

Interactive maps of the ULB campuses

1. General presentation

This project aims at developing a platform hosting interactive maps of the main campuses of the ULB. These maps will be a convenient guide for students, staff and visitors helping them to reach our campuses, to find buildings or lectures halls and to locate the main facilities (e.g. bike racks, car parks, restaurants, sanitary facilities, etc.). These maps will also be very useful for disabled people allowing them to prepare their visit in advance by identifying accessible routes and facilities. The maps will be then integrated into the new website of the ULB.

This project is a unique opportunity to contribute directly to improving the quality of the experience on campus and to work towards a “smart campus”.

This project will be developed in collaboration with the Environment and Mobility Service of the ULB.

2. Examples

At this stage, our main sources of inspiration are the platforms of Université de Lausanne (UNIL) and Yale University.

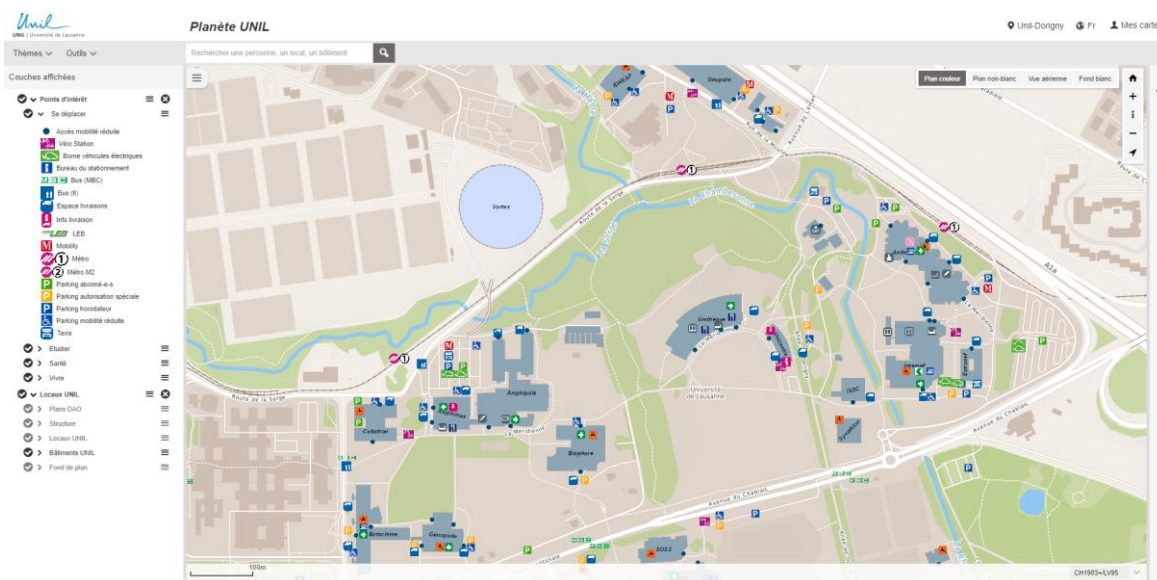


Figure 1. Interactive map of UNIL <https://planete.unil.ch/plan/>

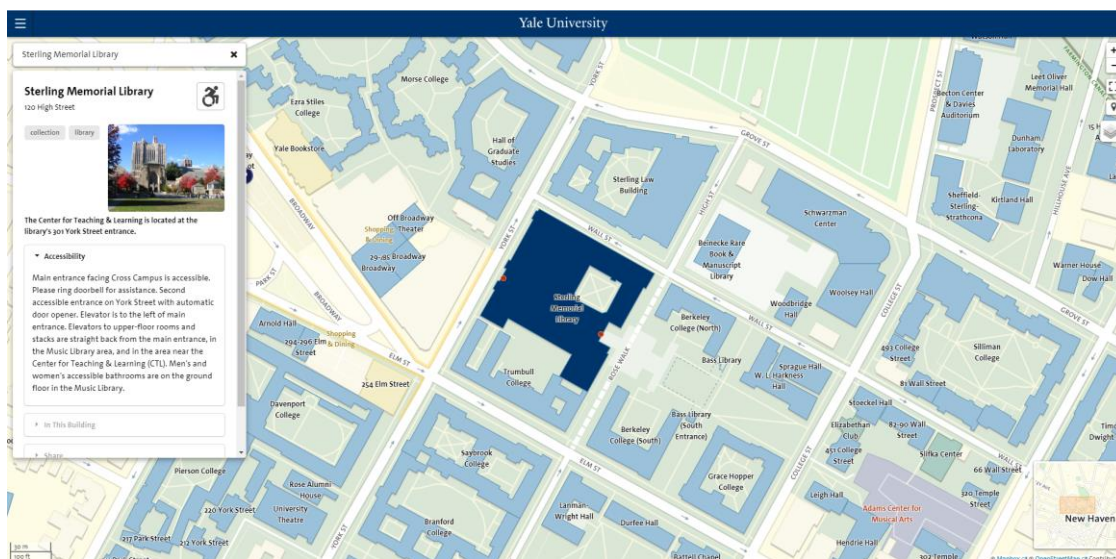


Figure 2. Interactive map of Yale <https://map.yale.edu/>

3. Specifications

Must have

- Interactive map for the Solbosch
- Background map from OpenStreetMap
- Searching tool (buildings, lecture halls, departments, etc.)
- Printing facility
- Sharing of a location via an URL or QR code
- Adaptable to all devices (laptops, smartphones, tablets)
- Taking into account accessible computing (i.e. accessibility of a computer system to all people, regardless of disability)
- Side bar allowing to select different layers (see Annex 1)
- Side panel appearing when clicking on a building with additional information (picture of the building, hosted services, gateway to Google Maps for route calculation, etc. – see Figure 3 as example)

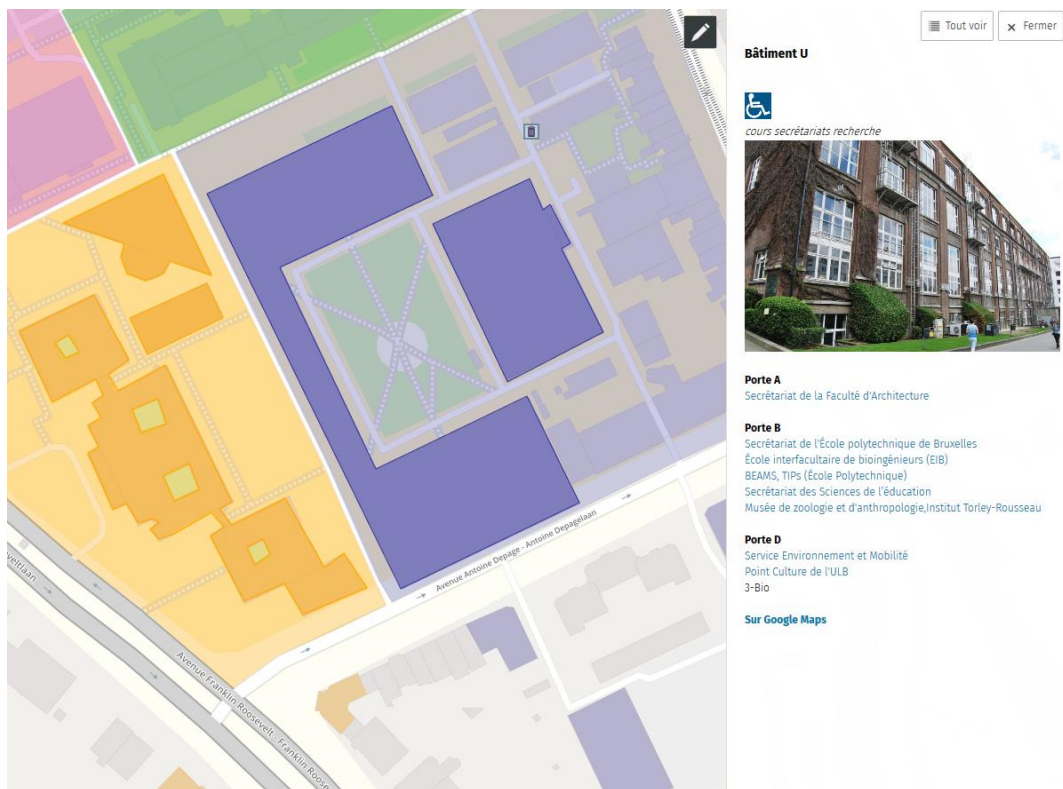


Figure 3. Example of a side panel for buildings

Nice to have

- Interactive maps for the other campuses (Plaine, Erasme, Gosselies, U-square)
- Indoor mapping (appearing when zooming)

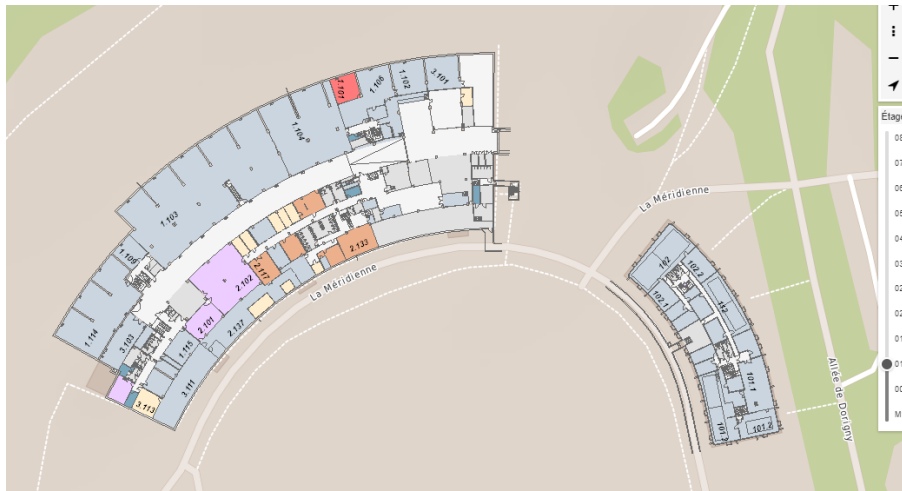


Figure 4. Example of an indoor map (with floors appearing on the side) (<https://planete.unil.ch/plan/>)

- Indoor wayfinding (with an option for disabled people)

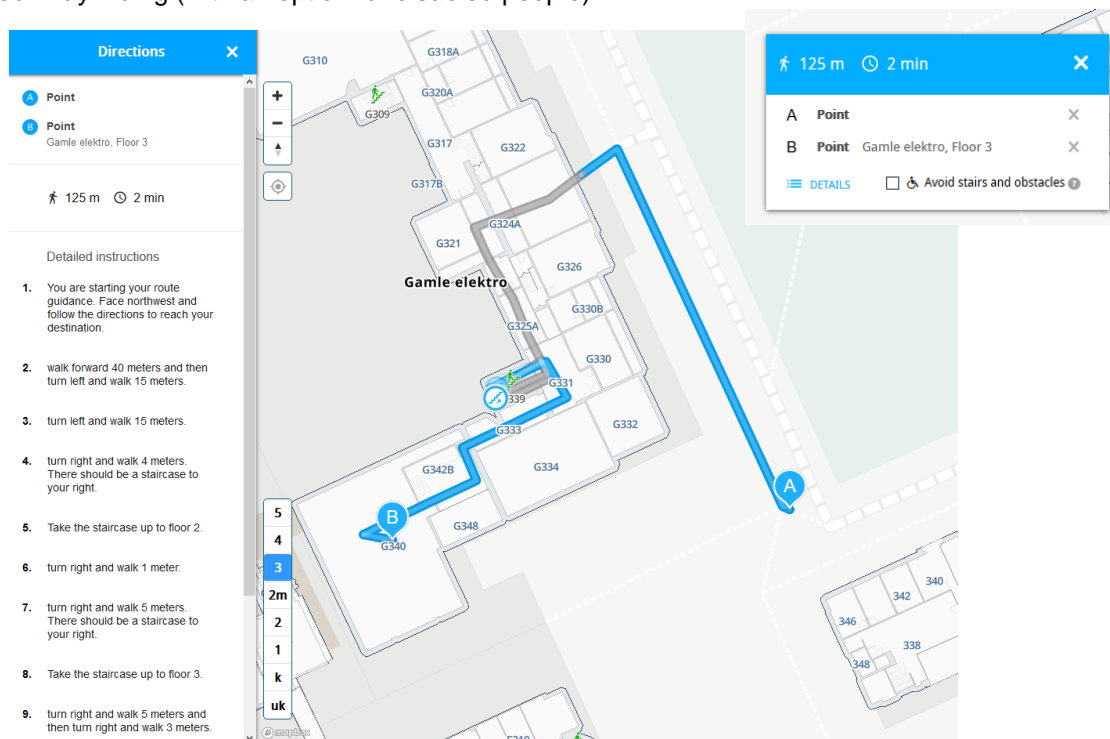


Figure 5. Example of indoor wayfinding (<https://www.mazemap.com/>)

4. Data

Data will be provided by the Environment and Mobility Service of the ULB.

5. Requirements

The student must have a good knowledge of a programming (PHP, Java, Python, etc.) and database language (MySQL, MariaDB, PostgreSQL/PostGIS, etc.). The student is free to choose the languages he finds the most suitable for the project in accordance with his supervisor. ULB will provide a virtual machine to run the platform.

6. Working language

English/French

7. Contact

Esteban Zimanyi

Annex 1: Layers data

Layers	Description	Data format
Buildings		
Buildings	Outline of the buildings	Maps - see project SIGNA 1
Indoor	Indoop maps	Autocad maps
Lecture halls		
Lecture halls	Localisation of main lecture halls	Excel file
Transports		
Entrances	Localisation of entrances	layer .kml ou .kmz
Public transport	Localisation of public transport stations and lines	layer .kml ou .kmz
Bike sharing service	Localisation of Villo ! stations	layer.kml ou .kmz
Car sharing service	Localisation of Cambio, Zen Car, etc. stations	layer.kml ou .kmz
Secure cycle parking	Localisation secure cycle parking	layer.kml ou .kmz
Bike racks	Localisation of bike racks	layer.kml ou .kmz
Car parks	Localisation of car parks	layer.kml ou .kmz
Pedestrian roads	Pedestrian roads on campuses	layer.kml ou .kmz
Persons with reduced mobility		
Accessible entrances	Localisation of accessible entrances of main buildings	Solbosch : layer.kml ou .kmz
Accessible roads	Accessible roads on campuses	Solbosch : layer .kml ou .kmz
Accessible car parks	Localisation of accessible parking spots	Solbosch : layer .kml ou .kmz
Accessible sanitary facilities	Localisation of accessible sanitary facilities	Solbosch : layer.kml ou .kmz

Accessible lifts	Localisation of accessible lifts	Solbosch : couche .kml ou .kmz
Accessible rooms	Localisation of main accessible rooms	Not available yet
Delivery		
Delivery places	Localisation of delivery places	layer .kml ou .kmz
Other possible layers		
All sanitary facilities	Localisation of all sanitary facilities	Map
Water coolers	Localisation of water coolers	Map
Emergency	Localisation of emergency routes, defibrillators, etc.	Map
Shops and services	Localisation of shops and services (restaurants, bank, museum, etc.)	List
Parcours arbres	Parcours arbres	Map
Waste sorting bins	Localisation of waste sorting bins	Solbosch : layer .kml ou .kmz