



CAS ETH in Regenerative Materials – Structural Specialisation

earth – bio-based – reused

Think regenerative!

It is time to move beyond sustainability. Innovative solutions utilising local resources such as earth, bio-based, and reused materials are emerging globally. These materials drive regenerative outcomes by restoring and enhancing the surrounding natural and social environment.

The CAS ETH in Regenerative Materials – Structural Specialisation is an international programme launched by the Chair of Sustainable Construction. This programme promotes the use of regenerative materials to design and implement high-efficiency load-bearing structures for low-energy and low-carbon buildings using renewable resources. It provides a comprehensive background in structural dimensioning, durability assessments and simulation tools with regenerative materials.



Building with sustainable strength: Stone, straw, rammed earth and bamboo for regenerative construction

Objectives

The programme teaches participants to engage in the structural dimensioning of durable buildings and infrastructure made from materials such as stones, rammed earth, straw bales, hemp, bamboo, and reused concrete and wood elements. Participants will develop skills in structural efficiency and load-bearing design, considering embodied energy, long-term durability, moisture and thermal regulation and design for disassembly.

Professional perspectives

The programme ensures a significant and lasting impact on participants' professional development. Graduates are prepared to work as project managers in architecture or engineering firms, municipal technical services, or as portfolio managers, developers, and NGO members. Alumni of the CAS-RM-Struct programme join an active and growing professional network.

Target group

Decision-makers and practitioners in the construction sector from Switzerland and abroad: structural engineers, architects, civil engineers, project managers, members of municipal technical services, building contractors, and NGOs.

Programme fee

CHF 8,230.

The Ricola Foundation offers scholarships to a limited number of participants. If you need the scholarship to take part in this course, please mention your reasons and limitations in your motivation letter and contact the Programme Manager.

Duration

1 semester, from September to December, every two years.

Structure and format

- Four modules, each lasting around one week (in-person contact), with consultancy periods and few days of on-line group work during the last module. A project presentation in front of a jury is organised on the last day.
- Teaching language: English.
- Complementary teaching methods rooted in active learning, including input lectures, visits to reference buildings, practical hands-on activities, interactive discussions, and group projects.
- 12 ECTS credits.

Other CAS & DAS in Regenerative Materials

To address the shortage of expertise in these areas and to challenge traditional construction methods, we offer two Certificates of Advanced Studies (CAS) in Regenerative Materials at ETH Zurich. Additionally, with the completion of the two CAS it can be combined to a Diploma of Advanced Studies (DAS), which includes supervised personal projects.

Modules

Module 1	General knowledge on regenerative structural applications
Module 2	Advanced knowledge and durability of regenerative structures
Module 3	Hygrothermal assessment of regenerative structures
Module 4	Project work on structural validation and durability

ETH Zurich
Institute of Construction and
Infrastructure Management
Chair of Sustainable Construction
Stefano-Francini-Platz 5
8093 Zurich

Professor Guillaume Habert
Programme Director

Dr Arnaud Evrard
Programme Manager
evrard@ibi.baug.ethz.ch
Tel. +41 44 633 40 21



sc.ibi.ethz.ch/cas-spec

Publisher: ETH Zurich, Institute of Construction and
Infrastructure Management
Editors: Arnaud Evrard, Nathalie Dietrich
Layout: Damaris Eschbach
Photos: Collectif Studiolada^[1], Polina Saante^[2], ZRS
Architekten Ingenieure^[3]

© ETH Zurich, March 2025

