ARCHITECTURE OF THE EARTH

FALL 2025 | MATTER TO DATA STUDIO + WORKSHOP

2025 Fall Studio
Architecture of the Earth | Matter to Data
Professor: ***Antón García-Abril,*** *ensamble@mit.edu*

“Nada es inventado, pues está escrito en la naturaleza primero” - *Antoni Gaudí*
("Nothing is invented, for it is written in nature first.")

“La arquitectura es la expresión de una época, de un lugar y de un momento, pero debe aspirar a la atemporalidad” - *Rafael Moneo*
(Architecture is the expression of an era, of a place, and of a moment, but it must aspire to timelessness.)

STUDIO Description:

Architecture of the Earth explores a philosophy that treats the building not as an object placed upon the landscape, but as an extension of the earth itself. The course will challenge students to design a new structure near a site of historical and geological significance, where they will explore how architecture can emerge from the raw materials and ancient memory of the land.

The project is a deep dive into an approach where natural landforms are the primary sources of architectural language. Students will investigate how the built form can blur its boundaries with the natural environment, creating a new layer in the timeless dialogue between human creation and the earth. The goal is to create a space that respects its past while embodying a future where culture and nature are inseparably linked.

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Research Methodology:

This course employs an immersive, research-driven methodology to explore a new architectural language. The process begins with a departure from sensitive design, encouraging the generation of spatial ideas and innovative techniques that are unconventional and context-specific. A key part of this approach is a deep engagement with the local environment, investigating indigenous materials and production methods to create a symbiotic relationship between the building and the landscape.

The design process is iterative, moving fluidly between digital and physical realms. Students will develop prototypes and physical models to test their concepts, using digital scanning and other audiovisual tools to document their evolution. This blend of hands-on and digital methods is formalized through the creation of instruction manuals, which document the process and provide a framework for future application. A central concern throughout is the project's environmental impact, with a focus on sustainable, low-impact construction that honors the site's natural and historical integrity.

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Castillo de San Felipe, Menorca, Spain (*St. Philip's Castle / Fort)*
Architecture of the Earth is a development of the On/Off hybrid studio, situated between Hands-On models sessions and online classes, in which students will integrate research, fabrication, and design. This studio will focus on imagining and designing a Theater Space in *Castillo de San Felipe*, Menorca, Spain. Site Location Link

The Castillo de San Felipe, situated at the entrance of Mahón's natural port in Menorca, stands as a formidable testament to centuries of strategic importance and turbulent history. Originally conceived in the mid-16th century following a devastating Ottoman raid in 1558, its construction and subsequent expansions transformed it into one of the Mediterranean's most significant defensive fortresses.

Its strategic location made it a coveted prize for various European powers, particularly the British and French, leading to multiple sieges and changes of control throughout the 18th century. Each conflict further underscored the port's critical role in naval dominance. Ultimately, its demolition by the Spanish in the early 19th century symbolized an end to an era of intense foreign intervention. Today, its extensive underground ruins offer a poignant glimpse into Menorca's past, embodying the island's enduring resilience and the perpetual interplay between human ambition and the powerful forces of its landscape.

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Student Learning Outcome Objectives:

This course is structured around a **hands-on-line studio** that emphasizes **collaboration and shared learning**. Students will work together to challenge preconceived notions and **explore the unknown** through a research-driven, iterative process. The primary goal is to empower students to generate original spatial ideas and techniques that diverge from conventional standards. True innovation lies in the ability to break free from established norms and find new ways of understanding and engaging with the built environment.

The learning journey integrates theoretical understanding with practical application. Students will engage in in-depth research through a series of **case studies**, analyzing the models, drawings, engineering, and construction of exemplary projects. This research will inform a series of **iterative model studies** and **prototypes**, which will form the core of the design process. The hands-on exploration of materials and form is central to our methodology.

To support this workflow, the course will introduce students to advanced **3D scan techniques**, including the relevant hardware and software. They will learn to apply these skills through **post-processing** of the data, enabling them to create **3D printed models**, test **structural reinforcements**, and experiment with **concrete casting**. This blend of digital and physical methods is designed to provide a comprehensive understanding of how concepts can be translated into tangible form.

The entire process will be meticulously documented using the **Google Suite platform**, which will serve as a **class diary** to track the evolution of each project. This shared digital space will foster an environment of continuous feedback and shared knowledge. Additionally, students will **participate in seminars** designed to expand their technical skills and prepare them for the hands-on fabrication and prototyping phases. The final deliverable will be a comprehensive portfolio of models, drawings, and digital documentation that demonstrates a deep understanding of the course's principles, from initial research to final fabrication. This holistic approach ensures students are well-equipped to not only design but also realize their architectural visions.

Deliverables:

The studio's research and design effort will be supported by a progressive production of materials, which are not just for final representation. Students are encouraged to experiment with different media, blending design creativity with the tools that help to develop it. This hands-on approach ensures that models and other outputs are integral to the research process, rather than just being a means of showcasing the end result.

→ Google Spaces OnlineDiary (Every class)

→ Working Models (Weekly basis_Design development phase)

- Physical Models: from concept to construction: unlimited (minimum 10)
- Photographic Material documenting models
- 3D scans of models testing scale and context, translated into animations

→ Documentation (Semester final delivery)

- of Spatial Experience
- of Construction Process

→ *15 minutes of fame* as final video delivery. (Semester final delivery)

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Schedule:

(Week 01 - 06 : Research & Design development / Week 07 - 12 : Final production & Documentation)

- **Week 01: Studio Introduction and Online Warm Up**
  Presentation (3rd September)
  Set-up of online tools (Google Suite & Google Spaces):
  Online communication and sharing of first ideas/ intuitions/ doubts.

- **Week 02: Topic Research & Case Studies**
  Student presentations and group discussion

- **Week 03-06: Mockup study and Design**
  Model Mockups and Concept design of the expo.

- ***Week 06: Mid-Term Presentations & Reviews []***

- **Week 08: Audiovisual Documentation Kick-off and Design Development**

- **Week 9-12: Production**
  Online Submission* of Final Review Materials will happen in the first week of December

FINAL REVIEW - XXh December *(tentatively)*
Note: All classes will happen on Tuesdays, Thursdays and Fridays

Portfolio Preparation/Final Digital Submission Video**

**Online submissions will be shared with all the Google space groups and show the work evolution. It should consist of a narrated audiovisual that explains the progress of the project + a link to materials. These materials will gradually take the form of the final studio publication.*

***Final Digital Submission: All final work completed as a requirement of this course is to be submitted to the Instructor digitally for final grading and documentary purposes, inclusive of all physical materials. Models and/or physical materials will need to be adequately photographed. Failure to submit material can result in an incomplete and/or lower grade.*

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Studio Program

Architecture of the Earth

- **FALL 2025**:

  Hands On-line studio:
  - Architecture of the Earth - Introduction and Guidelines
  - Site Analysis
  - Program description and Concept establishment

  Design:
  - Theater Space Design and Program Allocation (preliminary studies)
  - Workshop on 3D modeling and scanning

  Matter to Data:
  - Digitalizing the proposals
  - 3D post-processing
  - Work with the final 3D model
  - Final work and portfolio submission