

PENS-321

Navigating exhausted landscapes

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Cursus	Sem.	Type
Projeter ensemble ENAC	BA6	Opt.

Language of teaching	English
Credits	4
Withdrawal	Unauthorized
Session	Summer
Semester	Spring
Exam	During the semester
Workload	120h
Weeks	12
Hours	4 weekly
Courses	1 weekly
Project	3 weekly

Number of positions

Il n'est pas autorisé de se retirer de cette matière après le délai d'inscription.

Summary

This course focuses on the challenges of transforming urban industrial sites in light of the living dynamics that run through them. It aims to experiment with an interdisciplinary approach their regeneration through the prism of a field investigation and a construction of a vision.

Content

This course aims to integrate practices from architecture, environmental sciences, and geotechnics to regenerate polluted urban environments. Observation, evidence gathering, data analysis, readings and design process will inform one another, leading to the formulation of a research question and a proposal for an intervention.

Swiss cities have been developing inwardly, and for decades their productive areas have been radically transformed and densified. In the face of our climate emergency, the commonly accepted methods of planning the city through zoning, aimed at maximizing land profitability, struggle to meet ecological and social imperatives. The overlapping of ecological, social, and economic issues, stratified over time and space, complicates the process of transforming industrial brownfield sites into livable spaces. A comprehensive understanding of the risks and potential of these sites requires a transdisciplinary knowledge involving social and environmental sciences. The quality of soils, largely polluted by past or ongoing industrial activities, is poorly understood, and regeneration processes are incomplete. Urban transformation must therefore be considered within the depth of the critical zone (the interface between the atmosphere and the Earth's continental crust), involving the study of soils, deep and surface waters, and both aerial and underground ecosystems. In current urban scenarios, production sites are relegated to the fringes of the city, and Third Landscapes (Clement) are doomed to disappear, even though they offer fertile ground for both human and non-human living dynamics. Focusing on the industrial substance of our cities allows us to understand the nature of our heritage and the dominant processes of its preservation, demolition, or transformation. Through observation and description, we will explore the substance of the land and its buildings and attempt to identify the elements that need to be supported and reinforced. Industrial heritage is burdened with a negative legacy (soil pollution, health risks, groundwater contamination, etc.). These are realities that cannot simply be erased, and whose agency remains difficult to measure, even with current technologies. Addressing these issues in strategies for transforming our living spaces is therefore crucial to better envisioning the future. Global warming calls for the regeneration of our cities and new processes of transformation. Biodiversity, social equity, public space livability, and the quality of both built and non-built environments are essential for achieving spatial justice and require innovative design tools and management strategies.

The application of scientific methodologies across four disciplines (architecture, environmental sciences, geotechnics, and the history of science and technology) will support the identification, collection, and organization of data with the aim of articulating relevant research. This course leverages urban planning and architectural practices to analyze site and inhabitants' needs, organize data into coherent narratives, and design a spatial proposal. Methods and tools of

environmental sciences will be used to gain a precise understanding of the relevant ecosystems, their interactions, roles, and potentialities. Geotechnics will be employed to delve into the Earth's layers, analyzing soil characteristics and groundwater flows. Knowledge from the history of science and technology will provide a perspective on the relationships between tools, discoveries, and representations. Raising awareness of anthropological practices will help develop an 'ecology of attention' (Citton), which is essential for conducting field investigations. Particular focus will be given to interdisciplinary approaches to representation and communication.

Keywords

Urban regeneration, Productivism, Negative commons, Industrial Legacy, Critical zone, Remediation
Groundwaters, Soil, Aboveground and underground ecosystem, Field survey, Territory, Spatial analysis, Traces, Potentialities, Narratives

Learning Outcomes

By the end of the course, the student must be able to:

- Construct an analytical perspective on a situation and a place, adopting a holistic approach to the rhythms and elements that constitute it.
- Develop an awareness of the relationship between the recording tool, the observed object, and the collected data.
- Assemble, prioritize, and structure information to build a narrative.
- Identify the components of a site that are essential for its survival and require support, protection, or reinforcement.
- Formulate strategies for transforming a space in order to anticipate its future state, taking into account its negative commons.
- Develop a project proposal, with a focus on effectively using representational and communication skills to clearly convey an idea.

Transversal skills

- Demonstrate the capacity for critical thinking
- Take account of the social and human dimensions of the engineering profession.
- Identify the different roles that are involved in well-functioning teams and assume different roles, including leadership roles.
- Communicate effectively with professionals from other disciplines.
- Demonstrate a capacity for creativity.

Teaching methods

The semester will be structured around fieldwork sessions, theoretical lectures, group practical workshops, design workshop and thematic seminars. Additionally, the analysis of targeted scientific and philosophical texts will encourage the development of a critical perspective. Students will work mostly in groups.

Interdisciplinarity:

The learning framework will enable students to develop and share research processes in a transdisciplinary manner. From the very beginning of the semester, with the aim of formulating a common problematic, students will be required to experiment together with investigative procedures in a defined territory, drawing on the knowledge from their discipline, as well as the associated tools and methodologies. The holistic analysis required for the field study will allow each student to contribute their knowledge, deepen it, and apply it in a complex multidisciplinary context, while becoming aware of the issues relevant to other disciplines. The objective is to consider the transformation of our common spaces through the notion of the "critical zone", involving knowledge from geotechnics, the history of science and technology, as well as environmental, social, and urban sciences. A dialogue between disciplines will be necessary throughout the semester to experiment with methods of representing and telling a story of the collected data.

Expected student activities

Each group of students will develop a holistic vision for the site, which will include concrete proposals and strategies for a livable neighborhood - drawing on the concept of a guiding image (urban design). The format of the presentation will be selected based on the theme and the skills of the group members (text, report, model, drawing, film, audio, etc.). The

speculative vision should aim to reveal the potential of the site, whether visible or invisible. Proactive participation in classes, workshops, and work sessions, both individually and collectively, is expected throughout the semester.

Assessment methods

Assessment will be continuous throughout the semester.

- **10%** of the grade will be based on the student's participation during the semester.
- **10%** will be based on an initial individual exercise.
- **30%** will be based on the midterm presentation of the group project.
- **50%** will be based on the final presentation of the group project.

The projects will be presented and discussed collectively, according to the following criteria:

- Ability to conduct field research
- Capacity to identify and organize scientific data to construct a coherent narrative
- Aptitude for working as part of a multidisciplinary team while maintaining the specificity of one's discipline
- Quality of proposals, design, and presentation formats

Resources

Moodle Link

- <https://go.epfl.ch/PENS-321>