



ENAC

**School of Architecture, Civil
and Environmental Engineering**



Activity Report 2006

Activity Report 2006

Impressum

Ecole Polytechnique
Fédérale de Lausanne

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Editorial

2006 was a year of assessment and a year of great pride. A major effort was accomplished by all of us to prepare the audit of ENAC by a top international committee. The output, briefly presented later in this annual report, positions our School among the leading institutions of the world. This is a fantastic accomplishment, a success which finds its roots in the quality of our vision (the "projeter ensemble" concept), our polytechnic culture, the quality of our students and educational programmes, the level of our professors and staff, the outstanding research support and production, the quality of our infrastructure and our fruitful industrial/academic networks.

In addition, another audit performed late 2006 by the Swiss OAQ and the French CTI reached a positive conclusion concerning our three master programmes. We shall receive the official accreditations soon. This further attests the quality of our curriculum.

In the future, we will have to work along several avenues. First, we shall implement the various proposals yielded by the audits, further improving our academic performance; we shall also work to fully integrate our talented new members (35 professors appointed or promoted over the past four years!); finally, we shall fight for resources (the number of 1st year students has doubled over the past six years, while our internal budget was kept constant).

ENAC has a bright future: no matter what, mankind will have to design and build a sustainable environment for all to live in. We strongly believe we can contribute to this.



*Professor Laurent Vulliet
ENAC Dean*

Strategy and Mission of the ENAC School

The strategy of the School of Architecture, Civil and Environmental Engineering is to deal with the major topical issue of the integration of human activity within the biosphere in terms of sustainable development. In this context, the basic mission of the ENAC School is to produce innovative solutions to face up to current global challenges, such as (1) strong population growth, formation of mega cities and considerable land use pressures; (2) increased demand for energy and transportation, (3) need for improvement and maintenance of the built environment, (4) environment and bio-ecosystem preservation; (5) natural and man-made risk management.

With this in mind, the School is actively deploying a multi-disciplinary programme to Design and Build Together ("Projeter ensemble"), whose objective is to promote interaction between art, science and engineering in both teaching and research.

In terms of education, the range of courses includes studies for Bachelor's and Master's degrees in architecture and civil and environmental engineering as well as doctoral programmes and postgraduate course cycles. The originality of the ENAC education lies precisely in the formation of links between the disciplines in order to provide students with the tools required to "Projeter ensemble" in their professional and academic career.

ENAC focuses its research efforts in engineering science and architecture along four avenues:

- Analysis and modelling of environmental transfer processes, pollution control and prevention technologies.
- Environmental management as well as natural and man-made risk management.
- Urban and regional planning and design; management of the built environment.
- Design, maintenance and transformation of structures.

Each avenue will be developed by concretely integrating the general principles of sustainable development. New initiatives will also be launched in specific emerging fields such as energy management, risk management, theory and design in architecture, transportation and

mobility - including related social, cultural and political concerns.

The ENAC School pursues active collaborations with the other EPFL Schools and other academic institutions and Competence Centres in Switzerland and abroad. It keeps in close contact with professional circles in the fields of construction, land management and the environment and is involved in joint programmes in numerous developing countries.

(Reference: Strategic Planning 2008-2011, EPFL, 13.03.2006)

ENAC Audits

For ENAC, the year 2006 was decidedly marked by audits: the first, academic, focused on the School; the second, accreditation, targeted the masters programmes, in the framework of a process encompassing EPFL as a whole.

ENAC School Audit:

ENAC is the first School to have passed the test of an academic audit required by the EPFL Direction, after just four years in existence. This audit focused on teaching, research and technology transfer, in line with the new policy for autonomous operation of the Federal Institutes of Technology set forth in the "Performance Mandate" agreed with the ETH Board.

The School produced a complete self-assessment report focusing on the years 2002 to 2005. The audit was performed from 1 to 3 May 2006 by nine experts of international renown. These experts finalised their report on 12 June 2006. ENAC adopted a standpoint and put forward a programme to implement corrective measures. The ENAC standpoint was submitted to the EPFL Direction on 14 July 2006 and approved by the ETH Board on 13-14 December 2006.

The results were very positive, constructive and encouraging. The School's strategic vision was highly commended, which constitutes a tremendous motivational tool. The experts' report concludes that: "Finally, the Audit Committee is convinced that the objectives of the 2004-2007 Strategic Plan are about to be reached. The ENAC School's strategy for 2008-2011 seen from today's perspective can be fully endorsed. All past and future efforts will secure ENAC's position among the leading institutions of the world".

As a result of this evaluation, the following should be noted:

- The update and synthesis of management and academic output information constitute a valuable basis for strategic vision; even outside the framework of an audit, the amount of information collected in the process was positive in that it provides an in-depth review of our own activities.

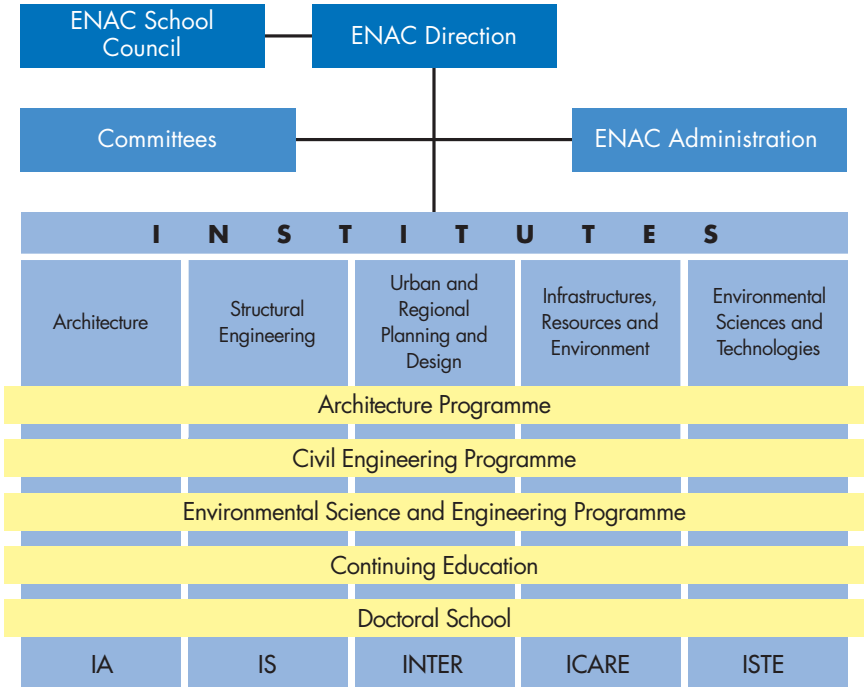
- In addition, the audit reinforced the School's corporate identity by enhancing collaborations and the visibility of ENAC by strengthening dialogue with the EPFL Direction.
- The scope of the audit, focused on the School, Institutes and Programmes, does not allow for an in-depth analysis of laboratories; however, this process has given the Schools the necessary tools to undertake such an evaluation in-house if needed.

In conclusion, the audit was performed in a very friendly and constructive manner, in full compliance with the standards for academic evaluation. Such a process provides a unique opportunity to embrace all our activities. The experts provided a fresh and welcoming point of view. Their ten main recommendations - focusing on governance, education and research - and proposals have allowed the School to establish a set of action points for improvements that will be gradually implemented in the coming months.

Accreditation of Masters

Organised and steered at the institutional level entirely by the Bachelors & Masters School and the Quality Assurance division of EPFL, the audit aimed at academic recognition of the EPFL and its Master's programmes in enlarged Europe, as encouraged by the Lisbon Convention. The audit took place in the presence of OAQ (Organe d'accréditation et d'assurance qualité des hautes écoles suisses – Centre of Accreditation and Quality Assurance of Swiss Universities) experts and of the CTI (Commission des titres d'ingénieurs – accreditation authority in France). ENAC was audited on 23-24 November 2006, on the basis of a self-assessment report. To establish this report, each Programme provided an analysis of required skills and competencies, a description of the Masters Degree course and an evaluation of the curriculum's strengths and weaknesses. The auditors recommended accreditation of ENAC Masters to their governing bodies.

ENAC Organisation



Institutes and Laboratories

IA	Institute of Architecture	Marchand Bruno
LIV	Informatics and Visualization Laboratory	Abou Jaoudé Georges
CRE	Chair of Representation and Expression	Cantàfora Arduino
LAMU	Urban Architecture and Mobility Laboratory	Devanthery-Lamunière Inès
ALICE	Design Studio on the Conception of Space	Dietz Dieter
LTH3	Theory and History of Architecture Laboratory 3	Gargiani Roberto
LAPA	Laboratory for the production of architecture	Gugger Harry
LDM2	Media and Design Laboratory (ENAC/IC)	Huang Jeffrey
LTH1	Theory and History of Architecture Laboratory 1	Lucan Jacques
LTH2	Theory and History of Architecture Laboratory 2	Marchand Bruno
AIC	Studio of Architecture and the City's institutions	Mestelan Patrick
LCC1	Construction and Conservation Laboratory 1	Morel Claude
LCC2	Construction and Conservation Laboratory 2	Ortelli Luca
LHAB	Urban Housing Laboratory	Steinmann Martin
IS	Structural Engineering Institute	Muttoni Aurelio
MCS	Structural Maintenance and Safety Laboratory	Brühwiler Eugen
ICOM	Steel Structures Laboratory	Hirt Manfred
CCLAB	Composite Construction Laboratory	Keller Thomas
IS-BETON	Concrete Construction Laboratory	Muttoni Aurelio
IMAC	Applied Computing and Mechanics Laboratory	Smith Ian
IBOIS	Chair of Timber Construction	Weinand Yves
LSC	Structural and Continuum Mechanics Laboratory	Zimmermann Thomas a.i
INTER	Institute of Urban and Regional Planning & Design	Lévy Jacques
UTA	Urban, Rural and Architectural Planning Laboratory	Berger Patrick
TRANSP-OR	Transportation and Mobility Laboratory	Bierlaire Michel
ACM	Archives of Modern Building	Frey Pierre
LASIG	Geographic Information Systems Laboratory	Golay François
LASUR	Urban Sociology Laboratory	Kaufmann Vincent
LAC	Chôros Laboratory	Lévy Jacques
LATER	Laboratory of Architectural & Territorial Design	Mangeat Vincent
TOPO	Geodetic Engineering Laboratory	Merminod Bertrand
LITEP	Intermodality, Transport and Planning Laboratory	Rivier Robert
REME	Economics and Environmental Management Laboratory	Thalmann Philippe
CEAT	Urban and Regional Planning Community	Tranda-Pittion Michèle

ICARE	Institute of Infrastructures, Resources and Environment	Scartezzini Jean-Louis
LHE	Environmental Hydraulics Laboratory	Ancey Christophe
LAVOC	Traffic Facilities Laboratory	Dumont André-Gilles
LASEN	Energy Systems Laboratory	Gnansounou Edgard a.i.
GEOLEP	Engineering and Environmental Geology Laboratory	Parriaux Aurèle
LESO-PB	Solar Energy and Building Physics Laboratory	Scartezzini Jean-Louis
LCH	Hydraulic Constructions Laboratory	Schleiss Anton
LMS	Soil Mechanics Laboratory	Vulliet Laurent
LMR	Rock Mechanics Laboratory	Zhao Jian
ISTE	Environmental Sciences and Technologies Institute	Parlange Marc
ECOL	Ecological Engineering Laboratory	Barry David Andrew
EML	Environmental Microbiology Laboratory	Bernier-Latmani Rizlan
LTE	Environmental Remote Sensing Laboratory	Berne Alexis
LMCA	Atmospheric Chemistry Modelling Laboratory	Bey Isabelle
ECOS	Ecological Systems Laboratory	Buttler Alexandre
LBE	Laboratory for Environmental Biotechnology	Holliger Christof
HYDRAM	Hydrology and Land Improvement Laboratory	Mermoud André a.i.
LASEP	Laboratory of Soil and Environmental Physics	Or Dani
EFLUM	Environmental Fluid Mechanics Laboratory	Parlange Marc
LPAS	Air and Soil Pollution Laboratory	van den Bergh Hubert
EH-ENAC	Hosted units	
WVSE-ENAC	French-Swiss branch of the Swiss Federal Institute for Forest, Snow and Landscape Research	Buttler Alexandre
CDT-ENAC	Chair of Law (CDT)	Romy Isabelle
IER-AR	French-Swiss branch of the Institute for Agricultural Economics	Olivier Roque

Laboratories established in 2006

Laboratories closed in 2006



ENAC Books

Analyse des structures et milieux continus

Mécanique des solides. I TGC volume 3

François Frey. Editions PPUR, 2006

The mechanics of solids is accorded considerable significance these days since its equations are effectively solved thanks to powerful numerical methods which enable engineers to resolve, as it were, all the problems of the mechanics of solids. In particular, this volume deals with the engineers' specifically two- and three-dimensional problems, thus enriching the study of the notions treated in the first two volumes, which dealt, respectively, with applied statics and the mechanics of structures.



Architecture du corps

Arduino Cantàfora. Editions PPUR 2006

When architecture of the body is treated in a school of architecture, reference to a coherent logic of "the art of building" arises as an obvious fact: the creation of the place occupied by the human machine in the course of evolution requires construction work that is logical and conceptually effective rather than unimaginatively imitative. The result speaks for itself – a macabre dance at once comic and tragic which refers us to the eternal question of representation.



Architecture en France (1940-2000)

Histoire et théorie

Jacques Lucan. Editions Spacetime, 2006

Korean edition of the book published in 2001 by Moniteur Group, Editions du Moniteur, Paris.



Atlas des mutations spatiales de la Suisse

Martin Schuler, Pierre Dessemondet, Christophe Jemelin, Alain Jarne, Natacha Pasche, Werner Haug. Editions Neue Zürcher Zeitung, 2006

Thanks to visual elements of a completely new conception, this atlas of spatial change in Switzerland illustrates the processes of metropolisation and of people's spatial mobility, as well as the behaviour of a population that remains strongly rooted in its region. The atlas throws light and comments on the territorial dynamism of the last few decades with the help of the results of official statistics.



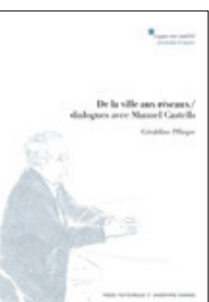


Construction métallique

Notions fondamentales et méthodes de dimensionnement. TGC volume 10

Manfred Hirt, Rolf Bez, Alain Nussbaumer. Editions PPUR, 2006

This first volume devoted to the field of metal construction deals with the conception and dimensioning of the main elements, the assemblies of load-bearing steel structures. The assemblies in their capacity as indispensable connection elements, the phenomena of instability and the phenomenon of metal fatigue are all treated here. This work has been adapted to the new standards for load-bearing structures, SIA 260-264, which adopt the principles of the Eurocodes.



De la ville aux réseaux

dialogues avec Manuel Castells

Géraldine Pflieger. Editions PPUR, 2006

A life marked by resistance to the Franco regime, by May 68, by the Chile of Allende; a scientific career that escaped from Marxism to join the avant-garde of American urban studies: Manuel Castells returns to the elements that characterised his life as a researcher. He paints an unindulgent picture of the groves of academe and describes his methodology in detail. The dialogue, conducted by Géraldine Pflieger, enables us to appraise the approach of a changing society increasingly confronted with contradictions.



Dynamique des avalanches

Christophe Ancey. Editions PPUR, 2006

This is the first work in the French language that is exclusively devoted to the quantitative study of snow avalanches. It presents their phenomenology, as well as the calculation bases suitable for their characterisation and modelling (the hydrology of snowfall, blocking and simulation techniques), cartography, databases, current zoning regulations and risk prevention. The book focuses on the necessary complementarity between a naturalist (qualitative) approach and a scientific (quantitative) vision of nivology.



Escaliers

Décors et architecture des cages d'escalier d'immeubles d'habitation de Suisse Romande, 1890-1915

Fabienne Hoffmann, Dave Lüthi, Nadja Maillard, Catherine Reymond Bui, Catherine Schmutz Nicod, Rémy Gindroz. Editions PPUR 2006

From 1850 to 1914, the decorative arts flourished throughout Europe, notably for the ornamentation of both private and public buildings. Staircases – which are prime examples of spatial status symbols – were a preferred theme for architects. In the French-speaking part of Switzerland, evidence of this golden age of applied art can be found in blocks of rented flats, which constitute a rich heritage but very often remain unrecognised.

Galetti & Matter Collection of places

Bruno Marchand & Pierre-Alain Croset. Editions Birkhäuser, 2006

English edition of the book published by In Folio Editions in the Archigraphy Lémaniques Collection. Supervised by Bruno Marchand, this book covers simultaneously the historical and theoretical fields of architecture and aims to publish contemporary architectural work in order to encourage critical thinking about the evolution of practical architecture in Switzerland.

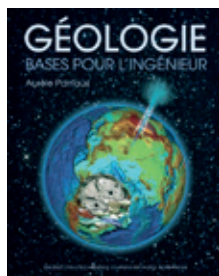


Géologie

Bases pour l'ingénieur

Aurèle Parriaux. Editions PPUR, 2006

Earth, whether up above or down below, is the theatre of multiple phenomena which shape our environment and drive its evolution. This book on geology presents these phenomena in their diversities of scale and time. It makes us understand how geological conditions influence an engineer's activities by studying the nature of the main unconsolidated rock formations as well as their properties, and makes us aware of the wealth of underground resources and the ways of managing them intelligently.



Habiter la menace

Inès Lamunière. Editions PPUR, 2006

Our environment can now be perceived as a source of danger, both at a symbolical and at a literal level. Architectural reflections will therefore have to deal with such aspects. Could not protective buildings provide space for other programmes? Could a dike not be at once an avalanche barrier and a hotel? Could something hostile not be turned into something hospitable? Texts by a philosopher and a geographer go hand in hand with texts by four architects, whose projects are expressive of the pleasure of reviving an architectural thought that would curb the threat.



heidi & peter pour la vie

wenger architectes

Pierre Frey. Editions PPUR, 2006

Heidi and Peter Wenger set up their studio in Brig in 1952 and based their research as much on the practice of building sites and construction work as on the quality of created space. They have created original project development methods and are the authors of an in-depth reflection on the exchanges between Chinese architecture and European architecture. In particular, this monograph focuses on experimental buildings created for their own use, such as their house-cum-workshop in Brig and their chalet, Trigon (1955), both perfect constructive illustrations of their work as a whole.



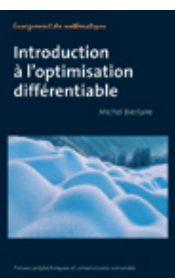


Intelligent Computing in Engineering and Architecture

Ian Smith (Ed.). Editions Springer

13th EG-ICE Workshop 2006, Ascona, Switzerland, June 25-30, 2006, Revised Selected Papers. Series: Lecture Notes in Computer Science, Vol. 4200. Sublibrary: Lecture Notes in Artificial Intelligence.

The 59 revised full papers cover all issues of advanced informatics - in terms of current aspects of engineering - including a range of techniques such as artificial intelligence, evolutionary and adaptive computing, case based reasoning, networking and computer supported co-operative working, concurrent engineering, human computer interface issues, agents, constraint based reasoning, VR, and workflow design.



Introduction à l'optimisation différentiable

Michel Bierlaire. Editions PPUR 2006

If a system can be described formally, what is more natural than trying to improve it? The author of this book leads readers with patience (and humour) towards the discovery of algorithmic methods which enable them to tackle this question. The characteristics of this work are a progressive and detailed approach, the extent of the field that is covered, the quality of documentation, and a constant paedagogical care to choose pertinent illustrations.



Jack Cornaz

un architecte à contre-jour

Nadja Maillard. Editions PPUR, 2006

This work traces the atypical career of the architect Jack Cornaz, a singular figure of the architecture of the French-speaking part of Switzerland during the first half of the 20th century, as well as the context into which this architecture has to be placed.

Depending on whether you criticise or praise him, he was either backward-looking, dissident or marginal, but his production, which is varied in quantitative terms yet uniform in typological and programmatic terms, is still sufficiently consistent to be apprehended in the variety of its expressions: the types of clients he worked for, the influences on his practical work, the totality of old architecture, and problematical references to tradition.



L'arte delle strutture.

Introduzione al funzionamento delle strutture in architettura

Aurelio Muttoni. Editions Mendrisio Academy Press, 2006

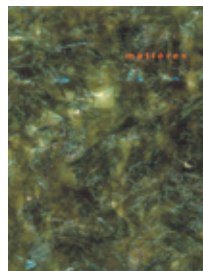
Dedicated to architectural structures and intended to facilitate discussion between the two professional fields, this book is the new edition in Italian of the book published in 2004 by PPUR.

Matières 8

Croissance

Jacques Lucan, Bruno Marchand, Martin Steinmann. Editions PPUR, 2006

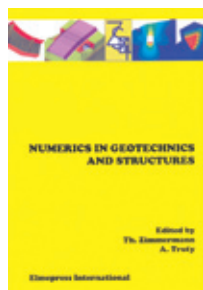
Has there ever been an architect who in the conception of a project did not dream of a process that started off from a set of rules from which the consequences would simply just follow one another? Such a way of looking at a project is reminiscent of growth processes in natural organisms. And modern architecture is not short of projects that have recourse to organic analogies. We advance the hypothesis that such a way of envisaging a project has a new topicality, in particular owing to the possibilities provided by the resources of information technology



Numerics in Geotechnics and Structures

Thomas Zimmermann, Andrzej Truty (Eds.). Editions Elsevier International, 2006

This book regroups a selection of contributions presented at the yearly meeting on "Numerics in Geotechnics", on August 2005, at the Swiss Federal Institute of Technology in Lausanne. The meeting has been taken place regularly since years as ZSOIL user meeting and evolved progressively with contributions by users, developers, and others. ZSOIL is a continuously upgraded software based on the finite-element method, offering a unified approach to numerical simulation of soil and rock mechanics, underground structures, excavations, soil-structure interaction and including flow, thermal effects, large displacements, dynamics and pushover of structures.



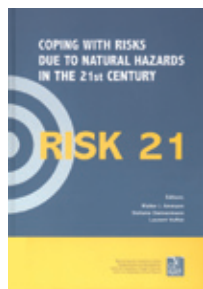
Risk 21

Coping with Risks due to Natural Hazards in the 21st Century

Walter J. Ammann, Stefanie Dannenmann, Laurent Vulliet.

Editions Taylor & Francis, 2006

Over the last decades, there has been an increase in the number of natural hazards which have culminated in catastrophic consequences, with severe repercussions for the affected people and their livelihoods. In response to escalation, the Swiss Natural Hazards Competence Centre (CENAT) organised a workshop entitled "RISK21". This was held at the Centro Stefano Franscini, Monte Verità, Ascona, from November 28th to December 3rd, 2004. The workshop focused on different aspects of risk management, highlighted current drawbacks, and discussed possible ways of reducing disaster risk.



ENAC Exhibitions

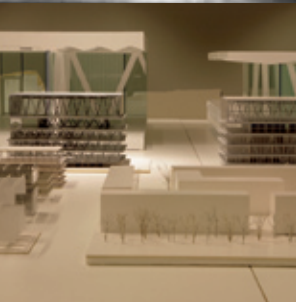
With the financial support from the companies Eternit and Holcim and a personal contribution from Professor Martin Steinmann.



Aldo Favini, Architecture and Engineering at Work

Exhibition produced by Politecnico di Milano - 7.12.2005 - 20.01.2006

Aldo Favini, born in 1916, is a major figure of contemporary Italian engineering. With Silvio Zorzi and Riccardo Morandi, he introduced the culture and practice of prestressed concrete, thus making a crucial contribution to the development of prefabrication in Italy, a country where in post-war years, the urgency of reconstruction clashed with a lack of qualified manpower, massive migration towards the north and an increase in labour costs. As a structural engineer, he devoted himself to the overall construction process and paid attention not only to the rigour of calculation but also to the development of technologies and building site techniques. He united the search for novelty with elegance of form, the perfection of construction detail and fastness of assembly.



The scales of reality - Christian Kerez's architecture

Exhibition produced by the EPFL Architecture Programme - 15.03 - 2.05.2006

We make a rough distinction between two types of architectural models. One of them serves to represent a building that only exists on paper (or does not exist any longer) on a smaller scale. However, models also have a purpose other than representing a completed building. They are tools to represent an idea of the building and its form, structures and rooms. No young architect is likely to have made use of this tool with so many consequences as Christian Kerez. This was the reason for inviting the Zurich architect to present his work in the series of exhibitions at the EPFL's School of Architecture, which is intended to show various ways of «making architecture».



La ville blanche de Tel Aviv

Exhibition arranged by the Tel-Aviv Town Council - 23.05 - 23.06.2006

Stretching between the dunes, along the Mediterranean coast, the «White City» presents all aspects of Modern Movement architecture. Israeli architects who went to European avant-garde schools and trained in the offices of renowned architects, imported the knowledge acquired abroad to generate new forms and give birth to a diversified architectonic language. Adapting European influences to the climatic conditions, the culture and traditions in local construction produced a rich vernacular vocabulary.



Renate Buser. Espaces et vides. Reconstructed

Exhibition produced by the EPFL Architecture Programme - 18.10 - 8.11.2006

Five years ago, the artist Renate Buser realised an installation entitled *Espaces et vides* in La Chaux-de-Fonds, using photographs of those 19th century residential buildings that are called *massifs* up there. When taking the photographs, the artist had chosen angles that made the building appear in strong perspectives, and she had worked on the negatives to remove the roofs and pavements. In this manner, the façades resemble decorative elements without any depth, thus reducing urban spaces to empty spaces. When entering the hall, spectators were struck by the *trompe-l'oeil* effect of the images but at the same time apprehended the strange effect of how they had been placed – like in a dream.

heidi & peter pour la vie : wenger architectes

*Exhibition produced by the Archives of Modern Building,
EPFL - 16.11 - 22.12.2006*

The Archives of Modern Building exhibition in autumn 2006 presented a retrospective of the work of Heidi and Peter Wenger, who have lived in Brig since 1952. The themes dealt with focus on the architectural, existential and technical choices made by this couple, together for life and for architecture. The original documents exhibited logically highlight the experimental constructions they built for themselves, i.e. their house/workshop in Brig and their "Trigon" mountain cabin (1955). For these projects – as with most orders placed with the couple – construction considerations and those relating to the configuration of space are closely linked in what became a total experiment.

Prix Architecture Eternit 2006. La maison de l'architecture

Exhibition produced by Eternit (Schweiz) - 6 - 21.12.2006

For 19 years, Eternit has sponsored an architecture award (the "prix d'architecture") given every two years in the framework of a competition for students in the four top schools of architecture in Switzerland. Theme 2006: the "House of Architecture", a place for free, associative and alternative study available for students.

Histoire des développements techniques des stades de Coupe du Monde de football : 1930 - 2006

*Exhibition produced by ISICOM / Prof. M. Hirt + Afro Sport Promotion,
14.6 - 10.07.2006*

Der Blick der Moderne : Architekturfotografien der Sammlung Alberto Sartoris im Dialog mit Objekten des Vitra Design Museums

*Hofmobiliendepot – Möbel Museum Wien, AT - 7.12.2005 - 5.3.2006
Lucca, IT - 28.11.2006 - 18.2.2007*

The scales of reality - Christian Kerez's architecture

Architekturmuseum, Basel, CH - 9 - 30.6.2006

Des Alpes à la mer : l'architecture d'André Gaillard

Geneva, CH - 16.06 - 15.07.2006



ENAC Exhibitions Extra Muros



ENAC Awards and Distinctions

Teaching and Research

Manfred Hirt

IS - ICOM

received the 2006 Charles Massonnet award from the European Convention for Constructional Steelwork (ECCS). The Award recognises a prominent scientist/academic, whose work is considered an outstanding contribution to the advancement of scientific and technical support to constructional steelwork.

François Frey

IS - LSC

received the "Médaille du Roi Albert I" from the Belgian National Research Foundation in Brussels.

He further received the "Prix du meilleur enseignant ENAC 2006", from the EPFL students association AGEPLY.

Thomas Keller

IS - CCLAB

received the Mirko Ros Silver Medal, Best Paper Award at the ACUN-5 International Composite Conferences, Sydney, Australia, 11-14 July 2006.

Michel Thomann

IS - ICOM

who earned his PhD at ICOM in 2005, was awarded one of the three top prizes at the First Symposium for Young Engineers in Civil Engineering, organized by the Swiss Group of IABSE on June 22, 2006. His contribution "Connections by adherence for steel-concrete composite bridges" represented his thesis work and competed with 100 other entries at the Symposium.

Luis Borges

PhD Candidate at IS - ICOM

received the award for best poster at the EPFL Research Day 2006 organized by the doctoral school.

P. Manso

Erik Bollaert

Anton Schleiss

ICARE - LCH

J.C. Stevens Awards 2006

for the discussion on «Effect of Jet Air Content on Plunge Pool Scour» in Journal of Hydraulic Engineering, ASCE, November 2004.

Erik Bollaert

Anton Schleiss

ICARE - LCH

Karl Emil Hilgard Hydraulic Prize 2006

for the article «Physically Based Model for Evaluation of Rock Scour due to High-Velocity Jet Impact» in Journal of Hydraulic Engineering, ASCE, March 2005.

Tobias Meile

Sameh Kantoush

ICARE - LCH

5th ISUD - «Asahi Ryunetsu Student Paper Award».

Philippe Heller

ICARE - LCH

Best Poster Award - Research Day 2006 awarded by the Doctoral Programme in Environnement at EPFL.

Stéphane Joost

INTER-LASIG

The William L. Garrison Award

Best Dissertation in Computational Geography

Students

Mentions SIA vaudoise

Stéphanie Dreyfuss, SAR
Noémie Goldmann, SAR
Laurent Eller, SAR
Luc Larnaudie, SAR
Georgine Roch, SAR

Prix Banque Cantonale Vaudoise

Anna-Lisa Beck, SAR
Silvia Berner, SAR
Catherine Cotting, SAR
Maëlle Dubey, SAR
Martin Latham, SAR
Olivier Meystre, SAR
Georgine Roch, SAR
Dany Roukoz, SAR
Sophie Shiraishi, SAR
Charlotte Truwant, SAR

Prix Architecture et Préfabrication

Raphaël Dessimoz, SAR
Raphaël Hilan, SAR

Prix de l'Ass. des diplômés A3-EPFL

Olivier Meystre, SAR

Prix Orlando Lauti

Stefano Zerbi, SAR

Prix SIA vaudoise

Audran Valloggia, SAR

Prix UPIAV - Union patronale des ingénieurs et architectes vaudois

Annina Inäbnit, SAR
Joël Meylan, SAR
Guillaume Vallotton, SAR

Prix STS

Stefano Zerbi, SAR
Marion Bourgeois, SSIE
Anne-Lise Meyenhofer, SSIE
Caroline Schmit, SSIE

Prix Charles Maurhofer

Janine Koch, SAR
Audran Valloggia, SAR

Prix de la Commune d'Ecublens

Monica Knechtle, SAR

Prix BG Ingénieurs-conseils : construction et développement durable

Aleksis Dind, SAR
Bastian Ehrbar, SAR
Stefano Zerbi, SAR

Prix ASEP

Damien Dreier, SGC

Prix Henri B. de Cernville

Suzanne Chalindar, SGC
Claire Sauthier, SGC

Prix Bureau d'ingénieurs Maggia

Nicolas Crettenand, SGC
Jérôme Filliez, SGC

Prix Stucky

Matteo Federspiel, SGC

Prix UPIAV

Daniel Buehler, SGC

Prix BG ingénieurs-conseils: Systèmes et développement durable

Anna Plancherel, SSIE

Prix de l'Association des Ingénieurs géomètres de Suisse Occidentale

Yann Mattenberg, SSIE

Prix de l'Association suisse des Mensurations et Améliorations foncières

Alex Hoffmann, SSIE

Prix Robert Zanelli

Matthias Ruetschi, SSIE

ENAC Professors

Appointments 2006



Alexis Berne

Tenure Track Assistant Professor (started in October 2006)

In his research, Alexis Berne will develop ground-based and space-based remote radar sensing. He also intends to explore the potential of remote microwave sensing for analyzing exchanges between the atmosphere and the soil, and to expand the application of remote sensing methods to related areas, such as the physics of clouds, quantification of soil moisture levels and evaporation, and precipitation-related risks.

Alexis Berne is a French citizen born in 1975. In 1998, he earned his engineering degree at the National Polytechnic Institute of Grenoble. In 2002 he completed his doctorate at Joseph Fourier University. From 2003 to 2005, a Marie Curie scholarship supported his postdoctoral study at Wageningen University as well as in the Earth and Planetary Science department at the University of California (Berkeley). Since March 2006 he has been an associate researcher at Joseph Fourier University's Laboratory for the Study of Transfers in Hydrology and the Environment.



Michel Bierlaire

Associate Professor (started in July 2006)

Michel Bierlaire's qualities as a researcher are widely recognised in the fields of the modelling of planning and of intelligent transport systems. He is the author of the Biogene software, which has revolutionised the sector of advanced discrete choice models; moreover, he has successfully launched a post-graduate course in cooperation with the Nobel Laureate in Economics, Daniel McFadden. Michel Bierlaire has maintained close links with the practical working world by drawing up expert opinions and acting as a consultant.

Michel Bierlaire, born in 1967 and of Belgian nationality, was awarded his doctor's degree by the Université Notre Dame de la Paix in Namur (Belgium). He then joined MIT where, in particular, he developed the DynaMIT software for the management of traffic dynamics. This tool, which is widely used all over the world, is considered to be the most successful and innovative of its kind. Since 1998, Michel Bierlaire has been working at the EPFL as Senior Scientist. He has been appointed professor to reinforce the field of Transport engineering at ENAC School.



Dieter Dietz

Associate Professor (started in October 2006)

Dieter Dietz regards architecture as a field of cultural analysis at the interface between the theory and practice of a project. He is familiar with the multiple aspects of the contemporary scene, but also with design, fashion and art. His research work deals with the concept of "processual knowledge in architectural training". He has won several competitions in Japan, Italy, France and Finland. Dieter Dietz was born in Zurich in 1964. He obtained a diploma in architecture from the ETHZ and also attended the Cooper Union School of Architecture

in New York. During his studies, he worked as an intern with architects Diane Agrest & Mario Gandelsonas and later with Diane Lewis in New York. He then joined the Basel architects Herzog & de Meuron. In 1997, he opened his own office, UNDEND, in Zurich.

His design studio at EPFL will provide architectural components, studies in virtual environments, as well as experiments in the perception of dimensions and spatial geometries. In particular, Dieter Dietz will offer courses on the theory of the studio work that are based on a narrative approach by way of a cognitive and emotional process.



Franz Graf

Associate Professor (starting in September 2007)

Franz Graf is considered by his peers as the leading European specialist in 20th-century construction techniques. His work is highly multidisciplinary, combining architectural design with historical considerations and a rigorous approach to materials technology. He has participated in many research projects ranging from the preservation of buildings to the development of products using curved surfaces. In the context of his work with French and Swiss firms, Franz Graf has won many top prizes in competitive projects.

Born in 1958, Franz Graf is a Swiss citizen. He earned his degree in architecture at the EPFL in 1983. From 1989 to 1999, he carried out many projects as an independent architect – in France then in Switzerland for the company he established with Julien Menoud. Simultaneously, he did a considerable amount of teaching at Swiss and French Universities. Franz Graf's teaching and research at the EPFL will focus on contemporary and modern construction systems as well as their adaptation to new uses and constraints.



Tamar Kohn

Tenure Track Assistant Professor (starting in January 2007)

Tamar Kohn's major contributions concern the issue of the elimination and degradation of chemical and biological pollutants, as well as pathogenic agents in aquatic systems. She will contribute towards the considerable strategic development of environmental engineering at the EPFL. Her work has demonstrated the importance of interface processes in the degradation of organic halogen solvents by means of ferrous granules. These results have had direct implications from the point of view of the effectiveness of permeable reactive

barrier mechanisms as tools for the remediation of underground water. Tamar Kohn has recently identified a chemical substance that plays a key role in the neutralisation of a virus in an aquatic environment.

Tamar Kohn, who was born in 1973 and is of Swiss nationality, obtained her diploma in environmental sciences from the ETHZ in 1999 and then gained her doctor's degree at the John Hopkins University of Baltimore. Alongside her education, she worked for projects in the Netherlands, at the ETHZ and later in Baltimore. At the EPFL, Tamar Kohn intends particularly to develop new strategies for an optimisation of the performance and a reduction of the costs of installations for the treatment of drinking water and wastewater so that these are affordable for developing countries.



Valérie November

SNF Professorship (started in October 2006)

In the area of research, Valérie November is specialised in the interdisciplinary approach of management and risk prevention with interface between social sciences, technology, land planning and environment.

At the EPFL, Valérie November will work on projects dealing with the prevention of risk and crisis situations, specifically in dealing with public health information or concerning the understanding of complex spatiality of risks.

Of Swiss origin born in 1968, Valérie November received a master's degree in geography at the University Laval in Quebec, then a doctoral degree in economic and social sciences at the University of Geneva. She then did several scientific studies abroad, at the "Ecole des Mines" in Paris, at the University of East Anglia and at the University of Oxford. Valérie November also took on several teaching assignments in Fribourg, Geneva and Lisbon to name a few.



Astrid Staufer and Thomas Hasler

Associate Professors (starting in March 2007)

Astrid Staufer and Thomas Hasler are standouts among young professionals of their generation working in architectural research. Their firm is well known for many projects, in particular public buildings. Since 1994, the Staufer-Hasler firm has collected many top prizes.

The teaching and research approach of Astrid Staufer and Thomas Hasler hinges on a combination of design and discourse to facilitate a better understanding of projects and foster their contextual integration. It uses a synchronous design process that handles the various phases in parallel. Astrid Staufer and Thomas Hasler will put the spotlight on the processes of architectural creation, the ability to express space and form in architecture, and the explicit categorisation of project constraints using various modes of expression.

Born in Lausanne in 1963, Astrid Staufer studied architecture at EPFZ, where she earned her diploma in 1989. After a stint as a freelance architect in 1993, she started working with Thomas Hasler in 1994 prior to embarking on

a teaching career at the EPFZ in 1995. Since 2004, she has run the Centre for Constructive Design at the Institute of Architecture and Building Technology in Winterthur.

Thomas Hasler is a Swiss citizen born in 1957. He earned his diploma in architecture at the EPFZ in 1989 while working at Bruno Reichlin's architectural firm in Geneva. In 1997, he completed his doctorate in architecture and was a guest professor at the University of Geneva's Institute of Architecture from 1999 to 2000, then at the EPFZ from 2002 to 2004.



ENAC Professors

Promotions 2006



Lyesse Laloui

Adjunct Professor, IMS (promoted in December 2006)

The research carried out by Lyesse Laloui lies at the forefront of knowledge in the field of environmental geomechanics, a topic with significant socioeconomic repercussions. Lyesse Laloui is internationally renowned for his original work on modelling soil behaviour using thermo-hydro-mechanical coupling of multiphase geomaterials. In particular, he established two new laws of thermo-viscoplastic and hydro-mechanical behaviour for partially saturated porous zones.

Born in 1963, Lyesse Laloui is a French citizen. He earned his degree in civil engineering at the Ecole nationale des travaux publics in Algiers in 1987, then matriculated at the Ecole Centrale in Paris where, in 1989, he was granted an advanced graduate degree in soil and structural mechanics. In 1993, he earned his doctorate in mechanics from the same institution, "summa cum laude". Lyesse Laloui came to the EPFL in 1994 as a scientist at the Soil Mechanics Laboratory. He has been lecturing there on a regular basis since 1996 and has led the Laboratory's Environmental Geomechanics Group since 2001. Lyesse Laloui is very much involved in the life of his institution and of the scientific community at large. He chaired the EPFL's General Assembly and, from 2000 to 2002, served as its representative on the Board of the Swiss Federal Institutes of Technology.

ENAC Professors

Departures 2006

Several colleagues left us in 2006. The ENAC School thanks them all for the outstanding quality of their work at EPFL.



François Frey

Full Professor, LSC

Born in Bienne, François Frey received his diploma in civil engineering at the EPUL in 1965. In 1978, he obtained his doctorate in Applied Sciences at the University of Liège, with the Highest Distinction. He was awarded the "Prix International" G. Magnel, Brussels, in 1981, for his research work and its practical value. Founder of numerical techniques for non-linear structures analysis at the University of Liège, he wrote many computer codes for finite elements calculation, the last of which: FINELG, resulting from his thesis, continues to be developed in Liège, in collaboration with Lausanne. This code has contributed to the calculation and the design of a large number of projects, from the viaduct of Vilvoorde (Brussels, 1976 – first practical application) to the viaduct of Millau (France, 2004).

In October 1979, François Frey was appointed professor at the EPFL, in the Civil Engineering Department, the Statics and Structures Institute (ISS), Chair of Statics and Material Strength (IREM; renamed LSC, Structural and Continuum Mechanics Laboratory in 1990). A considerable amount of work was done to develop this teaching, research and services. François Frey became heavily involved in the activities of the EPFL, among other things, as head of the Civil Engineering Department, member and president of the teaching committee, and president of the Evaluation Committee for Academic Promotion. He was also consultant for the Canadian FNRS and expert for the Belgian FNRS. Member of several scientific societies, he has published 60 articles and six books, five of which are in "Traité de Génie Civil". From his influence in the field of research, François Frey has left a strong impression in the international scientific world, and moreover he was also known as an excellent teacher and scholar.



Vincent Mangeat

Full Professor, LATeR

After his studies in Geneva, Vincent Mangeat obtained his diploma of architecture in 1969 at the EPFL. In Paris, he took courses by Jean Prouvé at the Ecole des Arts et Metiers. As a part-time lecturer in the Department of Architecture at the EPFL, he was appointed assistant professor in 1985 at the EPFZ, where he taught until he began working at the EPFL in 1990 as a full professor of architectural studio and theory. Since 1997, he took on full responsibility for first year studies.

Vincent Mangeat brings specific attention to masterful critique, the fine line where the relationship between "thinking" and "doing" is established and appreciated, the project and line of reasoning. In his thinking in the field and the object of architectural discipline, he takes it to heart to put architecture on a broad scale. Everything that concerns the space necessary for living concerns architecture. Aside from his role as head of the ex-Department of architecture, since 2002 he has largely contributed to the thinking which gave rise to the creation of the ENAC School. He could be considered as one of the fathers of the ENAC slogan, "Projeter ensemble". Since its beginning (four years now), he has been a member of the direction of this School.

As a practitioner of architecture, he is the author of numerous projects and works for private, public, and institutional programmes. His work was the subject of several publications and was widely exhibited in Switzerland and abroad. From his influence in the areas of project research, Vincent Mangeat leaves a strong impression in the world of architecture. The profoundness of his thinking, as well as his theoretical and practical competencies have given rise to excellent teaching that has had a strong effect on his colleagues, collaborators and students.



Paul Péringer

Full Professor, LBE

A French national of Hungarian origine, Paul Péringer obtained his diploma in engineering in 1970 at the ENSBANA (Ecole Nationale Supérieure de Biologie Appliquée à la Nutrition et à l'Alimentation) in Dijon. From 1970 to 1979, he was responsible for research, and then worked as associate director for research at the National Institute of Agricultural Research (INRA) in Dijon. Appointed lecturer in biological engineering at the EPFL in 1979, he created the Biological Engineering Laboratory (actually LBE) in 1980. He became a full professor in 1984 and department head in rural engineering for two years at the end of the 80's.

His research focused on biotechnical applications, essentially in the environmental sector. In the middle of the 80's, along with his colleagues in the Institute of Chemical Engineering, he was the instigator of the creation of the Biotechnology Center at the EPFL; it was also at his initiative that the first cellular cultures (animal and vegetal) in bioreactor were developed at the EPFL. Paul Péringer also contributed to the development of industrial procedures: anaerobic digestion of cheese whey (know-how transferred to Alpha Nidau, Nidau, 1987); purification/filtering of sulphonated effluent by immobilized biomasse on Mellapack supports (know-how transferred to Sulzer SA, 1994); biomethanisation of the effluent from a production factory of colza diester (know-how transferred to Ecoénergie, Etoy, 2001). He is the author or co-author of more than 180 publications and scientific works and has registered several patents. In 1996, he received the "premier prix d'excellence" from the Swiss Technology "Standort" for his work.

Paul Péringer was also heavily involved in teaching, at the level of training for engineers, while initiating, at the heart of the new master study plan, a minor in environmental (bio)technology, as well as postgraduate education in environmental engineering.



Martin Steinmann

Full Professor, LHAB

The entire realm of his activities has made Martin Steinman a real "master thinker", the personification of a critic who anticipates questions rather than simply speaking, a theoretician who cuts his own path, a speaker who communicates the strengths of architecture, a man of culture who has always been ready to defend the honor of the architecture profession as well as the cultural depth of the ideas which make it what it is.

After obtaining his diploma at the EPFZ in 1967, he began working at the celebrated "Institute für Geschichte und Theorie der Architektur" (gta) at the EPFZ, where he contributed to the creation of "Archives des Congrès Internationaux d'Architecture Moderne" (CIAM). This experience, among the most remarkable in 20th century architecture, inspired him to write a thesis dedicated to this subject. He worked at the gta for ten years where he undertook intense international didactic activity before being appointed professor of architecture and of theory of architecture at the EPFL in 1987.

His research has always given substance to his teaching in an outstanding symbiotic process: housing issues, contemporary architecture theories, and most recently, theories of perception – embody the underlying strengths of his teaching.

For almost 20 years, EPFL students in architecture have taken full advantage of the presence of this extraordinary professor, whose commitment and passion have marked all those who have had the privilege of having him as a teacher.



Institute of Architecture (IA)

Our mission statement

Organised into four areas of research – urban architecture, theory and history, construction and conservation, and representation and computer-based visualization – the **IA** is involved in a broad range of interdisciplinary, innovative research, the results of which come together within the School of Architecture and in the doctoral programme “Architecture, city, history”.

Events in 2006

The past year was one of change, marked by several notable events: in the first place Professor Bruno Marchand, Director of LTH2, was appointed Director of the IA; secondly, two new professors joined the IA team - Professor Jeffrey Huang, Director of the Media and Design Laboratory and Professor Dieter Dietz, Director of ALICE.

Prof. Jeffrey Huang's research explores the vision of bringing the physical and virtual environments together. He investigates the possibility of combining physical architecture and information structures to support integrated offline and online processes for everyday activities, such as learning, working, governing and healing. His current projects focus on the integration of physical computing (sensors, actuators, RFID, LEDs, etc.) into architecture and cities, the design of digital space, such as 3D information game and navigation interfaces, and more generally, the understanding of design thinking.

Prof. Dieter Dietz regards architecture as a field of cultural analysis at the interface between the theory and practice of a project. His research work will deal with the concept of “processual knowledge in architectural training”. Dieter Dietz is also planning to cooperate with other scientists who work in fields that are closely connected with architecture in order to share not only the conceptual methods and approaches but also investigation and representation tools.

Our main research activities

As regards research in progress, we are continuing to work on two PNR 54 projects: “Densification of disused railway areas”, **LAMU** Laboratory - Prof. Lamunière, in cooperation with the **LASUR** Laboratory - Prof. Kaufmann, and “Urban sustainable housing”: **LASUR** Laboratory - Prof. Kaufmann, in cooperation with the **LCC2** Laboratory - Prof. Ortelli. Finally, with a view to developing sources of private funding we have produced a booklet entitled “Subsidizing research and publications: an inventory”.



More >> <http://ia.epfl.ch>

*Professor Bruno Marchand
Director, IA Institute*



Structural Engineering Institute (IS)

The Structural Engineering Institute (IS) spans all aspects of structural engineering, covering all conventional and advanced construction materials (steel, concrete, wood, glass, high performance concrete and steel, fibre reinforced polymers, etc.), and including conceptual design, analytical methods, measurement techniques, computer-aided engineering, construction, evaluation, maintenance and rehabilitation of existing structures.

In recent years, IS has taken an increasingly important role in creating links between civil engineers and architects within the "Projeter Ensemble" effort of the School. Its members are actively involved in teaching and project activities at the interface between the two professions.

- The Structures I & II course (A. Muttoni), taught in common to first-year Bachelor students in architecture and civil engineering, lays an important foundation of personal relationships and common concepts between students.
- Teaching architecture students the fundamentals of steel, wood and composite structures is the task of M. A. Hirt, Y. Weinand and T. Keller and their teams.
- The Architecture and Structures Teaching Unit (T. Keller and P. Cagna) focuses on lightweight structures and the materialisation of the project.
- The Architecture and Civil Engineering studio (Y. Weinand) allows architecture and civil engineering students to further interact and reflect on the subject of complex structures.

- The Conceptual Design course (A. Muttoni, engineer and R. Salvi, architect) visits a series of examples of collaborations between engineers and architects and allows architecture and civil engineering students to consider the possible modes of interaction between their professions for the conceptual design of structures.
- The Architecture and Rehabilitation Teaching Unit (E. Brühwiler and others) gathers civil engineers and architects with a focus on the refurbishment of existing constructions.

Events

IMAC organized a workshop entitled "Intelligent Computing in Engineering and Architecture" at Monte Verita in Ascona, CH, June 25-30, 2006. There were 70 participants from 16 countries of which more than half came from the USA.



More >> <http://is.epfl.ch>

*Professor Aurelio Muttoni
Director, IS Institute*



Institute of Urban and Regional Planning & Design (INTER)

The Inter Institute is an interdisciplinary centre that brings together theoretical and practical competencies in order to analyse, understand and work towards finding solutions to diverse and complex territorial problems. The research at Inter centres on two principal activities: the first being territorial dynamics, urbanism, and land management; the second being mobility and transportation systems. The interdisciplinarity, built on a convergence of competencies, the methods and culture of the disciplines and the scientific fields of the different units, takes shape on several levels: sciences/engineering, conceptual production/tool production, social science/physical and biological sciences. The question of territorial development raises some current problems such as, for example:

- Urban and regional change management,
- Multimodal mobility and transportation systems,
- Landscape ecology and spatial planning,
- Social implications of urban and technological development,
- Land related information and decision processes,
- Urbanisation in information societies,
- Urban development and dynamics in southern countries.

In order to reinforce collaboration between the Programmes and to give the Institute a strong identity, the director decided to strengthen its management operations: the executive office, the council – composed of a manager from each Programme, and the General Assembly – open to anyone involved at Inter.

In October 2006 Inter's General Assembly enjoyed strong participation. On this occasion, and in order to stimulate interdisciplinary research, an invitation to submit research bids was launched by Inter to its

Programmes. The available funding (financing with matching funds with ENAC) is intended for research projects both trans-disciplinary and interdepartmental. Among twelve responses to this invitation, four innovative projects were accepted by Inter's council and were implemented by the end of 2006.

Inter attempted to improve its visibility by developing a unique communication strategy. The basis of this strategy was put in place to systematise the organisation of conferences with well-known guest speakers (the first conference was presented by Thierry Paquot in December 2006, and the next will take place in May 2007), to highlight the publication *Cahiers de l'Inter*, to install innovative exhibitions in line with the Institute's themes, and to liven up its website. In addition, the connection between research and teaching within Inter is being investigated, in an effort to strengthen the bonds of reciprocity.

The projects in the process of being developed are notably the implementation of a Master's program "City and Territory" at the heart of ENAC, the launch of an international monitoring unit on the future of spatial development (Spade), the creation of a centre on transportation and mobility, as well as the development of *EspacesTemps.net*, an on-line review of social sciences and of the interfaces which now functions in partnership with Inter.



More >> <http://inter.epfl.ch>

*Professor Jacques Lévy
Director, INTER Institute*



Institute of Infrastructures, Resources and Environment (ICARE)

The year under review was mainly characterised by the evaluation of ENAC School requested by the EPFL Board of Directors to assess its achievements regarding education and research objectives as well as its positioning at the international level. A very important event for the ICARE Institute - as well as for all the ENAC School - seeking to contribute to an efficient and productive way to the high level vision of ENAC School as well as to the EPFL ambition to become one of the leading universities worldwide.

The ENAC Audit Committee confirmed that the ICARE Institute's visions and dynamics in favour of an interdisciplinary approach toward sustainability of the built environment responded to these challenging objectives. It recognised moreover the fact that several laboratories of ICARE Institute perform world class research within established research areas - such as water, solar energy and new infrastructure technologies - holding a strong academic position and being recognised both nationally and internationally.

The recent opening of a competition for a Tenure Track Assistant Professor in Sustainable Energy - after approval of the profile by the EPFL Board of Directors and the Chairman of the EPFL Energy Centre - will certainly contribute to further strengthen this position. This is also the case of other initiatives taken in 2006 in the education domain, the ICARE Institute having started several successful ENAC Teaching Units - such as **Environmental Noise Management**

and **Sustainable Infrastructures and Urban Areas** : they are dedicated to all ENAC School Programmes and were recognised as an excellent interdisciplinary pedagogical vehicle during the EPFL Masters accreditation exercise, another important event in 2006 to which the institute participated through different ICARE Board members (ENAC Dean, Civil Engineering Programme Head).

The ICARE Institute was also very pleased to see that both Steering Committees of the Swiss Competence Centre for Energy and Mobility (CCEM-CH) and Swiss Competence Centre for Environment and Sustainability (CCES-CH) recognised its scientific and technological vision. Several research proposals submitted by the ICARE Institute were approved by these committees in 2006 and will be supported over the next four years : a very encouraging prospect for the ICARE Institute which will seek further success within the framework of the new Message on Promotion of Education, Research and Technology submitted by the Federal Council for the period 2008-2011, as well within the new 7th Research Framework Programme of the European Commission.



More >> <http://icare.epfl.ch>

*Professor Jean-Louis Scartezzini
Director, ICARE Institute*



Environmental Sciences and Technologies Institute (ISTE)

This past year ISTE has continued to see remarkable changes, with the appointment of two new Tenure Track Assistant Professors: Alexis Berne, who joined us in October 2006, and Tamar Kohn, who will start her activities in January 2007.

ISTE faculty are very active in the ETH domain including extensive participation in the new ETH Center for Competence in Environmental Sustainability (CCES). This has allowed the expansion of formal links with colleagues in WSL (Davos, Lausanne, Birmensdorf), EAWAG and ETHZ. Projects planned or underway involve among others A. Barry, I. Bey, D. Or, M. Parlange, H. van den Bergh, C. Holliger, A. Mermoud, A. Berne, and A. Buttler. Other faculty involved in CCES includes colleagues in ENAC (C. Ancey, A. Schleiss, L. Laloui, L. Vulliet) and those in other EPFL Schools, for example, Basic Sciences (A. Davison) and Computer and Communication Sciences (M. Vetterli, K. Aberer). We are grateful for the collaborative efforts of A. Buttler (joint with WSL), C. Ludwig (joint with PSI), and V. Slaveykova (SNF-Assst. Prof.) to expand our integration with other parts of the ETH-domain. Last year we reported on the new professorial hires of R. Bernier-Latmani, D. Or and A. Barry and are continually delighted to see the rapid development over the past 12 months of their teaching and research programmes including all three obtaining competitive projects from Swiss Science Foundation and other national and international funding agencies. We also reported that emeritus Professor R. Schläepfer remains very active and it is impossible to tell he 'retired' as he continues to offer classes, serve on research

councils, help PhD students, provide his friendly assistance and wise advice to his ISTE colleagues and regularly joins the students, post docs and professors on lunch time runs. It is impossible to do justice to all the services the ISTE faculty provide to the community which include: editorships of major international journals, service on science foundation committees and boards, organising international meetings and conferences, advisory roles in federal and cantonal committees and leadership in engineering at the interface between academia and industry.

The GR and CH buildings continue to expand quickly as vibrant centres for environmental research thanks to EPFL providing vital support for the Environmental Engineering Programme. Currently there are major ongoing transformations to the GR and CH buildings including the installation of new laboratories, teaching space and offices. Part of the transformation has included the establishment of a Central Environmental Analytical Laboratory (CEAL) directed by Dr. L. Felipe de Alencastro which provides research and teaching services to the faculty and students. It is also fun to see that the new GR locker rooms are in active use as the starting point for lunch time runs, bike rides and football matches. There is even some talk of organising a social EPFL team fun run this spring.



More >> <http://iste.epfl.ch>

*Professor Marc Parlange
Director, ISTE Institute*



Doctoral School

ENAC offers three Doctoral Programmes as part of EPFL's Doctoral School. Each programme manages recruitment of its own doctoral candidates, provides an administrative and intellectual hub on campus and offers a range of advanced courses. In 2006, about 150 PhD students attended the three programmes. Some 125 new applications were received, of which 43 (34%) new PhD students were admitted.

Architecture – City – History (EDAR): Headed by Prof. J. Lucan (IA), this programme's principal aim is to supply methodological support for a multidisciplinary approach to the relationships between architecture and the city whilst at the same time bringing to light a range of emerging problems created by changes in the current urban and architectural milieux. This programme also attempts to encourage the use of novel approaches to create links between research and the processes of urban and architectural design through a doctoral project. Since 2006, this programme proposes two orientations: A) History – Theory – Heritage, specifically supported by the labs of the Institute of Architecture (IA), and B) City – Mobility – Urban Planning, offered by labs of the Institute of Urban and Regional Planning and Design (INTER). About 46 PhD Students attended this programme in 2006, and 16 new applications were accepted out of 42. *Structures (EDST)*: The goal of the Structures programme, directed by Prof. E. Brühwiler (IS), is to provide doctoral students with the necessary scientific knowledge to advance engineering methods for the conceptual design and analysis of new structures and materials, with emphasis on innovative structural systems using high-

performance materials and components, and the examination of existing structures and development of strategies for extending service lives. More than 30 PhD students attended the courses offered by the Structural Engineering Institute; 9 out of 30 new applications were accepted. *Environment (EDEN)*: Thanks to a large and diversified offer of modular courses, participants acquire solid scientific and methodological knowledge that will allow them to tackle complex environmental problems. The global and interdisciplinary aspects of environmental issues are fully taken into account in this programme, as it spans a large part of the activities of the ENAC School as well as some of the EPFL School of Basic Sciences (SB). Headed by Prof. J.-L. Scartezzini (ICARE), the EDEN Programme was attended by 76 students. 18 participants were accepted in 2006, out of 53 applicants. The ENAC Research Commission organised a Doctoral Day for the third time on July 6th, 2006, in order to foster interactions among PhD students and researchers, present and discover research themes in the context of ENAC, report on results and create a platform for discussion. 66 posters were presented on this occasion, 6 of which were awarded a prize by a jury. The Doctoral Day was enriched with a presentation by Prof. J. Neyrinck, "Communiquer la science".



More >> <http://phd.epfl.ch>

Professor Dani Or
Chair, ENAC Research
Committee



Architecture Programme (SAR)

The study plans in conformity with the Bologna agreement are now becoming stable: the first bachelor cycle was already completed in 2005 and the first class of the master cycle will be completed in the fall of 2007.

The teaching of studio work is provided by full professors as well as by visiting professors: this will allow the students to discover other ways of thinking, other ways to do architecture. Among the visiting professors, the programme invited Andrea Bassi, Bruno Krucker and Thomas von Ballmoos (Switzerland), Anne Lacaton and Jean-Philippe Vassal (France) during the summer semester 2005-2006. Jonathan Sergison and Stephen Bates, Charles Tashima (England) Kazuyo Sejima and Ryue Nishizawa (Japan), Maria Zurbuchen-Henz and Bernard Zurbuchen, Patricia Capua-Mann and Graeme Mann, Olivier Galletti and Claude Matter, Philippe Rahm (Switzerland) will be available during the winter semester 2006-2007.

Since the 1st of October 2006, Dieter Dietz has been appointed associate professor, director of the ALICE laboratory (Conception of Space Workshop). His teaching, which highlights the students' curiosity and self-taught abilities, approaches the theory behind the project as a thinking and emotional process.

In 2006, two of the Architecture School's professors retired:

- Vincent Mangeat, full professor of first year theory of architecture and studio during eight years, director of LATER (Lab. of Architectural and Territorial Design), after seventeen years of teaching at the EPFL as a professor.

- Martin Steinmann, full professor of studio work at the bachelor and masters level, director of LHAB (Urban Housing Laboratory), after having taught twenty years at the EPFL.

Claude Jeanneret, who initiated the technical documentation centre, then worked for ENAC where he greatly contributed to the installation and development of our website, also retired in 2006.

The number of first year students remains high was at the beginning of courses in October. Moreover, the School of Architecture accommodated an impressive number of students in the framework of the exchange programme ERASMUS.

Two master Studios were led by professors Jeffrey Huang (ENAC and IC) and Ives Weinand (SGC and IS).

Various work resulting from Studios by professors Inès Lamunière, Patrick Berger and Yves Weinand was presented in Boston (Logan Airport, 20.1-31.3.2006), Berlin (Art Library of the National Museums, 11.5-30.6.2006), and in Sharjah/ Dubai (American University, 13.9-24.10.2006), within the framework of the project Inventioning Architecture, a travelling exhibition to make known the teaching of architecture in Switzerland, at the EPFL and in Mendrisio.



More >> <http://sar.epfl.ch>

*Professor Luca Ortelli
Director, Architecture
Programme*



Civil Engineering Programme (SGC)

Head of the Programme :

A change at the head of the Programme occurred with the nomination of Prof. Dr. Anton Schleiss (Director of LCH) as of 1st April. He was nominated for four years, succeeding Prof. A. Parriaux who was head of the Programme for the 4 previous years.

ENAC Audit :

For the audit of the School, we delivered an assessment report on our programme. The general comments of the auditors on Civil Engineering were positive. They mainly suggested focusing our efforts on the promotion of our studies in order to increase the number of students. Efforts to promote studies in Civil Engineering have been successfully made over the last few years, proven by an increase of first year admissions of 35% in 2006.

Accreditation :

In order to meet the quality standards of OAQ and CTI, we analysed our Bachelor and Master programmes in detail, listed the competences and qualities, and determined the strengths and weaknesses. This self-evaluation was presented to a team of auditors.

Promotion for the Master :

A new brochure in English was edited in collaboration with the VPRI, for the benefit of potential students from other countries. The Master programme, together with an additional pamphlet on our specialisations and minors, is presented in detail. These documents were sent to our privileged contacts in other high rated universities all around the world to promote our Master.

Specialisations and minors :

We now offer 6 specialisations, plus one School minor:

1) Infrastructure and Environment, 2) Geotechnical Engineering, 3) Transportation, 4) Structural Engineering, 5) Hydraulic Engineering and Energy, 6) Geomatics (with SIE), 7) Territorial development (ENAC minor)

ENAC Transdisciplinarity :

In the spirit of "Projet ensemble" teaching units have begun in addition to the other ENAC offers (week, courses, projects) in the concept of exchange and to share teaching with the other two Programmes SIE and SAR.

Diplomas:

SGC celebrated 24 new graduates. It was the first class that has accomplished a Master in two years and ended in July. In the absence of a graduation ceremony, an exhibition of the Master projects was organised from 27th to 29th July.

Faculty :

Dr Lyesse Laloui (IMS) was promoted to the position of "Adjunct Professor".

Professor Michel Bierlaire was appointed at the Transport and Mobility Laboratory (TRANSPOR) since 1st July.

Professor François Frey (LSC) held his valedictory lecture on 30th March

The positions to replace Professor Sarlos (IASEN, ad interim Dr. E. Gnansounou) and Professor F. Frey (LSC, ad interim Prof. Th. Zimmermann), are still vacant.



More >> <http://sgc.epfl.ch>

*Professor Anton Schleiss
Director, Civil Engineering
Programme*



Environmental Sciences and Engineering Programme (SSIE)

The study plan, conforming to the agreements of Bologna for three years, was completed through a regrouping of teachers around Professor Christof Holliger, the work of sub-groups analysing a given problem and the teaching commission serving as a discussion and proposition forum.

The teaching at SIE relied to a large extent on teachers from the Institute of Science and Technology of the Environment (ISTE), who were recently appointed, but also on external lecturers, which has been indispensable regarding the education of our environmental engineers.

This study plan provides, at the Masters level, a choice between three specialisations: (i) Envirochemical and Bioprocess Engineering, (ii) Natural Water, Soil and Ecosystem Engineering (iii) Geomatics which is also offered in Civil Engineering. Students can also follow a minor ENAC entitled "Territorial Development". This plan is characterised by an option for students to choose a personalised, but nevertheless coherent, course.

At the Masters level, the second and last Interdisciplinary Terrain Project (PIT) began at the beginning of the summer semester, for three weeks, in collaboration with four laboratories EFLUM, HYDRAM, LASIG, and LBE. The PIT gave the students the opportunity to do some practical work in partnership with external companies.

Fourth year students discovered, during their study trip to Jordan in October, the water management problems in the Middle East as well as the cultural richness of this country.

For the first time in 2006, students, who finalised their Masters Projects in July, followed the complete Masters cycle laid down by the directives of Bologna after a third, transitory Bachelor year in 2003-2004. An exhibition of these Masters Projects took place in September. The recently graduated students received the title "Master of Science Msc in Science and Environmental Engineering". The graduation ceremony will take place on 31 March 2007 and will honor about 40 people.

On 30 March 2006, Professor Paul Péringer held his valedictory lecture.

A self-evaluation file for the programme was created in light of the recognition of EPFL engineer diplomas by the CTI (Commission des titres d'ingénieurs en France) and by the OAQ (Center of Accreditation and Quality Assurance of the Swiss Universities).



More >> <http://ssie.epfl.ch>

*Professor Christof Holliger
Director, Environmental Sciences
and Engineering Programme*



Continuing Education

Five Masters of Advanced Studies (MAS) were running at ENAC in 2006, with a global attendance of over 100 participants.

The MAS in *Water Resources Management and Engineering*, with two specialisations (Hydrology or Hydraulic Schemes), started in October 2005 and came to an end in December 2006 as far as the theoretical part is concerned. The lectures were provided by 60 professors and scientific collaborators from EPFL, other partner institutes, public organisations and the private sector. Of the 32 students from 14 different countries, 30 will work on their practical thesis for the next 6 months. The graduation ceremony is planned in July 2007. Representing 10 countries across 3 continents, the 19 students of the 6th edition of the MAS in *Architecture et Développement Durable* have hit the ground running: achieving an average result of 5.14/6 in subjects as diverse as climate analysis and vernacular bioclimatic design, dynamic thermal simulation and sustainable building renovation. Having successfully completed their courses on the physical principles of sustainable architectural design at EPFL, the students are now developing their thesis topics whilst pursuing courses on the application of these principles at the Université Catholique de Louvain in Belgium.

The first edition of the MAS in *Regional and Urban Planning and Design* started in autumn 2004, with 13 students attending the full programme and a few others choosing a part-time one. In 2006, six of them ended their MAS project; three students are currently working on their project and one person obtained a diploma. The last three students dropped out of the programme because of attractive employment

proposals. The achieved results of the MAS projects led to either well received publications or concrete implementation perspectives.

In 2006, the Research lab on the Economics and Management of the Environment organised for the 4th time its Certificate of advanced studies (CAS) in economic property analysis. This 20 ECTS credits programme designed for experienced architects covers all aspects of property valuation. Combined with two CAS in technical and in legal property analysis organised in Fribourg, it leads to a MAS in *Property Analysis*. 17 participants started the CAS at EPFL, 12 obtained the certificate. Next to this part-time programme, REME also organised 9 half or full-day continued education courses in real-estate and construction economics, attracting over 450 qualified professionals.

33 regular students finished the academic part of our 2004-2006 MAS in *Energy* in July 2006. 12 participants received a fellowship during this year. The participants reached an average of 80.4 % of the total possible points at the second year's examinations. No student failed. 23 students finished their Master thesis in 2006. The remaining 10 will present their research beginning of 2007. It is planned to reorganise this programme under the leading of the new EPFL Energy Center.



Jean-Denis Bourquin, ENAC
Delegate for Continuing Education,
in collaboration with Dr G. De
Cesare (LCH), Dr D. Robinson
(LESO-PB), Prof. F. Galay (LASIG),
Prof. P. Thalmann (REME) and
Ms L. von Gross (LASEN).



Hosted Units

Swiss Federal Institute for Forest, Snow and Landscape Research WSL Lausanne Site

For about 15 years, the “Antenne romande” of the WSL Institute (an institution of the ETH Domain) has been hosted by EPFL and working with the latter to develop cooperation in research, expertise and education on landscape management in mountain and peri-urban areas, mainly focused on the French-speaking part of Switzerland. In 2004, this cooperation was strengthened by the appointment of Prof. A. Buttler and the establishment of the ECOS Laboratory at ENAC. Since 2006, WSL and ENAC reinforce their collaboration by integrating the EPFL laboratory ECOS and the WSL Lausanne site. This joint entity is under the leadership of Prof. Buttler. Research is focused mainly on two axes: i) restoration of ecosystems and ii) wetlands. The staff (ECOS and WSL) is currently around 20 scientists, half a dozen PhD students and about ten master students and trainees.



Prof. Alexandre Buttler

Chair of Law

The Chair of Law, which has been formally integrated into the ENAC Faculty since the restructuring of the EPFL in 2001/2002, is made up of three Professors and a lecturer from the Law Faculty of the University of Fribourg, in addition to two assistant PhD students.

Courses deal with the rudiments of law (introduction to public and private law) with specific approaches for architects and engineers, such as regional development law, construction law, environmental law and private construction law. Several duplicated lecture notes have been prepared for them. Teachers from the Chair of Law also develop research activities in these fields, especially on the law on contaminated sites, coordination between regional development and the law on the protection of the environment and also civil liability.



Prof. Isabelle Romy



“Projeter ensemble”

In 2006, the following ENAC teaching activities took place:

ENAC COURSES I & II (first year):

Winter semester: Read and understand the natural territory. Measure and representation of the natural territory.

Summer semester: Read and understand the built territory.

ENAC COURSES III & IV (second year):

Winter semester: Territorial development of the Rhône valley (natural resources, infrastructures and hydraulic development, transport infrastructures, urban development).

Summer semester: Territorial development from the Lausanne agglomeration to the Jura (natural resources, infrastructures and hydraulic development, transport infrastructures, urban development).

ENAC WEEKS (second year, 15-19 of May 06).

The following 11 topics took place:

- Space - Light - Time
- Travel diary on the banks of Lake Geneva
- West of Forestay
- Planning contemporary public spaces together
- Natural hazards in mountainous areas
- Pathology of the historic construction
- Medium altitude mountain resorts: alternatives to development faced with climatic warming
- Surveying and staking out buildings
- ENAC Measurements
- Development and renaturation of waterways and alluvial plains as applied to the Rhône Plain in Valais.
- Photography and architecture

ENAC LEARNING UNITS (third year, summer semester): the following 12 topics took place for the first time in 2006:

- The landscape: image, imagination and artistic interpretation
- Integration into the landscape of multi-purpose developments in the framework of the 3rd correction of the Rhône
- Urban neighbourhoods, infrastructures and sustainable development
- Integral design of a building
- Analysis and approach to the project in the space between towns
- Rehabilitation
- Climatology for engineers and architects
- Architecture and structures
- Construction of the place and of the environment: reflexions and practical around the space, the vacuum, the full, the transitory one
- Photography and Territory or the Territorial Observatory
- Heritage and urban renewal; conflicts and synergies of architectural development
- Noise protection



More >> <http://cours-enac.epfl.ch>

Pascal Turberg
ENAC Teaching Coordinator



CDENAC and Students

The year 2006 provided CDENAC with further opportunities to participate in ENAC and EPFL's strategic activities.

From the ENAC Audit to accreditation of the Master Programmes

In early May 2006 the ENAC School was assessed by a group of nine international experts. CDENAC was actively involved through an interview by the experts of over 20 class representatives from all years and by drawing up the students' standpoint on the Audit Report.

In November, a dozen Master students participated in the process to accredit EPFL Master Programmes by interacting with the experts commissioned by the Center of Accreditation and Quality Assurance of the Swiss Universities (OAQ) and by the French "Commission des titres d'ingénieurs" (CTI).

From students to the recruitment of new faculty

Contrary to current practice in Zurich, until now EPFL search committees for new professors did not include a representative of the students. Under the impulse of CDENAC the situation has now changed and three student representatives have already participated in search committees since the start of 2007.

Everyday life for students gets more and more exciting

Party time for ENAC students has a few traditional landmarks: the Architecture Ball (DARC), the famous Civil Engineering *raclette* and the celebrated thematic evenings of students in Environment took place as usual. As for CDENAC, it organised the traditional "ENAC Ball" bringing together all students in the ENAC School.

However, the most remarkable event in this field is the advent of a "Living & Studying Area" (EVE) for the ENAC School students. These premises, developed under CDENAC's supervision, offer the students a place in which to rest, recharge their batteries or study in a less monastic atmosphere than the library's.

More >> <http://cdenac.epfl.ch>

Alexandre Monnin
in charge of CDENAC
Communications

ENAC Direction

The new ENAC School Direction for the period 2006-2009 is composed as follows:

Prof. Laurent Vulliet, Dean
Mrs. Monica Ruzicka-Rossier
Prof. Aurelio Muttoni
Prof. Luca Ortelli
Prof. Marc Parlange

The Direction is in charge of the School's strategic vision and defines the major trends relating to teaching, the doctoral School, continuing education, research, professor appointments, assessment of ENAC units, human resources, and finance and facility management. During 2006, the ENAC Direction dealt with the following issues in particular:

Strategy

- ENAC Strategic vision for the 2008-2011 EPFL planning
- ENAC Audit 2006, validation of the assessment report, of the ENAC School Standpoint on the Audit Committee's report and meeting with the Committee of Experts
- Audit for the Commission des Titres d'Ingénieurs (organisation for accreditation of engineers in France) and Centre of Accreditation and Quality Assurance of Swiss Universities (OAQ).
- Planning of professor positions for the period 2006-2008: appointments to seven new professor positions through competitive selection.
- Promoting applicants to Adjunct Professor or Senior Scientist ("MER").
- Decision on the future of the "Urban and Regional Planning Community-CEAT".
- Future of the Information Technology department.

Finance and Human Resources

- Strategic budget forecasts for the period 2007-2008 and supervision of the operating budget resources for 2006.
- Human resource management – staff of 590 including some 40 professors and 35% female staff.

- Meeting with the staff of professors taking retirement and appointment of new director for the architecture library.

Teaching and Research

- Strategy of the "Projeter ensemble" project.
- Adoption of the "Output Centre" project assembling the 3D prototyping service, the 2D printing and the workshop for models.
- Meetings to welcome new professors and meeting with the ENAC Students Delegation Conference.

External Relations

- Contact and discussion with the Swiss Federal Institute for Forest, Snow and Landscape Research – WSL, the Swiss Federal Institute of Aquatic Science and Technology – EAWAG and the Department of Civil, Environmental and Geomatic Engineering (DBAUG) of ETH Zürich.
- Involvement in the national platform "Zukunft Bau" on the future of construction.
- Contact with the "Swiss Federation of Architecture".

The ENAC Direction met on approximately twenty occasions and also attended the meetings of various ENAC Boards and Councils.

ENAC Administration

The ENAC Administration is in charge of finance and human resource management. It provides support to the ENAC Direction in the day-to-day management of staff turnover, financial and logistics planning and management data analysis. All administration staff members are part of a team of approximately 30 full time equivalent persons. A few milestones in 2006:

Headquarter Staff

- Finalised appointment dossiers for the ETH Board for seven new professors, one Adjunct Professorship and managed applications for three new professor positions
- ENAC School Audit, completion of assessment and Standpoint reports, web database and analysis of management information; follow-up with the Commission des Titres d'Ingénieurs, the accreditation body, and quality assurance of Swiss higher education schools
- Financial planning relating to the arrival of new professors, professor retirements; management of the budgets and third-party funding
- Coordination of ENAC position relating to six consultations and organisation of meetings with those professional associations (54) concerned by ENAC activities.

ENAC Communication

- ENAC website : update and design, support for the sites of ENAC Programmes, Institutes and « Projeter ensemble ».
- ENAC imprimatur: graphics and editing for the audit reports, activity report and posters; posters for ENAC doctoral students day.

ENAC Exhibitions and Conferences

- Organised five architecture exhibitions and the Eternit 2006 Prix d'Architecture
- Publication of catalogues, workshop and conference reports.

Information Technology

- Day-to-day management of over 800 students and staff workstations; start-up of computer

systems for five new units, analysis of professional software

- Initiation of a reflection process on the future of the IT Department.

Libraries

- Mr. Steven Gheyselinck took over the management of the architecture library in October 2006.
- Installation of a computer system for loans and theft protection, regrouping of NEBIS catalogues in four laboratory libraries.

Architecture Workshop

- Implementation of three 3D prototyping devices.
- Services to other Schools and the Vice-Presidency, collaboration with the Haute Ecole Supérieure de Fribourg and Ecole Cantonale d'Art of Lausanne.

Infrastructure and Logistics

- Development of new facility management software and reorganisation of the space in the buildings to accommodate new professors
- Management of the security access cards and of the school's vehicle fleet.

ENAC in Figures

ENAC is :

1691 students including doctoral students and continuing education
593 colleagues

The budget amounts to CHF 67 million, of which more than 80% is personnel costs and 30% comes from third parties.

ENAC Personnel

Full-Time Equivalent Positions (including apprentices)
Status at 31 December 2006

Distribution by Institute and by Funding Source		EPFL Budget	3 rd -Party Funding	Total
IA	Institute of Architecture	48.6	3.6	52.2
IS	Structural Engineering Institute	41.7	25.5	67.2
INTER	Institute of Urban and Regional Planning & Design	54.7	38.6	93.3
ICARE	Institute of Infrastructures, Resources and Environment	63.0	48.1	111.1
ISTE	Environmental Sciences and Technologies Institute	62.8	31.8	94.6
ENAC-SG	Administration, including IT, workshops, libraries, communication and the staff of the 3 Master Programmes	45.8	0.3	46.1
Total		316.6	147.9	464.5

Distribution by Position and by Institute	IA	IS	INTER	ICARE	ISTE	Admin.	Total
Professors and Senior Scientists	9.7	8.0	10.6	10.0	10.0	0.0	48.3
Research Associates	10.1	12.5	30.4	17.9	34.0	9.5	114.4
Administrative and Technical Staff (incl. Apprentices)	5.2	14.8	9.1	34.6	22.6	26.2	112.5
Assistants	27.2	31.9	43.2	48.6	28.0	10.4	189.3
Total	52.2	67.2	93.3	111.1	94.6	46.1	464.5

ENAC Expenditure for the Year 2006
In kCHF

By Funding Source	IA	IS	INTER	ICARE	ISTE	Program mes	Admin.	Total	%
EPFL Budget	6'314	6'801	8'136	9'056	9'039	2'694	5'422	47'462	71
EPFL Multi-Year Budget	46	239	487	331	933	0	128	2'164	3
Third-Party Funding	237	2'521	4'699	5'283	4'359	3	206	17'308	26
Total	6'597	9'561	13'322	14'670	14'331	2'697	5'756	66'934	100

By Nature of Spending	IA	IS	INTER	ICARE	ISTE	Program mes	Admin.	Total	%
Personnel Costs	6'189	8'522	12'028	12'529	10'856	2'261	4'378	56'763	85
Operating Costs	354	799	1'259	2'018	2'111	436	1'193	8'170	12
Investments	54	240	35	123	1'364	0	185	2'001	3
Total	6'597	9'561	13'322	14'670	14'331	2'697	5'756	66'934	100

ENAC Students

Bachelor / Master		SAR		SGC		SSIE		TOTAL	
Bachelor 1st year		231		87		91		409	
Bachelor 2nd year		82		50		60		192	
Bachelor 3rd year		122		37		50		209	
Master 1st year		86		52		55		193	
Master 2nd year		29		29		62		120	
Masters' Degree		53		24		38		115	
Architecture Internships*		89		0		0		89	
Students with tailored curricula		6		3		10		19	
Exchange Students		39		21		20		80	
Total BSc/MSc Students		737		303		386		1426	
% of women	% of foreigners	44%	30%	17%	36%	38%	24%	36%	30%
Diplomas Awarded		69		24		39		132	
% of women	% of foreigners	36%	22%	21%	17%	38%	31%	34%	23%

* Internships for other Programmes are integrated into the yearly statistics

Continuing Education		SAR		SGC		SSIE		TOTAL	
Total Students in Cont. Education		32		0		26		58	
% of women	% of foreigners	44%	72%	0%	0%	31%	54%	38%	64%
Postgraduate Diplomas Awarded		1		1		12		14	
Postgraduate Certificates Awarded		5		0		28		33	

Doctorates		SAR		SGC		SSIE		TOTAL	
Total Doctoral Students Registered		75		77		55		207	
% of women	% of foreigners	39%	56%	18%	58%	31%	65%	29%	59%
Doctorates Awarded		3		10		24		37	
% of women	% of foreigners	33%	67%	10%	90%	33%	63%	27%	70%

Total Students								1691	
% of women	% of foreigners							36%	34%

N.B.: The percentage of foreigners includes those residing in Switzerland

As at 1st December 2006
Source : EPFL Registrar's Office

ENAC Faculty in 2006

In alphabetical order

Name	Status	Lab	Institute
Abou Jaoudé Georges	Associate Prof.	LIV	IA
Ancey Christophe	Tenure Track Assistant Prof.	LHE	ICARE
Barry David Andrew	Full Prof.	ECOL	ISTE
Becker Van Slooten Kristin	Senior Scientist	ECOL	ISTE
Berger Patrick	Full Prof.	UTA	INTER
Berne Alexis	Tenure Track Assistant Prof.	LTE	ISTE
Bernier-Latmani Rizlan	Tenure Track Assistant Prof.	EML	ISTE
Bey Isabelle	Tenure Track Assistant Prof.	IMCA	ISTE
Bierlaire Michel	Associate Prof.	TRANSP-OR	INTER
Bolay Jean-Claude	Adjunct Prof.	LASUR	INTER
Brühwiler Eugen	Full Prof.	MCS	IS
Buttler Alexandre	Adjunct Prof.	ECOS	ISTE
Cantàfora Arduino	Full Prof.	CRE	IA
Chuard Pierre	Adjunct Prof.	LCC1	IA
Devanathéry-Lamunière Inès	Full Prof.	LAMU	IA
Dietz Dieter	Associate Prof.	ALICE	IA
Dumont André-Gilles	Full Prof.	LAVOC	ICARE
Frey Pierre	Adjunct Prof.	ACM	INTER
Gargiani Roberto	Full Prof.	LTH3	IA
Gnansounou Edgar	Senior Scientist	LASEN	ICARE
Golay François	Full Prof.	LASIG	INTER
Gugger Harry	Full Prof.	LAPA	IA
Hirt Manfred	Full Prof.	ICOM	IS
Holliger Christof	Associate Prof.	LBE	ISTE
Huang Jeffrey	Full Prof.	IDM2	IA
Kaufmann Vincent	Tenure Track Assistant Prof.	LASUR	INTER
Keller Pierre	Adjunct Prof.	-	ENAC-DO
Keller Thomas	Associate Prof.	CCLAB	IS
Labrousse Vincent	Senior Scientist	IMR	ICARE
Laloui Lyesse	Adjunct Prof.	IMS	ICARE
Lebet Jean-Paul	Senior Scientist	ICOM	IS
Lemmin Ulrich	Adjunct Prof.	LHE	ICARE
Lévy Jacques	Full Prof.	LAC	INTER
Lucan Jacques	Associate Prof.	LTH1	IA
Ludwig Christian	Adjunct Prof.	ISTE-GE	ISTE
Marchand Bruno	Associate Prof.	LTH2	IA
Marchand Jean-Daniel	Adjunct Prof.	TRANSP-OR	INTER
Merminod Bertrand	Full Prof.	TOPO	INTER
Mermoud André	Adjunct Prof.	HYDRAM	ISTE
Mestelan Patrick	Full Prof.	AIC	IA

Name	Status	Lab	Institute
Morel Claude	Full Prof.	LCC1	IA
Muttoni Aurelio	Full Prof.	IS-BETON	IS
November Valérie	SNF Prof.	LAC	INTER
Or Dani	Full Prof.	LASEP	ISTE
Ortelli Luca	Full Prof.	LCC2	IA
Parlange Marc	Full Prof.	EFLUM	ISTE
Parriaux Aurèle	Full Prof.	GEOLEP	ICARE
Queisser Andreas	Senior Scientist	LCC1	IA
Rastogi Pramod	Adjunct Prof.	IMAC	IS
Rivier Robert	Full Prof.	LITEP	INTER
Scartezzini Jean-Louis	Full Prof.	LESO-PB	ICARE
Schleiss Anton	Full Prof.	LCH	ICARE
Schuler Martin	Adjunct Prof.	LAC	INTER
Slaveykova-Startcheva Vera	SNF Prof.	EBC	ISTE
Smith Ian	Full Prof.	IMAC	IS
Steinmann Martin	Hon. Prof.	–	SAR
Thalmann Philippe	Associate Prof.	REME	INTER
Tranda-Pittion Michèle	Secretary General	CEAT	INTER
van den Bergh Hubert	Full Prof.	LPAS	ISTE
Vulliet Laurent	Full Prof.	LMS	ICARE
Weinand Yves	Associate Prof.	IBOIS	IS
Zhao Jian	Full Prof.	LMR	ICARE
Zimmermann Thomas	Adjunct Prof.	LSC	IS