

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
Courses	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 offering a critical method for mapping environmental aesthetics 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 not territorial descriptions as much as conceptual cosmologies, 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 seeking rational progress through scientific prediction, social engineering, and planning. Cartography thus became concerned with analyzing and measuring the *res extensa*, and the land survey emerged as a crucial instrument of land development.

As Neil Smith noted, 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 . . . 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 global social and ecological crisis, this separation has proven to be misleading. The environment is not a backdrop or a container of natural resources, just as architecture is not a collection of iconic 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 critically 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 will consider 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/project a collective ideal?

Sessions

1. Cartography and Modern Abstraction

2. Drawing: Visual Layers
3. Tracing: Spatial Figures
4. Mapping: Environmental Formations
5. The Dialectical Method
6. GIS Workshop
7. *Midterm Reviews*
8. The Map as Critique and Praxis
9. Primitive Hut vs. Tower of Babel
10. Pipes, Enclosures, Frontiers
11. The Cartographic Essay
12. *Final Reviews*

Keywords

Architecture, Cartography, Dialectics, Environmental aesthetics, Modern/postmodern context debates.

Learning Prerequisites

Recommended courses

Preparation for design and research studios that reflect on cross-scale relationships and the environmental backgrounds of architectural form. Provides a methodological basis for the *Enoncé théorique de master* and the orientation *Projet Urbain*. Content is closely related to the theory course *Modernity, Architecture and the Environment (AR-505)*, which teaches a more historical and literature-based version of the same critical 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 sceptical stance toward traditional claims of mathematical truth by addressing cartography's internal tension between sensuous perspective and rational plan. The method uses 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; finally, 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).

Theoretical content is provided through weekly lectures. Practical assignments are supported by desk critiques (scheduled in advance to cover the whole class every two weeks). Group discussions will engage in close readings of historical maps and the analysis of texts and films on cartography, landscape, and environmental aesthetics. Special emphasis is placed on hand drawing, Adobe Illustrator, CAD, and GIS but no previous experience is required.

Expected student activities

Afternoon fieldtrip to the Geneva Botanical Gardens for life drawing exercises.

Expected Costs

Costs will vary according to personal investment and project specifics, e.g. printing costs will depend on the size of maps and the amount of work produced by the students. An afternoon excursion to the Geneva Botanical Gardens and a list of optional and compulsory drawing materials should cost an additional 30 to 50 Swiss francs.

Assessment methods

Continuous assessment: intermediate exercises and class participation: 25%; midterm review 25%; final review 50%. All lectures will be held in English, reviews and table crits may be held in English or 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>.
- HARVEY, David. "The Experience of Space and Time." In *The Condition of Postmodernity*, 201-326. Cambridge, MA: Blackwell, 1990.
- MAÇÃES COSTA, Bárbara. "Conduit, Patio, Waste Mapping Environmental Relations in Bairro da Malagueira." PhD diss. École polytechnique fédérale de Lausanne, 2021.

Ressources en bibliothèque

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

Notes/Handbook

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

Websites

- <http://ueucartography.com>

Moodle Link

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