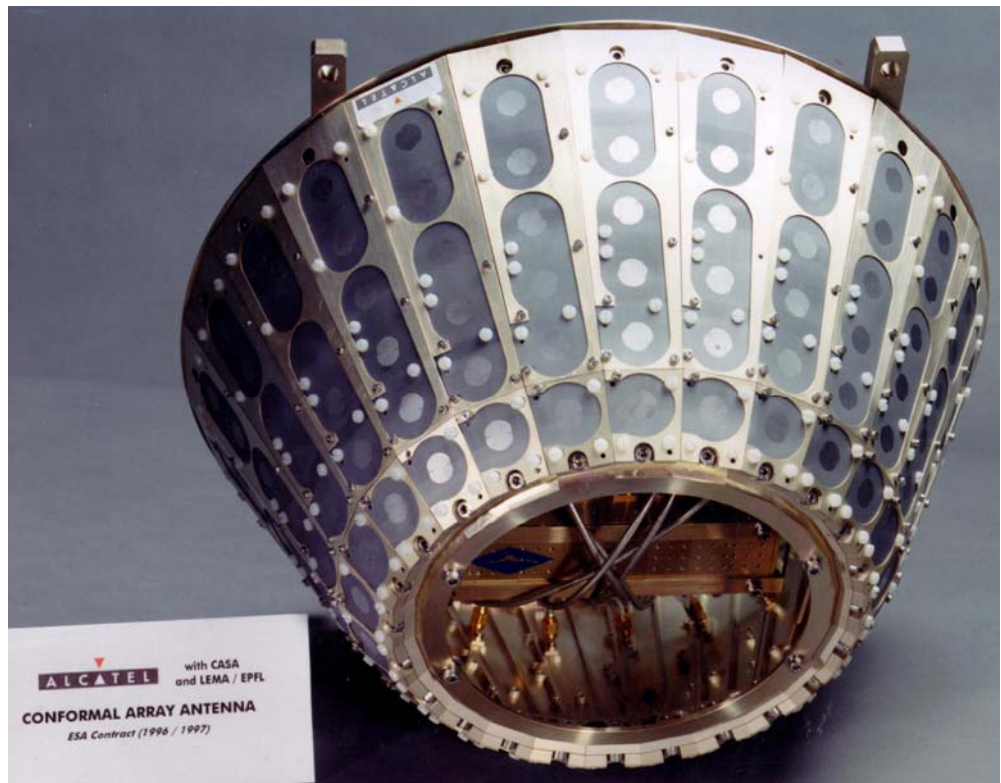




EUROPEAN SCHOOL OF ANTENNAS

Analysis of Planar and Conformal Antennas

February 27 – March 3, 2006
EPFL, Lausanne, Switzerland



Involved institutions: EPFL-CHALMERS-ERICSSON-KUL-KTH-U. Belgrade

Final Programme

Doctoral School Programme

The ACE Doctoral School of Antennas takes place from February 27 to March 3, 2006 on the campus of the EPFL, Lausanne, Switzerland and it is dedicated to the Analysis of Planar and Conformal antennas.

This course will cover the theoretical aspects of the analysis and design of planar and conformal antennas. The first half of the course will deal with the fundamentals of the mathematical and electromagnetic models being used for the analysis of printed antennas. The second half will cover analysis methods for antennas embedded in multilayer structures of planar, circular, cylindrical and spherical types, with real-life applications.

All lectures will be held in the room CO017 and the exercises in the computer room ELD020.

TEACHERS:

- Prof. J. R. Mosig (EPFL, Switzerland)
- Prof. P.-S. Kildal (Chalmers, Sweden)
- Prof. Z. Šipuš (Chalmers, Sweden)
- Prof. G. Vandenbosch (KUL, Belgium)
- Prof. A. R. Djordjević, EPFL Invited Lecturer (Univ. Belgrade, Serbia)
- Dr. S. Raffaelli (Ericsson, Sweden)
- Dr. P. Persson (KTH, Sweden)

SCHEDULE

Monday February 27th (Room CO 017)

- 08:00-10:00 Introduction to Integral Equations for printed structures. Field and potential-based formulations. Space and Spectral domains.
Lecturer: J. R. Mosig
- 10:00-12:00 Green's functions for printed antennas. Numerical techniques. Computation of macroscopic circuit quantities.
Lecturer: J. R. Mosig
- 12:00-14:00 Lunch at Le Vinci
- 14:00-17:00 Self-study and assignments
Lecturer: J. R. Mosig
- 17:00-18:00 Plenary discussion
Lecturer: J. R. Mosig

Tuesday February 28th (Room CO 017)

- 08:00-10:00 Modelling of composite metallic and dielectric structures using decomposition into regions with homogeneous media. Part I: Fundamentals
Lecturer: A. R. Djordjević
- 10:00-12:00 Modelling of composite metallic and dielectric structures using decomposition into regions with homogeneous media. Part II: The Wipl-D approach
Lecturer: A. R. Djordjević
- 12:00-14:00 Lunch at Le Vinci
- 14:00-17:00 Self-study and assignments: The Wipl-D software **Room ELD020**
Lecturer: A. R. Djordjević
- 17:00-18:00 Plenary discussion
Lecturer: A. R. Djordjević

Wednesday March 1st (Room CO 017)

- 08:00-10:00 Structure definitions, canonical structures, spectral domain methods
Lecturer: P.-S. Kildal
- 10:00-12:00 Spectral-domain methods obtained by 1-D and 2-D Fourier transformations in three coordinate systems. Spectral Green's functions. Generalized asymptote extraction.
Lecturers: Z. Šipuš and P.-S. Kildal
- 12:00-14:00 Lunch at Le Vinci
- 14:00-17:00 Self-study and assignments
Lecturer: Z. Šipuš
- 17:00-18:00 Plenary discussion
Lecturer: Z. Šipuš

Thursday March 2nd (Room CO 017)

- 08:00-10:00 Analysis and design of patch and waveguide arrays embedded in cylindrical and spherical multilayer structure
Lecturer: Z. Šipuš
- 10:00-12:00 The expansion-wave concept / use of hierarchy and modularity in planar structure modelling
Lecturer: G. Vandenbosch
- 12:00-14:00 Lunch at Le Vinci
- 14:00-17:00 Self-study and assignments
Lecturer: Z. Šipuš
- 17:00-18:00 Plenary discussion
Lecturer: Z. Šipuš

19:00 **Gala dinner at La Banane (UNIL)**

Friday March 3rd (Room CO 017)

- 08:00-10:00 UTD and practical conformal arrays
Lecturer: P. Persson
- 10:00-12:00 Practical aspects when designing conformal arrays
Lecturers: S. Raffaelli
- 12:00-14:00 Lunch at Le Vinci
- 14:00-17:00 Self-study and assignments
Lecturers: S. Raffaelli and P. Persson
- 17:00-18:00 Plenary discussion
Lecturers: S. Raffaelli and P. Persson

Accommodation

A limited number of hotel rooms have been reserved for the attendees of the Doctoral School in the following hotels:

Hotel Jeunotel SA

Chemin du Bois-de-Vaux 36, 1007 Lausanne
Tel.: +41 21 626 02 22, Fax: +41 21 626 0226
<http://www.jeunotel.ch>, jeunotel@urbanet.ch

Lausanne Guesthouse&Backpacker

Ch. des Epinettes 4, 1007 Lausanne
Fax: +41 21 601 80 01
<http://www.lausanne-guesthouse.ch>, info@lausanne-guesthouse.ch

Château d'Ouchy

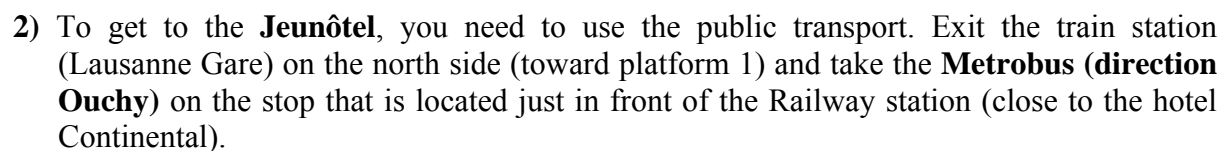
Place du port 2, 1006 Lausanne Ouchy
Tel.: +41 21 616 74 51, Fax: +41 21 617 51 37
<http://www.chateaudouchy.ch>, info@chateaudouchy.ch

Getting to the hotels

From Geneva Airport to Lausanne Railway station by train

The railway station is next to Geneva airport. Take any train that will stop in Lausanne. There is only one train station in Lausanne. You can buy the tickets at the CFF ticket counters. There are, also, a number of ticketing machines in the hall that accept most credit cards and speak English. Do not buy a return ticket, which is only valid on that day. Buy a one-way ticket to Lausanne (two one-way tickets cost actually the same as a return ticket). The price of a **one-way ticket** is **24 CHF**.

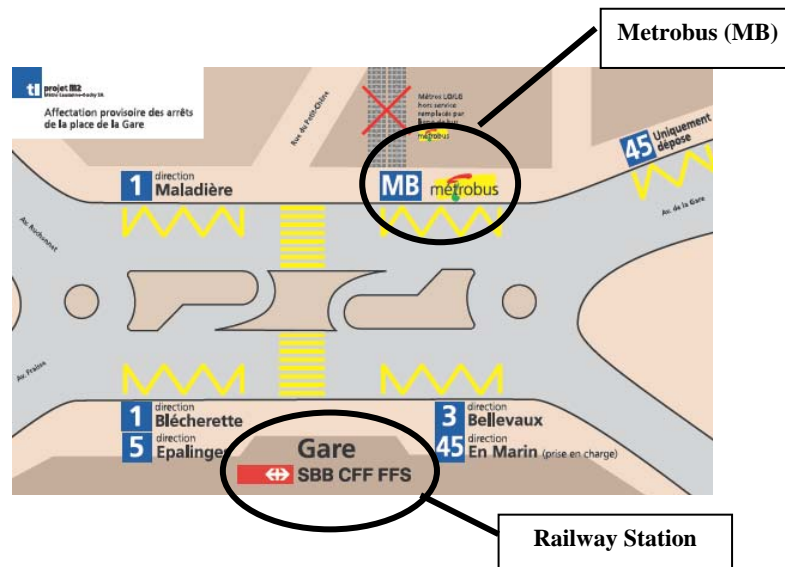
1) **Lausanne Guesthouse** is within walking distance of Lausanne railway station (Lausanne Gare). Exit the train station on the north side (toward platform 1) and use the map given below.



Get off at the final stop at **Ouchy**. There, take the bus **number 2** and get off at the stop **Bois de Vaux**. The Jeunôtel is within walking distance of this bus stop (see the maps below).



- 3) The **Château d'Ouchy** is located at the lakeside of the Lake of Geneva. In front of the railway station of Lausanne besides the hotel Continental take the **Metrobus (MB)** direction Ouchy.



Get off at the final stop at **Ouchy**. The hotel **Château d'Ouchy** is just beside the bus stop.

From the hotel to the Doctoral School venue

1) Lausanne Guesthouse

In front of the railway station besides the hotel Continental is the stop of the **Metrobus (MB)**. Take this bus (direction **Montbenon/Flon**) and get off at the stop **Montbenon/Flon** (in front of the Palace hotel and the parking). Cross the street and follow the **M (metro)** signs: you will cross the small bridge before taking the elevator. Once on the ground floor, take the metro **M1** (TSOL) going to **Renens-CFF**. Disembark at the stop called **EPFL**. It takes about 30min to arrive at EPFL. Follow the instructions “From M1 EPFL to CO 017” on page 11.

2) Jeunôtel

Take the bus **number 2** from the stop **Bois de Vaux** (see the map on the previous page) in direction **Bourdonnette** (final stop), and then take the metro **M1** (TSOL) direction **Renens-CFF**. Disembark at the stop called **EPFL**. It takes about 30min to arrive at EPFL. Follow the instructions “From M1 EPFL to CO 017” on page 11.

3) Château d’Ouchy

Take **bus number 2** direction **Bourdonnette** until **Bourdonnette (final stop)**. There take the metro **M1** (TSOL) direction **Renens-CFF**. Get off the metro at the stop called **EPFL**. It takes about 30min to arrive at EPFL. Follow the instructions “From M1 EPFL to CO 017” on page 11.

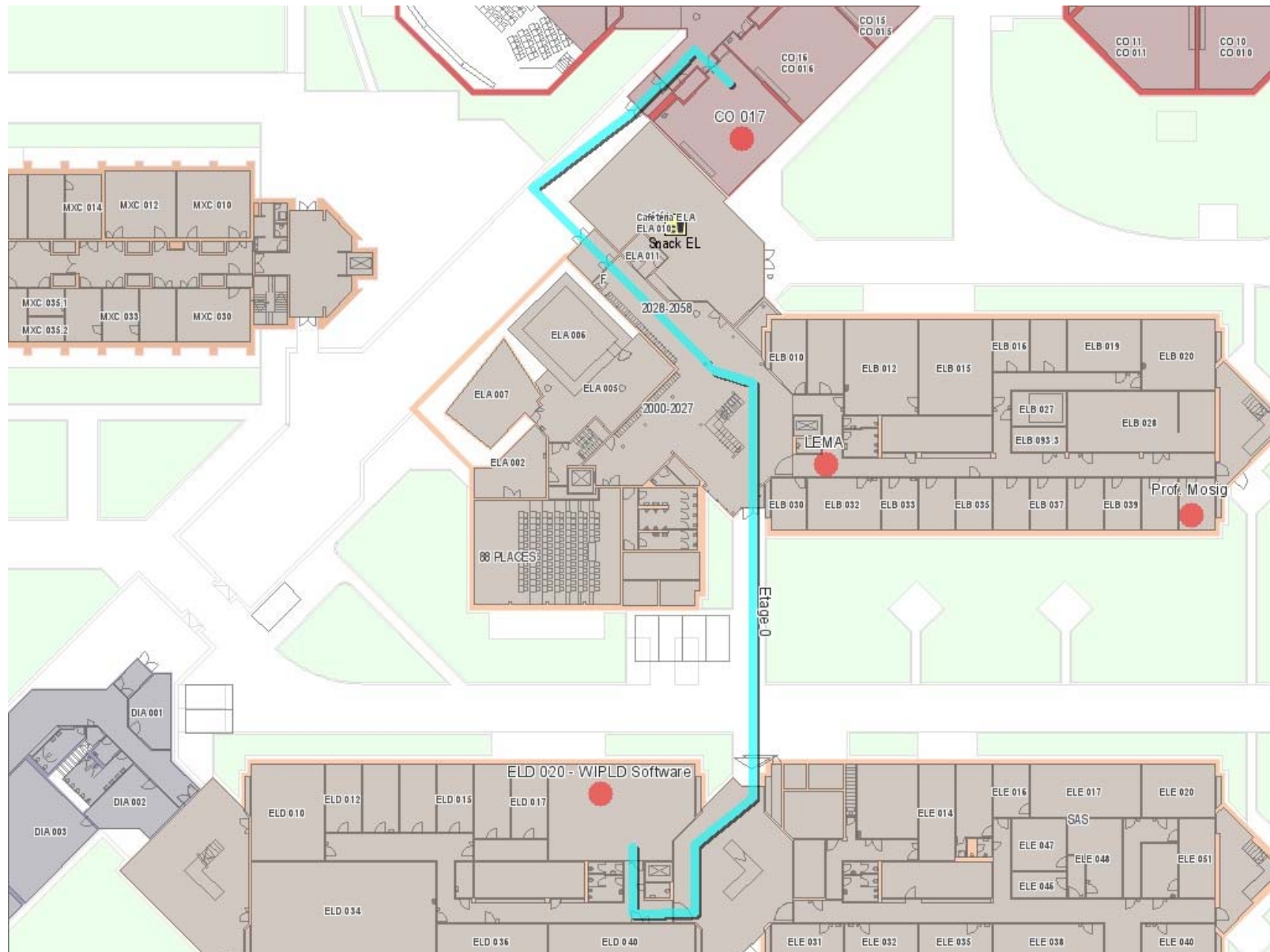
To travel from the hotels to EPFL or vice versa with public transportation you have to purchase a ticket. At every stop there are one or several ticket machines available. You have to choose a ticket for **2 zones**. The ticket costs **2.80 CHF**. It can be purchased in Euro as well (**2 EUR**). This ticket allows you to use any of the public transport (busses and metro) to move to your destination within **one hour**. **Please make sure that you have the exact amount in coins since the ticket machines do not give back the change.**

From M1 EPFL to CO 017

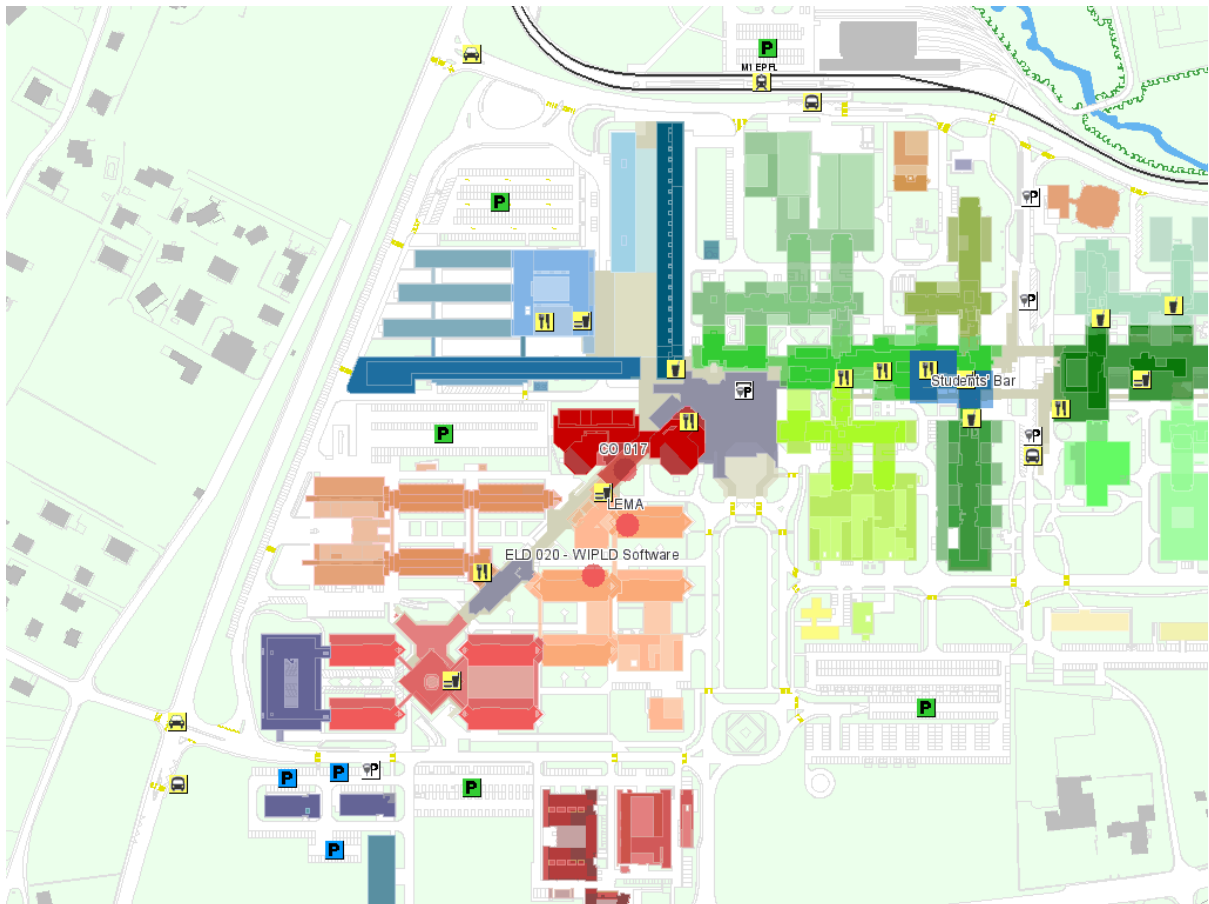
The map here below shows the location of the metro stop **M1 EPFL**. Follow the path marked with black dots on the map, cross the road (underpass) and continue straight until you see the building **CO**. The classroom **CO017** is in this building on the **level 0**. Directions to this room will be clearly indicated along this path in order to help you get there.



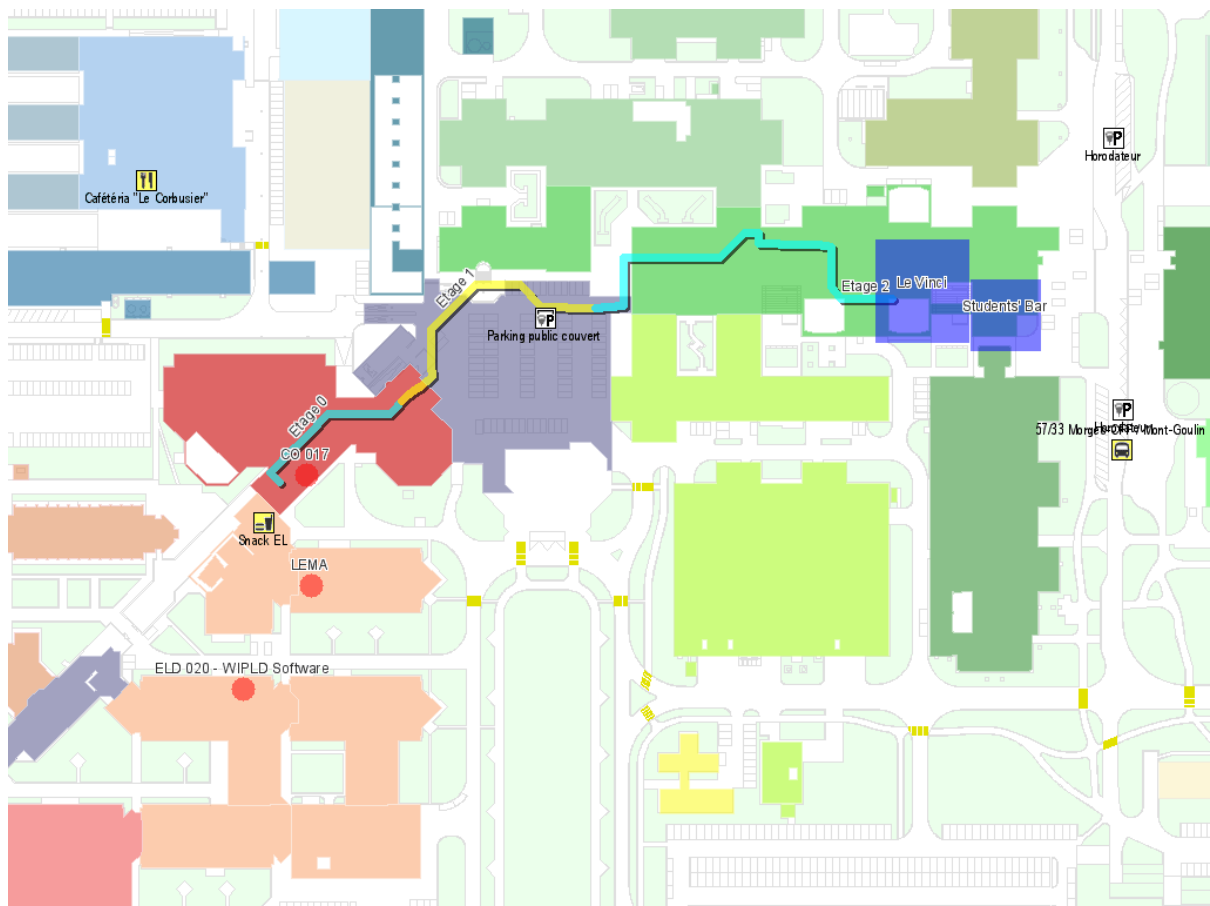
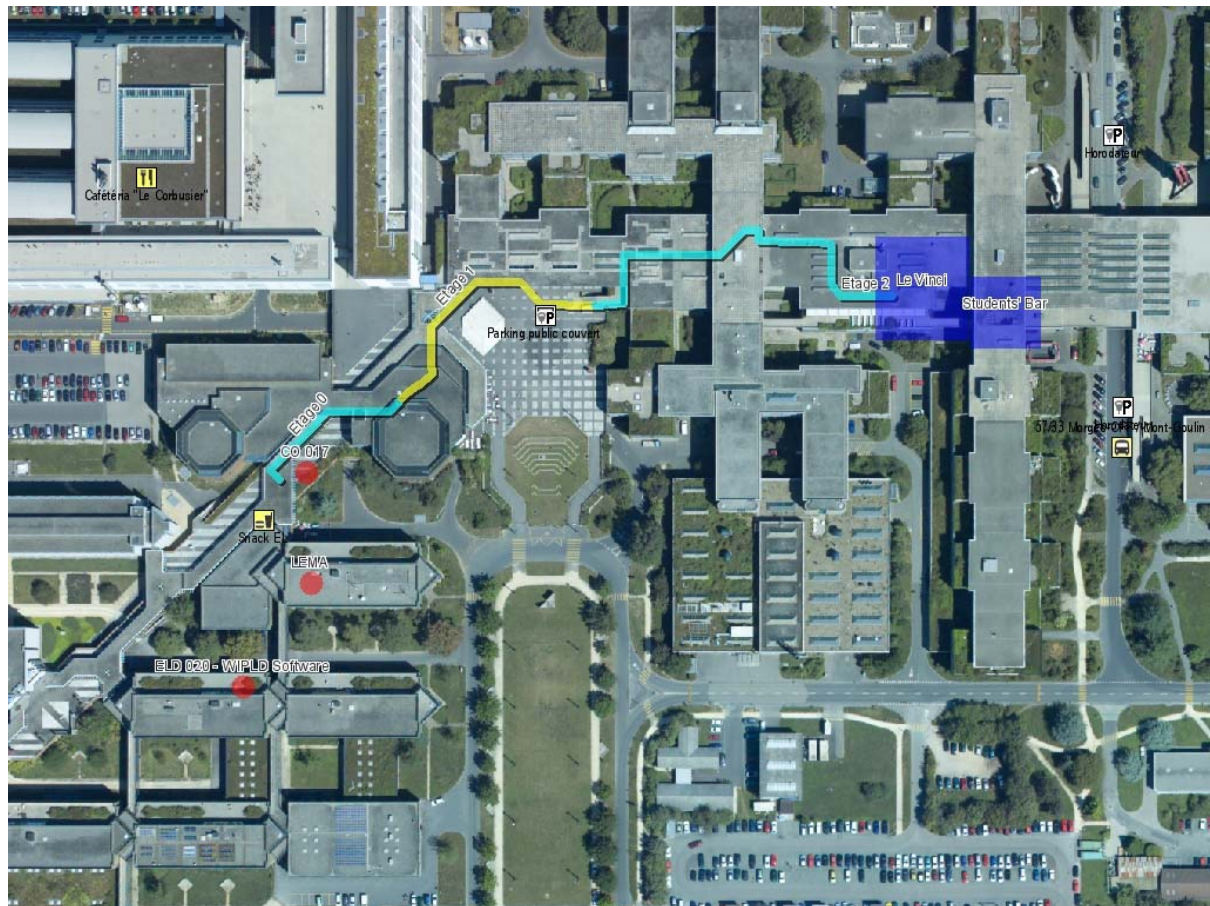
Doctoral School Venue - Locations



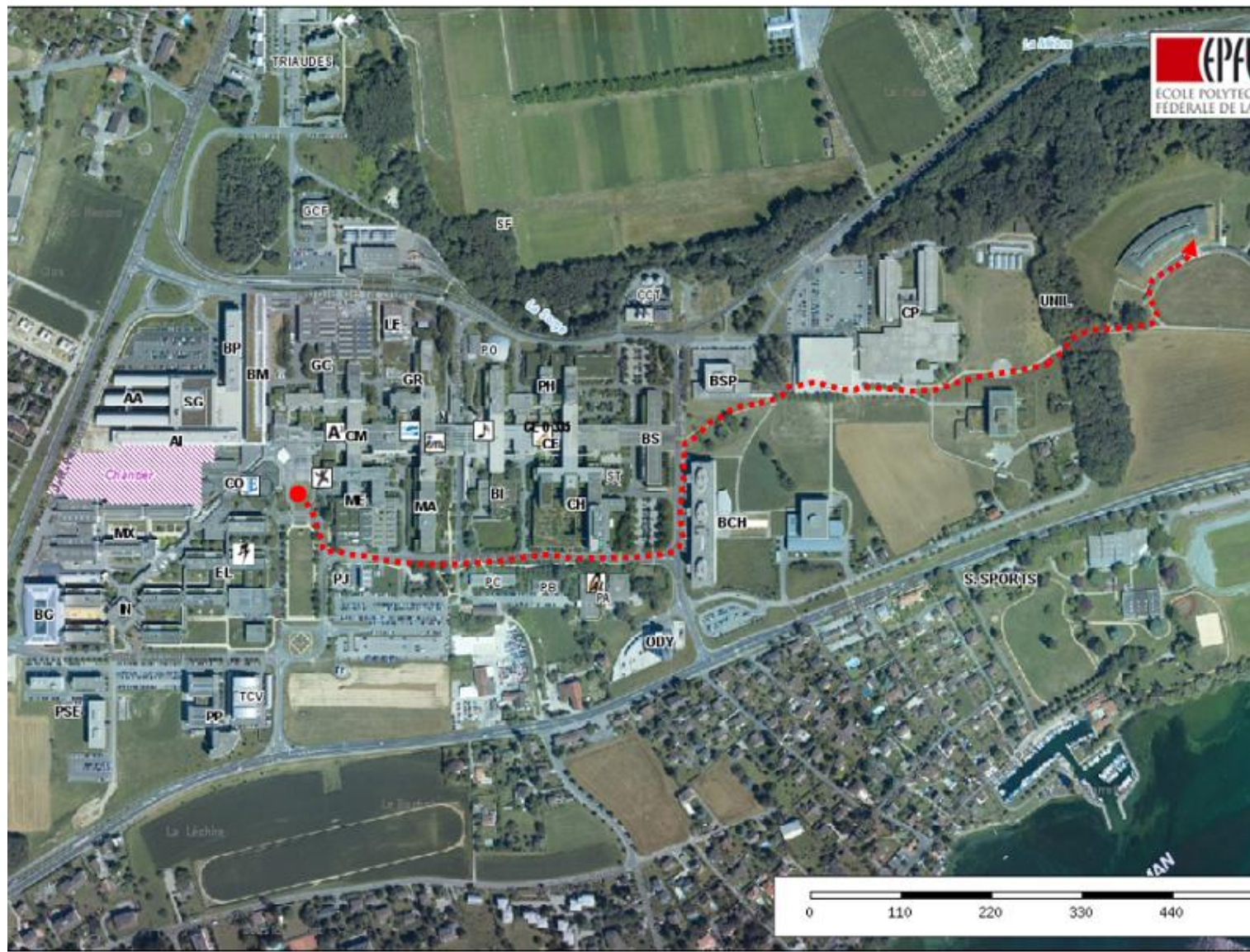
Campus EPFL



Lunch at Le Vinci - Directions



Gala dinner at La Banane (UNIL) - Directions



Useful links and contact information

LEMA-EPFL Secretariat
Mrs. Eulalia Durussel, ELB039
Tél. + 41 21 693 26 69 Fax + 41 21 693 26 73
Email : eulalia.durussel@epfl.ch

Swiss Railways
<http://www.sbb.ch/en/index.htm>

Public Transport, Lausanne
<http://www.t-l.ch/>

EPFL campus online map
<http://plan.epfl.ch>

Lausanne Tourisme & Convention Bureau
<http://www.lausanne-tourisme.ch>

Switzerland online map
<http://map.search.ch/index.en.html>