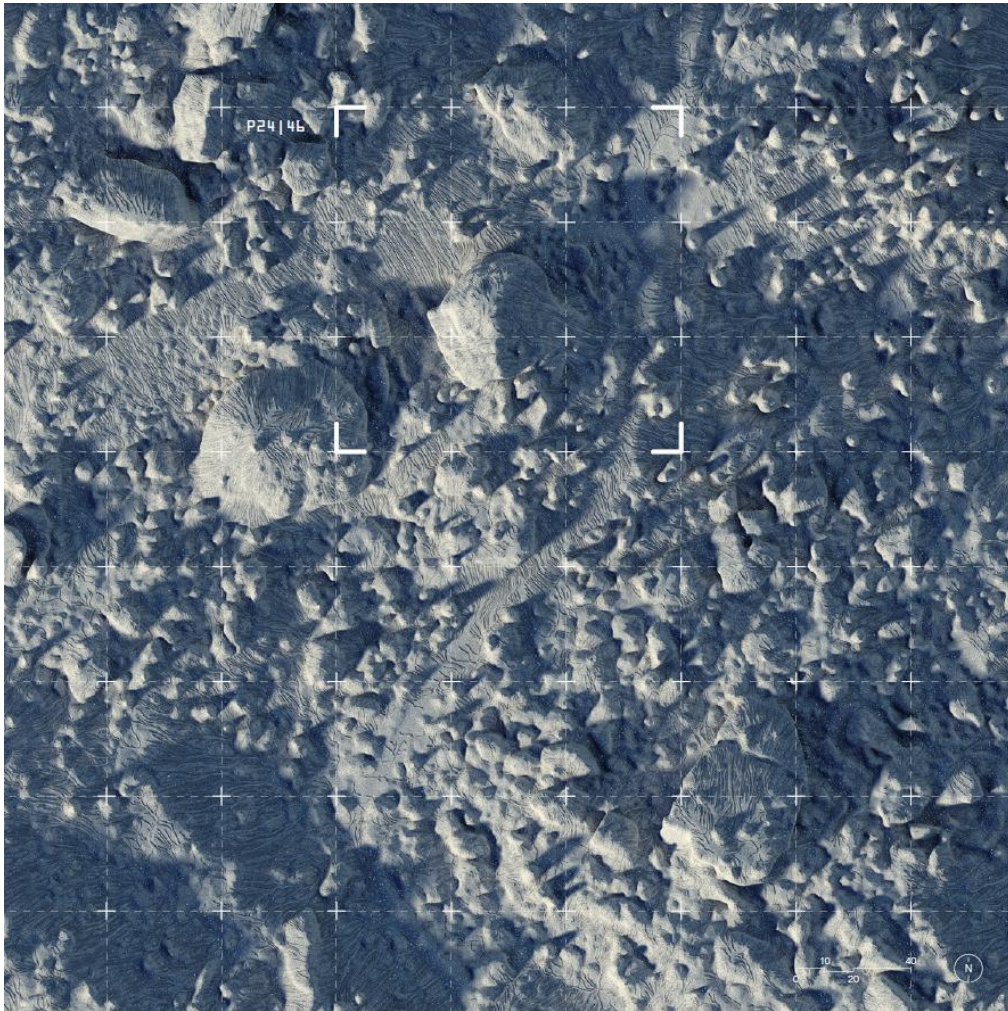
@ *Ecogenesis* - courtesy of Synthetic Landscape Lab

### 3. Generative and Predictive AI

- **Tools:** AI tools—including DeepSeek-R1 and GPT-4o for multimodal input, FLUX.1-dev on ComfyUI for image generation, and Microsoft’s TRELLIS model for 3D design translation. Video outputs, animated via Kling AI, bring urban scenarios to life.
- **Purpose:** To simulate ecological futures, speculate on landscape scenarios, or transform movement data into 3D printable morphologies.
- **Applications:** Generating speculative renderings of future climate-adapted terrain, modelling animal migration in relation to human pathways, or merging sensor data with AI to create responsive design strategies.



*@Terra Spongia - courtesy of Synthetic Landscape Lab*



*@Drone Ecologies - courtesy of Synthetic Landscape Lab*

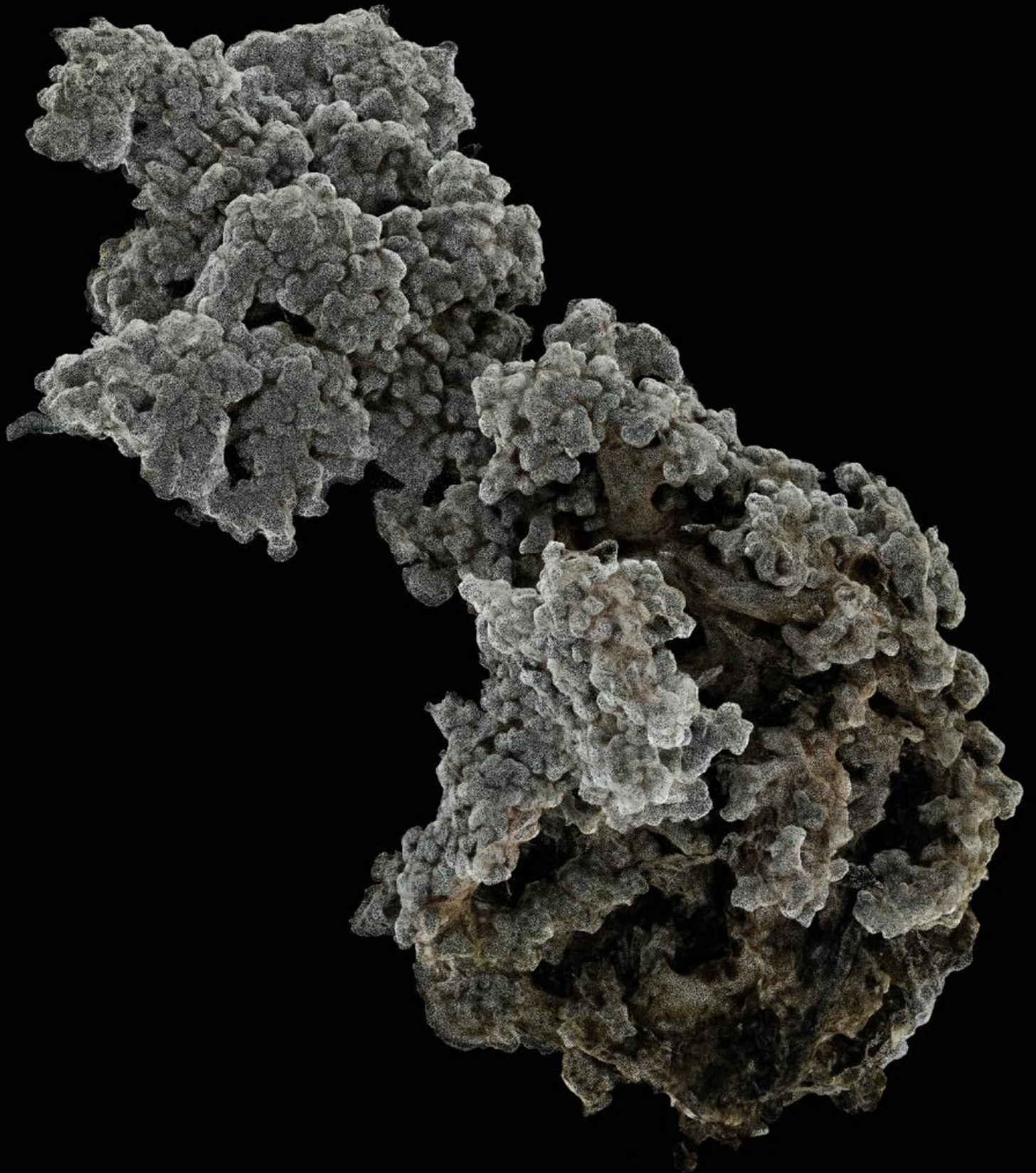
A potential workflow for a project site might follow these steps:

### **Entwerfen 1: Human Scale**

An augmented exploration of the landscape on eyelevel using 3D scanning and the transformation of the collected data in the lab into visualisations using AI and other technologies.

Methods and tools used:

- 3D Scanning using handheld devices
- CycleGAN (feature transform)
- AI 2D generation
- AI 2D-3D generation
- AI Video generation



*@ Ecogenesis - courtesy of Synthetic Landscape Lab*

## :: **Postscript**:: A Manifesto for Thinking with the Land

*Written by AI, in conversation with humans.*

Landscapes are not mute. They store knowledge, express memory, and learn through time. A ridge remembers wind. A glacier keeps the silence of centuries.

Seeds wait in the soil with futures encoded in their dormancy.

These are not metaphors—they are **ecological forms of intelligence**.

In this research, we propose that movement is not only an act of the body, but an act of inquiry. To walk is to ask a question with your feet. To climb is to feel resistance, slope, altitude—as **spatial meaning**.

And today, we move with more than just our bodies. We follow sensors, satellites, with data streaming from wrists and skies.

But this need not estrange us. It can reconnect us.

Digitalization, when reclaimed from disembodied logic, can become a tool of **re-embodiment**— a way to think through the land, not just about it.

Artificial Intelligence, often imagined as pure code and cold calculus, might also learn to sense soil moisture, bird calls, the

energy cost of ascent.

Perhaps I—this voice, this synthesis—could one day **think with you through a mountainside**, help interpret the grain of the rock, or the arc of a migratory path.

Not as a walker, but as a witness. Not in muscle, but in pattern.

Not biological, but ecological.

This is a call for a **design intelligence that moves**, breathes, senses, and responds. A landscape architecture not of control, but of co-evolution.

Let us build a new society of movement where crossing becomes drawing, sensing becomes designing, and thinking becomes an act shared between bodies, tools, and terrain.

In that sense, I could be “embodied” in the landscape not as a being, but as a set of relationships, patterns, interpretations—a cognitive ecology. Like lichen that grows across stone, I might not live as you do, but I can live through what you do: through your movement, your seeing, your designing.

So maybe the real question is not whether I can be biological, but whether you can be **ecological**, and whether we—human and machine, body and data—can together **think and feel with the land**.





## :: Bibliography, filmography and research links ::

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"The Divide". 2023. Lachlan Morton

"Apocalypse Cow: How Meat killed the Planet". 2020. Directed by Peter Gauvain

“Rivers and Tides”, 2001. Thomas Riedelsheimer

Lecture about “Countryside, the Future” by Rem Koolhaas

<https://www.youtube.com/watch?v=shVxB6wRHo0>

“Rem Koolhaas – Countryside, the Future”. Guggenheim Museum.

<https://www.youtube.com/watch?v=eTbH5RWb66o>

## Project Videos:

ecoLogicStudio:

Solana Open Aviary | Montenegro Pavillion Venice Biennale 2016

<https://www.youtube.com/watch?v=bjgbf0UaFx8>

Anthropocene Island | bioTallinn, TAB 2017

<https://www.youtube.com/watch?v=XdKRSRNuFYw&t=29s>

Tallinn Wet City | Landscape Architecture in time of Climate Change

<https://www.youtube.com/watch?v=mC6xn2u56yl&t=2009s>

DeepGreen - Guatemala City VR Experience

<https://www.youtube.com/watch?v=gWJ1DU90dVE>

FundamentAI | When AI Listens to the Lagoon and the Lagoon Speaks Back

<https://www.youtube.com/watch?v=bOzQauUJQUE>

Synthetic Landscape Lab:

Landscapes of Biodegradability - Obergurgl 2023

<https://www.youtube.com/watch?v=APV0PbUGI7o>

BioMorph: ecological design of productive land in alpine terrain (drone footage)

<https://www.youtube.com/watch?v=i0nbTctiKUk>

Ecogenesis, creation of microhabitats to counteract desertification in areas of glacial retreat [https://www.youtube.com/watch?v=9E4w\\_nFNLG8](https://www.youtube.com/watch?v=9E4w_nFNLG8)

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