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ESTEL—Reclaiming the Digital Narrative

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Data centres are crucial for our everyday lives. Most of the time, we don’t even realise their impact. They manage our communication and online storage space, including every text message, email and chatroom. For most people, the entire digital setup has become too difficult to understand. We propose ESTEL to rewrite the digital narrative. The name stems from the fantasy language Elvish in *The Lord of the Rings* and means “hope.” Our vision is to create a responsible future scenario in which third places for knowledge transfer are established to encourage interaction with others and our surroundings. This vision was inspired by the autonomy of the Data Center Stollen Lucerne.

Case Study Data Center Stollen Lucerne



The Data Center Stollen Lucerne owned by EWL Energie Wasser Luzern is a hyperlocal self-sustaining data centre. It operates completely out of sources of the city of Lucerne. It operates entirely using resources from the city of Lucerne. Lake water is used for cooling, and energy is provided through water turbines and waste incinerator plants.

EWL, Energie Wasser Luzern, is a company owned by the City of Lucerne. It is responsible for waste disposal, hot water, district heating and energy. Heating is generated from the waste incineration plant and Lake Lucerne. Energy is created through water turbines. EWL provides all the logistics needed for a data centre infrastructure. The idea behind this data centre was to exploit synergies between energy and water production and management, and data centre services. The project was realised in an old civil bunker owned by the city of Lucerne. The EWL data centre, Stollen Lucerne, is highly secure and energy efficient. As a colocation data centre, it rents server space to private customers. Therefore, the data centre needs to be accessible at all times. To ensure security, biometric scanners have been installed, allowing access only to a select few.



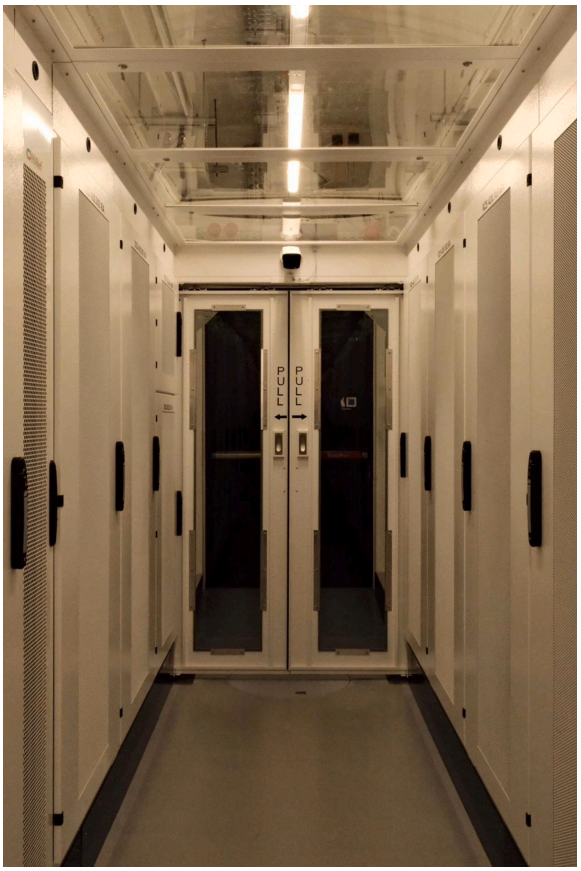
Waiting area. Photograph: the authors, 2025.



Skylight. Photograph: the authors, 2025.



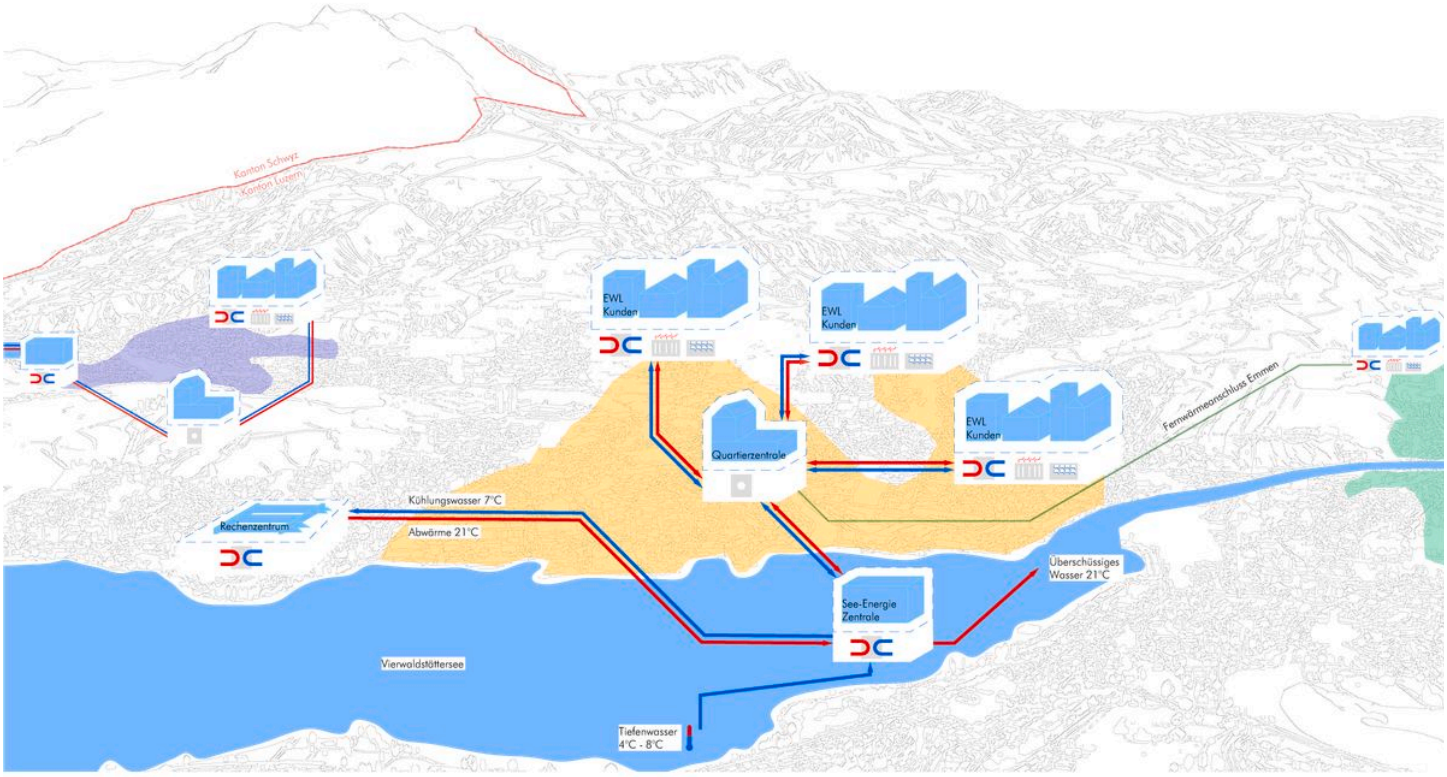
Water-to-water heat exchanger. Photograph: the authors, 2025.



Cold corridor. Photograph: the authors, 2025.

The data centre is located in an old civil bunker with minimal daylight. To counter this, a unique interior design was developed inspired by sci-fi movies creating a retro-futuristic look.

The Circle



Lake energy network Lucerne. Drawing: the authors, 2025.

Heat pump
Heat exchanger
Heating
Cooling

The city is heated through the lake energy network and waste incineration plants. Cold water is extracted from Lake Lucerne at a depth of 30–40 metres at Inseliquai, in the heart of the city centre. There, it is heated and distributed to neighbourhoods for hot water and heating. The Data Center Stollen Lucerne is embedded within the city district heating circle. The data centre itself is cooled using lake water and releases surplus heat into the city's heating system. Cold water is transported into the server rooms, which have cold and warm corridors. The water cools the server rooms and returns the heat to the lake energy network. Waste incineration plants ensure a functioning heating network in areas further away from the lake.

Hyper-Reality Nightmares



In the second phase of this semester we analysed the digital behaviour of our society. We came to the conclusion that we are addicted to the endorphins generated through social media and other tactics that keep us online.

The EWL data centre itself works well and works with a circular network. But do we actually need data centres? Who are the actors behind it? In this research phase, we look at data centres through the lens of the following three philosophical principles: dromology, panopticon, and digital decadence.

Dromology



Prisoners of media.

In dromology, or the logic of speed, our digital reality consists of products designed to be more efficient, faster, and more powerful. The idea is that greater efficiency will save time. However, data infrastructure is growing faster than our economic and political processes. Consequently, Big Tech is dictating our lifestyle. Innovations are happening so quickly that we citizens do not understand what's going on. This raises the question of who controls these processes.

Panopticon



Collage of a modern Panopticon.

The Panopticon is an architectural design concept for prisons. The building embodies control. In the middle of the building is a watchtower overlooking all the prisoner cells arranged around it. The idea is that prisoners will discipline themselves since they never know when they are being watched.

The cloud has become our prison. We never know who is watching, analysing, or tracking us. The fact is that data is money, and big tech companies are harvesting it. The structures of power have shifted their focus to servers, algorithms, and platforms in order to generate the most profit.

Digital Decadence

We are relying on the internet or platforms telling us, what we are interested in. What we see, how we work, how we live is all calculated through algorithms. The system works without any social norms. The problem with decadence is how well its mechanisms cover up reality to allow guilt-free indulgence.



Painting the Enemies, the authors, 2025.
https://youtu.be/BJqViFcPuNg

Counter-Philosophy



Allowing human friction.

In order to counteract these principles, we must first understand their opposites. Our aim is to create a slowed-down, independent, and transparent environment that functions as a tool for raising awareness. In response to the logic of speed, we propose introducing a slower environment. It is a space for playfulness and resistance. To counter the concept of the Panopticon, we propose establishing an autonomic, educational system based on Michel Foucault's idea of "Heterotopia." Finally, we address digital decadence by using our project to raise awareness. We encourage friction and humility.

ESTEL



To provide a more detailed understanding of our counter philosophy, we have created several interventions. Each one is self-contained, engaging with its surroundings and allowing for human interaction, dialogue, and friction.

There are many ESTEL interventions scattered throughout the city. They encourage people to slow down and take in their surroundings. It is a designed space where the offline and online worlds converge, powered by the various energy sources that surround us, such as water, kinetic energy, solar power, and the energy of humans and animals. The interventions are not bound to one specific place, but can be installed anywhere. A basic ESTEL intervention consists of an energy source powering a device, with people interacting with both the device and their surroundings.



BILLABONG
Photograph and model: the authors, 2025.

The “Billabong” is a space for sharing tools and mechanical knowledge. It can be placed anywhere along cycling routes and is self-sustaining. The roof is designed to collect rainwater in a tank. This water powers the lights and provides running water for the sink.



CHARGING INTERMEZZO
Photograph and model: the authors, 2025.

The “Charging Intermezzo” is a structure built on top of a car park. Parked cars can be charged using solar power. Meanwhile, visitors can enjoy some music while they wait.



NEWS SPEAKER
Photograph and model: the authors, 2025.

The “News Speaker” grabs passers-by’s attention by telling them all about the day’s news, and also allows them to get involved by solving news quizzes.



KINETIC CINEMA
Photograph and model: the authors, 2025.

The “Kinetic Cinema” is powered by the vibrations of passing trains. Glowing fairy lights indicate that the battery is fully charged and the cinema is ready to show films.



HAMSTER WHEEL
Photograph and model: the authors, 2025.

The “Hamster Wheel” is located in the middle of a forest. Wild animals are encouraged to engage with the wheel, thereby powering the battery of a hidden camera inside the hut.



SOUND SWING
Photograph and model: the authors, 2025.

The “Sound Swing” is can be placed anywhere. It is powered by humans swinging on it, generating sounds.



POOP TOWER
Photograph and model: the authors, 2025.

The “Toilet Tower” is a public toilet with a small garden on the roof. Faeces are used as fertiliser to grow toilet paper plants.



OPEN KITCHEN
Photograph and model: the authors, 2025.

The “Open kitchen” is located close to a grocery store. Rainwater collected on the roof powers the kitchen and waters the garden. Any food grown there is free to take.



DANCE POD
Photograph and model: the authors, 2025.

The “Dance Pod” can be placed anywhere. There, members of the public can join in with a spontaneous dance party. It is powered by solar energy.



JOURNEY OF YOUR LETTER
Photograph and model: the authors, 2025.

The “Journey of your letter” is an extraordinary postbox. It scans the address and displays the letter’s journey on a screen. It is solar-powered.



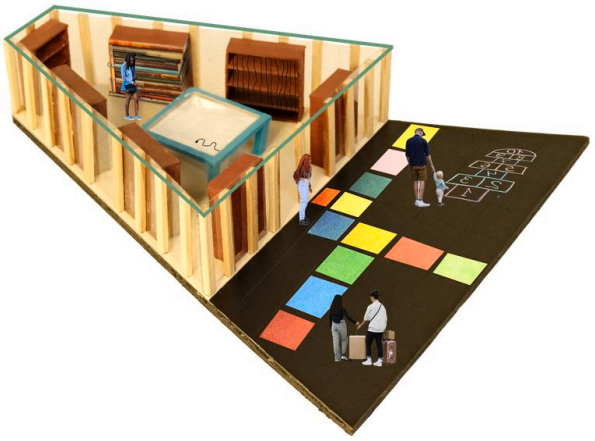
MEDITATION TUBE
Photograph and model: the authors, 2025.

The “Meditation Tube” is situated in an unused tunnel of Data Center Stollen Lucerne. Turning the handle generates light. It is an offline space of peace and quiet.



NO PAIN, NO GAME
Photograph and model: the authors, 2025.

“No Pain, No Game” is a fitness centre with treadmills that power the gaming consoles in the basement below.



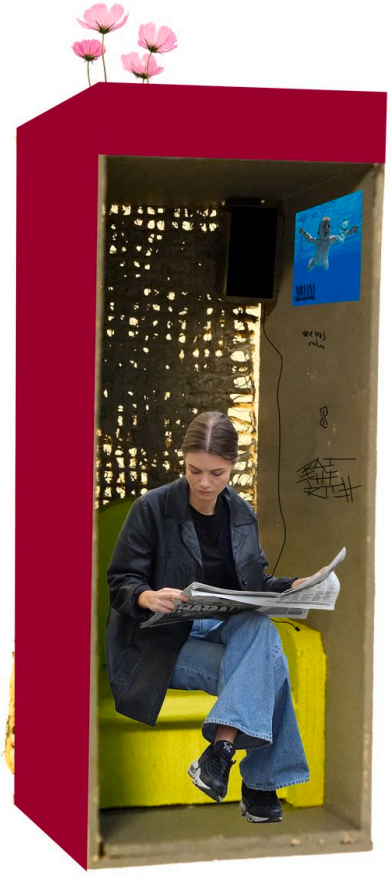
THE ARCHIVE MATCH
Photograph and model: the authors, 2025.

The “Archive Match” is powered by people bypassing the building and being encouraged to play games. Inside, the archival process of old data storage systems is demonstrated.



MATERIAL HUB
Photograph and model: the authors, 2025.

The “Material Hub” can be placed anywhere. It is a space where material is publicly stored for projects.



THE SENSORY TANK
Photograph and model: the authors, 2025.

The “Sensory Tank” can be place in any building or highly frequented site. It is a space to calm down the nervous system and relax from the sensory and data overload.



THUNDER DOME
Photograph and model: the authors, 2025.

The “Thunder Dome” is placed on an empty spot in the city fabric. It’s a creative space for people and includes several server rooms on the first floor. Lightning powers the “Thunder Dome.”

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This work by Mateo Mesenholl, Fiona Wong, Lilo Patt, and Janka Beck was created as part of the design studio The Production of Cloud at ETH Zurich in Fall 2025. The PDF is intended for educational purposes only. Its commercial distribution is strictly forbidden.

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