ARCHITECTURE AND SCIENCES OF THE CITY
The Doctoral Program in Architecture and Sciences of the City (EDAR) invites doctoral students to accomplish an interdisciplinary exploration of inhabited space in the international and dynamic environment of the EPFL.

The program brings together the world of architecture (history, theory, projects) and that of urban sciences (geography, urban sociology, environmental economics, housing and networking, urbanism and spatial planning). While the EDAR program stays open to mathematics, the sciences of matter and life and the science of engineering it maintains particularly close relations with the School of Architecture, Civil and Environmental Engineering (ENAC).

“What if there were no cars?”

This basic hypothesis projects us into an alternative world capable of shedding a new light on today’s mobility. Through the lens of a formalized PostCarWorld, we shall appraise the role of the automobile in our societies and envision new possibilities for mobility and spatial development.

The goal of our FNS Sinergia project, lead by the Chôros lab, is to simulate diverse post-car scenarios from a plurality of disciplinary points of view. The Chôros, LaSUR and CEAT (EPFL, EDAR members) with the IRE (USI) examine post-car worlds imagined by individual actors, and the social potentials of emerging mobility solutions. The Transp-OR lab (EPFL), and the IVT (EPFZ) focus on large-scale mobility infrastructures. The Lab-U (EPFL, EDAR) adopts the perspective of urban and landscape design.

Our approaches emphasize the observation of present-day's society, including the diversity of its expectations regarding the future. Swiss spaces are our main geographical reference.

Link:  
http://postcarworld.epfl.ch
Loïc Fumeaux graduated as an architect in 2007 at EPFL. His Master’s thesis was about sustainability integration from urban scale to the architectural details. Two years later he became a studio assistant at the LAST (Laboratory of architecture and sustainable technologies) headed by Prof. Emmanuel Rey. After a period dedicated to teaching, he began a PhD focused on the integration of sustainability criteria into the design process of temporary event infrastructures. A field of architecture booming but still little explored, for which the characteristics of use flexibility and economic efficiency often take precedence over considerations related to their impacts.

From a methodological view, his research is based on a diagnose of existing infrastructures which are assessed using a multicriteria approach that take into account multiples parameters of sustainability. From this assessment, the research imagines a preliminary conceptual design which propose strategies to reach a high level of comfort, an optimal use of resources, a minimization of impacts, and integration of bioclimatic strategies to achieve it. From there, through a process of integrated design involving interdisciplinary actors (users/engineers/builders/operator), the concept will be optimised to achieve an operational prototype which meet the initial objectives.

As a PhD student at the Urban and Regional Planning Community (CEAT), my research focuses on the effects of institutional fragmentation on the development of urban centers, and in particular investigates municipalities’ ability to interact in order to collectively respond to regional challenges. To do this, I analyze changes in the relationships between actors and the inter-communal relations resulting directly from the realization of urbanization projects that sit astride institutional frontiers.

The scope of empirical lessons learned from case studies is not limited to Switzerland – my personal field of investigation – but aims more generally at increasing knowledge about the complex system of relationships among metropolitan communities in an institutional setting that historically attributes considerable autonomy to local government. The scope of my research subject also stems from a longstanding personal questioning of the possibility of aligning two imperatives: the conservation of the intrinsic values of local democracy and the development of true political cybernetics in fragmented metropolitan areas. In my lab and in the doctoral program in general, I find a very diverse range of academic skills and scientific questions that allow me to build my research by successive increments.

As a young researcher, I find that this great diversity and the richness of exchanges are among the most stimulating aspects of this environment.

Loïc Fumeaux

Marc Antoine Messer

Fiona Pia

Alpine ComplexDesign

Supported by the Swiss National Science Foundation, the ComplexDesign doctoral program studies through interdisciplinary means complex projects, including major strategies involving infrastructure, equipment and habitat over an area of at least 100,000m².

Case studies were selected including the city, the countryside and the mountains. Fiona Pia is currently researching Urbanization of the Alps, in order to analyze complex alpine projects in contemporary context.

The concept of urban sprawl is highlighted in the Swiss news more than ever and especially apparent in the Alps. Massive urbanization in the mountains initiated by the development of ski resorts, specifically in sites over 1400 meters, is continuing to take momentum in an uncontrolled way. Alpine urban sprawl is the result of the multiplication of individual chalet style houses, causing great controversy. The people’s acceptance of the Franz Weber initiative in March 2012 marks an exemplary shift. The urbanization of the Alps requires new urban, legal and economic solutions. How should the Alps be urbanized or deurbanized today? Is the Alpine Complex Project a more relevant solution than developing using current piecemeal construction in the urbanization model of the Alps?

Links:
http://complexdesign.epfl.ch
http://people.epfl.ch/fiona.pia
Research opportunities:

Active within almost 30 labs, mainly from the School of Architecture, Civil and Environmental Engineering, the EDAR program receives three times a year new doctoral students interested in its scientific orientations which encompass four research areas:

- Sciences of the City
- History, Theory, Heritage
- ComplexDesign
- Integrated Design, Architecture, Sustainability

Application deadlines

The on-line application to the doctoral program in Architecture and Sciences of the city (EDAR) can be received by January 15, April 30 and September 15. For any information, please visit our website.