STUDIO O05 - D-ARCH ETH ZURICH - HS 2026

CONTEXT

In the current context of resource scarcity and urban sprawl, the adaptive reuse of existing buildings represents a fundamental response. Whether aimed at improving thermal performance or reallocating uses, adaptive reuse is an essential architectural posture that contemporary practitioners, theorists, and academics are actively exploring.
As we observe and experience firsthand with each passing season, climatic conditions are changing rapidly. Most of the buildings we inhabit need to be updated to meet these new constraints: building less, reducing energy consumption in existing structures, and adapting what already exists to a changing climate.
Construction history reveals that before the advent of fossil fuels, builders knew how to design structures that took full advantage of their natural surroundings. Passive construction and thermal strategies responded to local specificities and were rooted in the craftsmanship and know-how of their respective eras. Subsequently, the construction methods and thermal design of most contemporary buildings were driven by a different logic—industrial development and energy abundance—resulting in a 20th-century building stock that is now largely obsolete.
This studio is a pedagogical experiment addressing how existing buildings can adapt to these transformations, identifying the structural and thermal interventions that can be implemented. Approaching rehabilitation through the lens of thermal performance, projects will develop strategies inspired by historical and vernacular bioclimatic design.

METHODOLOGY

The semester aims to enable students to master the key thermal principles at play in a building. Initially, the focus will be on understanding the behavior and qualities of an existing building through critical analysis—examining climatic context, construction systems, façade features, and usage patterns. These elements influence the building's thermal behavior and serve as the starting point for defining new comfort conditions.
The first step involves analyzing a selection of building typologies in the Zurich region. Students will visit the chosen buildings to conduct site surveys, determine actual space usage, understand construction typologies, and characterize materials. They will then analyze these buildings using thermal assessment tools to understand their current performance and identify the specific challenges their own projects must address.
Subsequently, students will analyze vernacular thermal strategies to evaluate their relevance to the issues raised during the initial site analysis. This research will provide insight into the underlying bioclimatic principles and the physical phenomena governing them.
The intervention hypotheses developed by the students will stem directly from this research. Projects will focus on experimenting with thermal strategies inspired by vernacular architecture as concrete responses to the identified challenges. Through an iterative process, proposed interventions will undergo quantitative analysis to measure the actual impact of the implemented strategies. These approaches will be grounded in contemporary expertise, experimenting with new construction methods and modern materials.

PEDAGOGICAL GOALS

Learn to survey an existing building and analyze its constructive assemblies.
Understand the core principles of building thermal behavior.
Adopt a critical posture on the concepts of thermal comfort.
Formulate pragmatic intervention scenarios based on objective data.
Develop a constructive approach that serves as the basis of the project.
Develop a consistent construction logic at every scale
Explore working hypotheses through an iterative process.
Work in teams to confront diverse perspectives.

TOOLS

The studio will experiment with constructions and materials through physical prototypes. The purpose of these built structures will be to test both thermal and construction assemblies.
The studio is organized around a shared Drive folder. Its content will evolve throughout the semester with reference materials that will serve as the foundation for the studio’s reflections. Students will upload their presentation documents into a designated folder the day before each desk critique. A tracking sheet will summarize the key discussions and exchanges for each working group. The Drive folder will constitute an active archive tracking the evolution of the studio's thinking, open to all studio members.

WORKFLOW

Studio - 24 students
Survey / thermal analysis / vernacular devices analysis - 6 groups of 4 students
Projects - 12 groups of 2 students

SCHEDULE

Week 01
15.09 - studio-student-team introduction / existing building survey
16.09 - vernacular thermal devices introduction / analysis of thermal vernacular devices

Week 02
22.09 - additional existing building survey / desk crits
23.09 - desk crits / analysis of thermal vernacular devices

Week 03
29.09 - studio work / intermediate crits
30.09 - intermediate crits / studio work

Week 04
06.10 - input lecture / desk crits
07.10 - studio work

Week 05
13.10 - studio work / desk crits
14.10 - desk crits / studio work

Week 06
27.10 - input lecture / desk crits
28.10 - studio work

Week 07
03.11 - studio work / desk crits
04.11 - desk crits / studio work

Week 08
10.11 - input lecture / desk crits
11.11 - studio work

Week 09
17.11 - studio work / intermediate crits
18.11 - intermediate crits /studio work

Week 10
24.11 - desk crits
25.11 - studio work

Week 11
01.12 - studio work / desk crits
02.12 - desk crits / studio work

Week 12
08.12 - desk crits
09.12 - studio work

Week 13
15.12 - studio work / studio tidy
16.12 - final review

TEACHING TEAM

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