

AR-476

UE U : Cartography

Mações Costa Bárbara

Cursus	Sem.	Type
Architecture	MA1, MA3	Opt.
Mob. AR	H	Opt.

Language of teaching	English
Credits	4
Withdrawal	Unauthorized
Session	Winter
Semester	Fall
Exam	During the semester
Workload	120h
Weeks	12
Hours	4 weekly
Lecture	3 weekly
Exercises	1 weekly
Number of positions	
It is not allowed to withdraw from this subject after the registration deadline.	

Remark

Inscription faite par la section

Summary

Teaching unit on mapping environmental relations in architecture.

Content

Maps are visual tools for thinking about the world at many scales. They shape scientific hypotheses, organize political and military power, delineate private property, and reflect mental conceptions about landscapes and nonhuman nature. In the Western tradition, medieval maps were less territorial descriptions than conceptual cosmologies, occasionally depicting biblical stories, mythology, history, flora, fauna, and exotic peoples and species. With the advent of modernity, an important shift took place. Cartesian perspectives began to trace the world in relation to a fixed human subject, while mathematical God's eye views surveyed the land from an abstract elevated "nowhere." Accurate maps, stripped of all elements of fantasy, religious belief, and authorship, became essential tools for modern scholars and states who sought rational progress through scientific prediction, social engineering, and planning. Cartography became concerned with analyzing and measuring the *res extensa*, and the land survey emerged as a crucial instrument of capitalist development.

As Neil Smith explained, capitalism required the invention of "space as emptiness, as a universal receptacle in which objects exist and events occur, as a frame of reference, a coordinate system (along with time) within which all reality exists." But the flip side of treating the environment as an abstract container is treating architecture as an abstract object, disembedded, consumed, and aestheticized for its own sake. From this radical separation, maps become quantitative systems for managing phenomena, while buildings become circulating commodities for the valorization of land rent. In today's context of ecological crisis, this separation is visibly contradictory. The environment is not a backdrop or a container of natural resources, just as architecture is not a collection of objects floating in a vacuum. Buildings and landscapes constitute each other dialectically, regardless of whether their relationship is collaborative or antagonistic, and cartography can render this dynamic concrete.

This teaching unit proposes a cartographic method for embedding architecture in its environment. By mapping buildings in their space and time, we reveal the invisible backgrounds that make up their material conditions of possibility. The aesthetic choices conveyed in the so-called "object" thus appear no longer disinterested, but complex, as a rich totality of environmental relations. Throughout the course students should keep in mind the following questions: how should architecture reflect society's relation to the environment; how should it constitute a critique of said relation; and how should it predict a collective ideal?

Sessions

1. Cartography and Modern Abstraction

2. Drawing: Visual Layers
3. Planning: Spatial Figures
4. History: Social Formations
5. The Dialectical Method
6. GIS Workshop with Aurèle Pulfer (ALICE)
7. *Midterm Reviews*
8. Environmental Thresholds
9. Territorial Conduits
10. Domestic Enclosures
11. Wilderness Frontiers
12. *Final Reviews*

Keywords

Architecture, Cartography, Dialectics, Environmental aesthetics, Modern/postmodern urban politics.

Learning Prerequisites

Recommended courses

Preparation for design and research studios that reflect on cross-scale relationships and the ecological backgrounds of architectural form. Provides a methodological foundation for the Enoncé théorique de master and the orientation Project Urbain. Content is closely related to the theory course AR-505 Modernity, Architecture and the Environment, which teaches a textual/discursive version of the same question and method.

Learning Outcomes

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

- Draw abstract visual layers from complex landscapes.
- Assemble those layers to form spatial figures.
- Contextualise those figures in the concrete spatial and historical development of the site.
- Systematize (map) a building as a dynamic and contradictory totality.

Teaching methods

The course takes a skeptical stance toward traditional claims of "cartographic truth" by addressing the map's internal tension between sensuous perspective and rational plan. The method blends tools from art (hand drawing), planning (remote sensing), and history (dialectical criticism). Hand drawing guides the initial process of abstraction and layering; planning offers a set of spatial figures as metaphors for the urban palimpsest; and a dialectical approach to historical development reveals hidden relationships between form and context. In this way, cartography reconciles the immanent (object) and the contingent (environment), allowing us to measure how certain buildings function as devices of environmental mediation.

Theoretical content is provided through weekly lectures, and practical assignments are supported by weekly desk critiques and group reviews. Classes include close reading of historical maps, and the analysis of texts and films on cartography, landscape, and environmental politics. Special emphasis is placed on hand drawing, AI, CAD, and GIS, but no previous experience is required.

Assessment methods

Continuous assessment: midterm review 25%; final review 50%; intermediate exercises and class participation: 25%. All classes are held in English, reviews may be held in French.

Supervision

Office hours	No
Assistants	No
Forum	No

Resources

Bibliography

- AURELI, Pier Vittorio. "Life, Abstracted: Notes on the Floor Plan." *e-flux Architecture* (October 2017). Available at <https://www.e-flux.com/architecture/representation/159199/life-abstracted-notes-on-the-floor-plan>.
- COSTA, Bárbara Mações. "Conduit, Patio, Waste Mapping Environmental Relations in Bairro da Malagueira." PhD diss. École polytechnique fédérale de Lausanne, 2021.
- HARVEY, David. "The Experience of Space and Time." In *The Condition of Postmodernity*, 201-326. Cambridge, MA: Blackwell, 1990.

Ressources en bibliothèque

- [The Condition of Postmodernity / Harvey](#)
- [Conduit, Patio, Waste / Costa](#)
- [Life, Abstracted : Notes on the Floor Plan / Aureli](#)

Notes/Handbook

Detailed syllabus with dedicated class readings provided upon enrolment. Reading ahead advised but not mandatory.

Websites

- <http://ueucartography.com>
- <https://barbaramacaescosta.info/Cartography>

Moodle Link

- <https://go.epfl.ch/AR-476>