

I D E A S

INTERDISCIPLINARY MINOR IN INTEGRATED DESIGN, ARCHITECTURE AND SUSTAINABILITY

Laboratory of Architecture and Sustainable Technologies (LAST)

Laboratory of Integrated Performance in Design (LIPID)

Structural Xploration Lab (SXL)

Building2050 Group

ideas.epfl.ch

ISSUES AND OBJECTIVES

- Integration of energy transition and climate change issues in MA cycle
 - focus on use of natural resources, carbon neutrality and energy consumption (integrated design)
 - valorization of existing course offering
- ENAC synergies
 - interdisciplinarity
 - broad spectrum of ENAC classes (MA level) at the interface between design, technology and society
- Targeted orientation for students
 - resource- and energy efficiency, occupant comfort, climate-responsive strategies to deal with complexity
 - valorize your competences in sustainable architecture and integrated design in the practice
 - research by design

PRINCIPLES AND COURSE OFFERING

- Course offering
 - list of 23 courses totaling 78 ECTS, mostly within ENAC
 - class offerings in the fall, spring and summer
 - courses outside EPFL (max 5 ECTS, validated by IDEAS committee)
- Diversified selection
 - balanced selection from SAR, SGC, SSIE with some classes from STI or SB
 - combination of theory classes on comfort, energy, environment and infrastructure, and of project-based courses

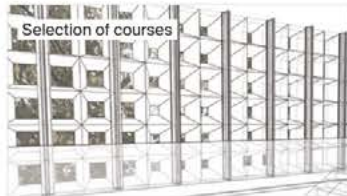
IDEAS MINOR REQUIREMENTS

- **Minimum 30 ECTS** (to be validated by SAC)
- Equal balance of ECTS from two groups:
 - **Core courses : Minimum 14 ECTS**
Basics on energy (GC), comfort (AR), ecological footprint (SIE) and hands-on (semester projects/UE)
 - **Theory courses : Minimum 14 ECTS**
3 topics: energy (fundamentals), environment (strategies), systems (infrastructures)
- **At least 10 ECTS chosen outside of own section**
- Validation by IDEAS Minor Committee
- Interactive **validation form** available on the IDEAS website
> **ideas.epfl.ch**

- Selection of courses
- Validation
- TEACHING UNIT U.E.K.
- PHD SEMINAR
- EVENTS
- NEWS

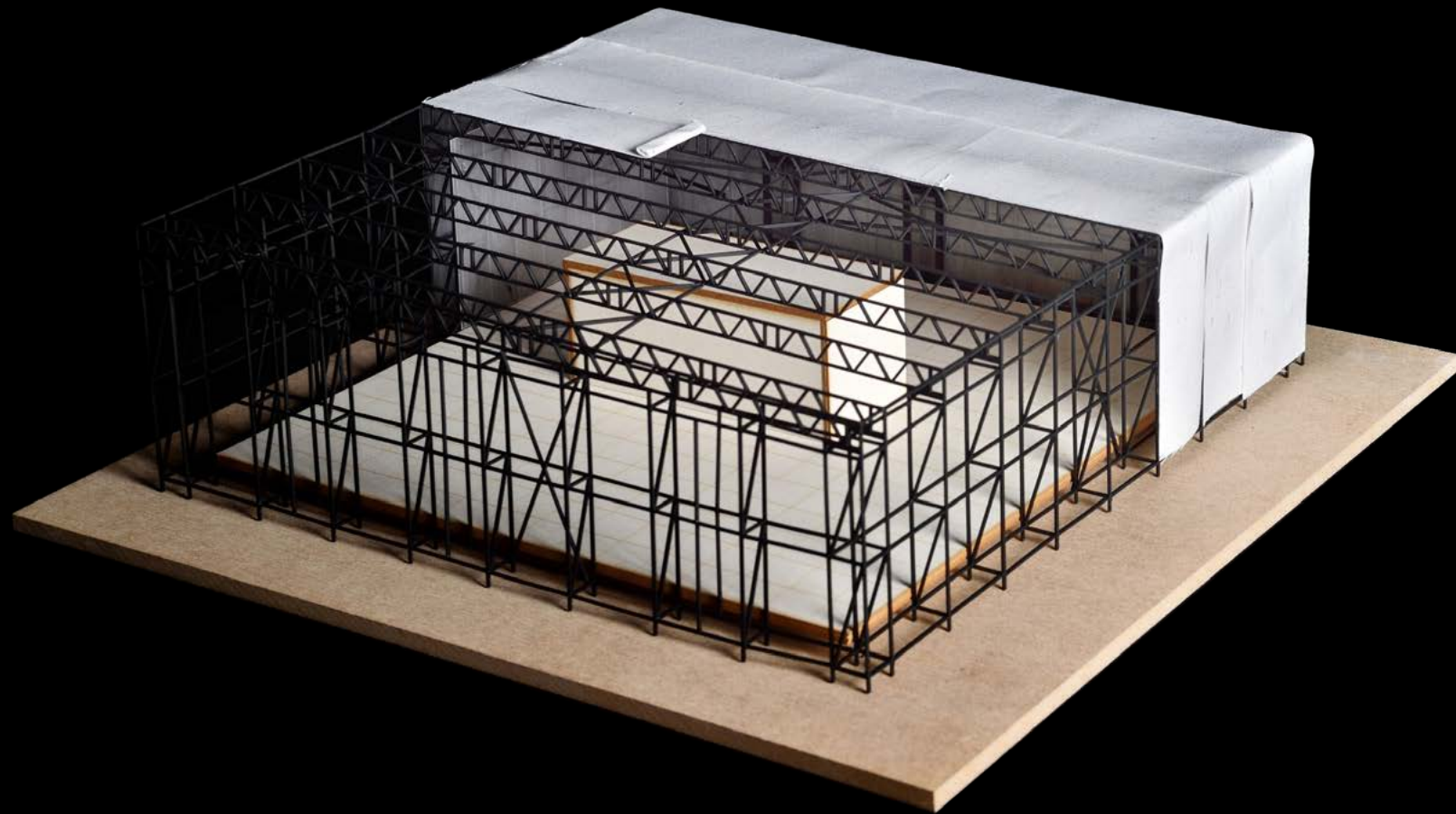
IDEAS MINOR

The interdisciplinary Minor in Integrated design, Architecture and Sustainability (IDEAS) responds to a need to further reinforce the integration of sustainable architecture questions within the Master Cycle in Architecture, Civil and Environmental Engineering. It focuses on issues of energy consumption and the use of natural resources within the global framework of integrated design.



CORE COURSES (Min. 14 ECTS / Total 32 ECTS)

Code	Class	Lecturer(s)	Section	ECTS
ENG-445	Building energetics	Khovalyg/Licina	GC	3
ENV-461	Sustainability assessment of urban systems	Binder/Merino-Saum + Merino-Saum	SIE	3
AR-442	Comfort and architecture: sustainable strategies	Andersen/Karmann/Wienold + Karmann/Wienold	AR	3
AR-434	Théories et techniques du projet de sauvegarde	Graf/Marino	AR	3
PENS-494	Projet ENAC pour mineur IDEAS*	Divers enseignants	AR/GC/SIE	4
CIVIL-493	Projet interdisciplinaire à option*	Profs divers	GC	4
PENS-491	Summer workshop**	Divers enseignants	AR/GC/SIE	4
AR-440	UE K : Architecture et durabilité: études de performances	Andersen/Fivet/ Rey/Karmann/Fumeaux/Pastore	AR	4
AR-435	UE R : Introduction au BIM	Cache/Hautecoeur	AR	4



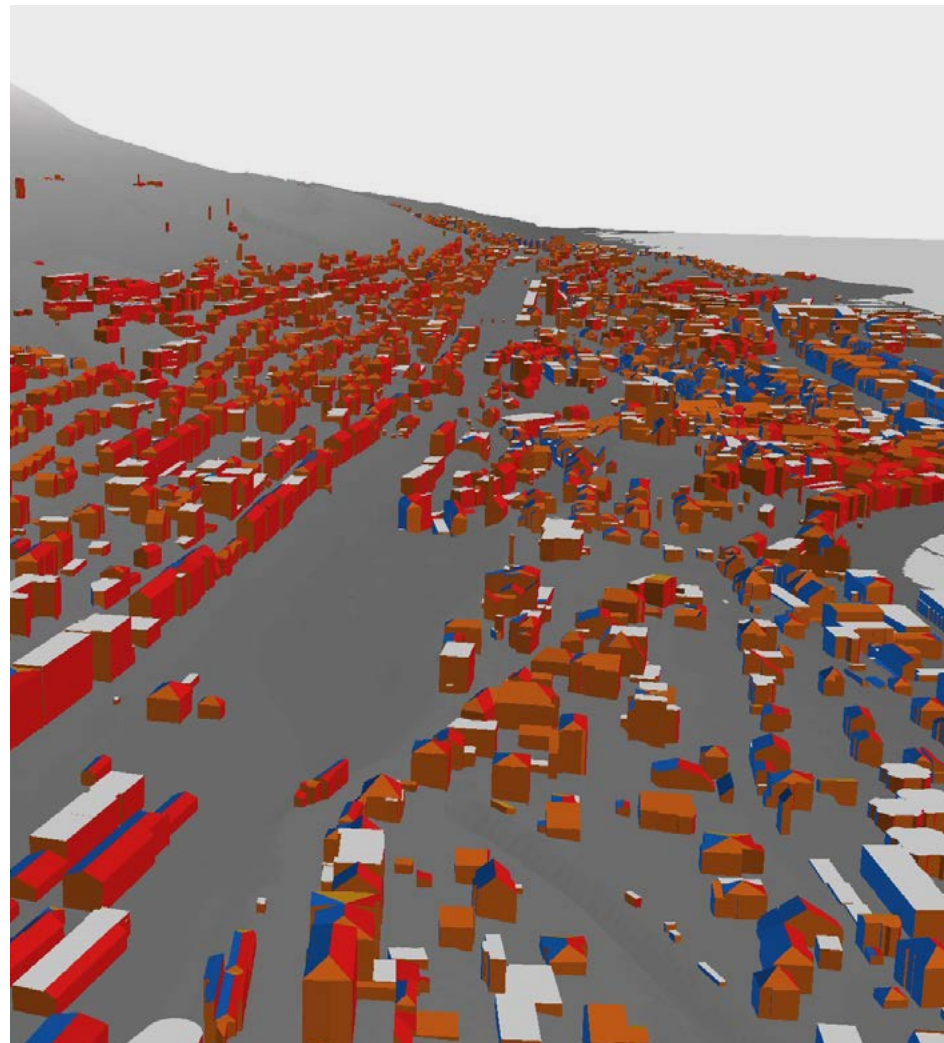
THEORY COURSES (Min. 14 ECTS / Total 51 ECTS)

Code	Class	Lecturer(s)	Section	ECTS
AR-449	Architecture et énergie solaire	Munari Probst	AR	3
ME-454	Modelling and optimization of energy systems	Maréchal	GM	4
ENV-409	Air pollution	Takahama/Reimann	SIE	5
ENG-474	Etudes d'impact	Schmidt F./Devanthéry/Helfer	GC	3
MSE-463	Recycling of materials	Leterrier	MX	2
ENV-469	Systèmes de management environnementaux	Baracchini	SIE	2
CIVIL-450	Thermodynamics of comfort in buildings	Khovalyg	GC	3
CIVIL-460	Indoor air quality and ventilation	Licina	GC	3
AR-496	Behind/Beyond future cities	Mauree/Coccolo	AR	3
AR-497	Building design in the circular economy	Fivet	AR	3
ENV-470	Development engineering	Hostettler/Schönenberger	SIE	4
AR-483	Interactive conceptual design of structural forms	Fivet	AR	3
ENV-501	Material and energy flow analysis	Moreau/Binder/Athanassiadis	SIE	4
AR-484	Introduction au BIM	Hautecoeur	AR	3
Course outside EPFL (upon request, in agreement with IDEAS committee)		Various prof.		5 max.

IDEAS MINOR STUDENTS

- 92 students in total (August 2022)
 - 70 IDEAS Minors achieved
(30 Architecture, 26 Civil Eng., 14 Environmental Eng.)
 - 22 IDEAS Minors in progress
(16 Architecture, 5 Civil Eng., 1 Environmental Eng.)
- Valorization opportunities for IDEAS Minor Alumni in the fields of professional practice, innovative start-ups and research
- Increased demand for skills in integrated design, architecture and sustainability





ideas.epfl.ch
sophie.lufkin@epfl.ch

I D E A S

INTERDISCIPLINARY MINOR IN INTEGRATED DESIGN, ARCHITECTURE AND SUSTAINABILITY

Laboratory of Architecture and Sustainable Technologies (LAST)

Laboratory of Integrated Performance in Design (LIPID)

Structural Xploration Lab (SXL)

Building2050 Group

ideas.epfl.ch

