



Learning center

the Lausanne example

ToC

- **Campus development**
- **EPFL 2010 – A vision for the library**
- **Program and competition**
- **Overview of the 12 projects**
- **Viewpoint of technical panel**
- **Challenges of a « unique » project**
- **Project development and planning**

Campus development

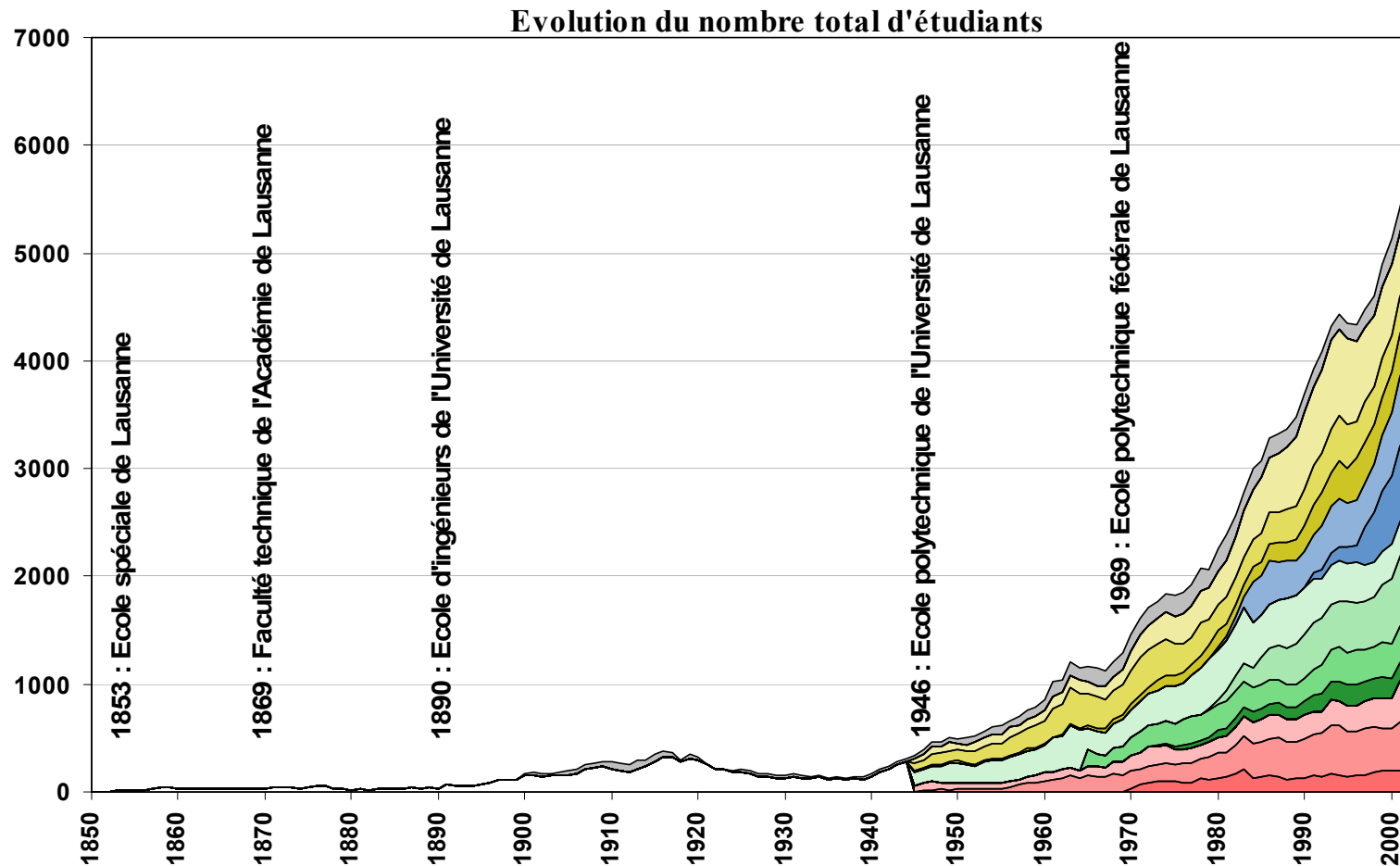
general view



LIBER Architecture Group Seminar - Utrecht, The Netherlands - 22 / 24 March 2006
Session 8. Processes of Architecture competition : Learning Center, the Lausanne example
David Aymonin, Marie-Françoise Bisbrouck, Nicolas Joye, Mirjana Rittmeyer

Campus development

EPFL history



2004:

6'328 students
3'189 employees
206 professors

Campus development

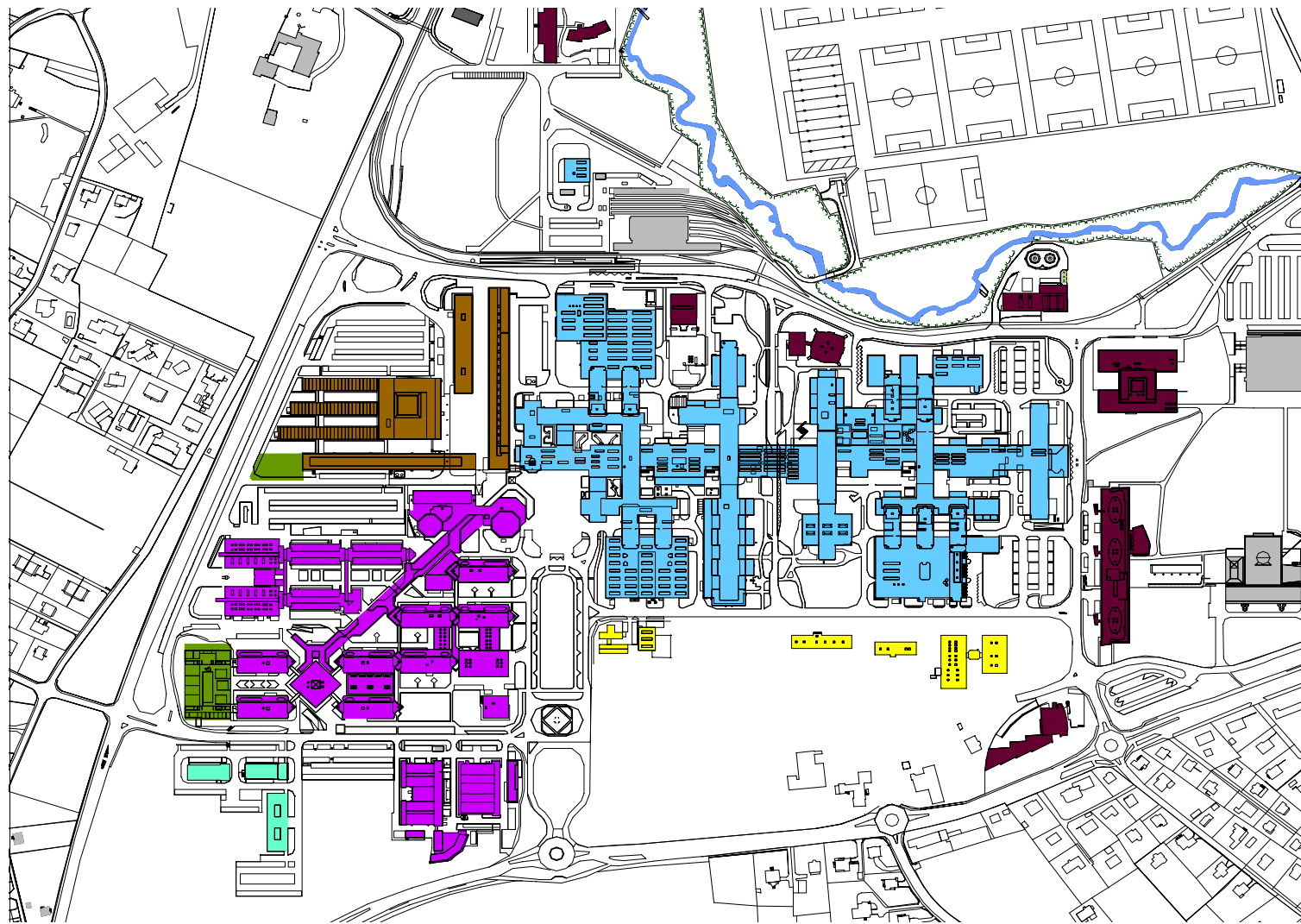
epfl – university of Lausanne







- EPFL
- Chemistry
- UNIL
- Sport
- Reserve for extensions

Campus development

realisation phases



-  1st phase :
1972 - 1984
-  2nd phase :
1985 - 1995
-  3rd phase :
1995 - 2003 QN
-  Science Park of
EPFL campus

Working area:
165'000 m²

Campus area:
515'000 m²

Campus development

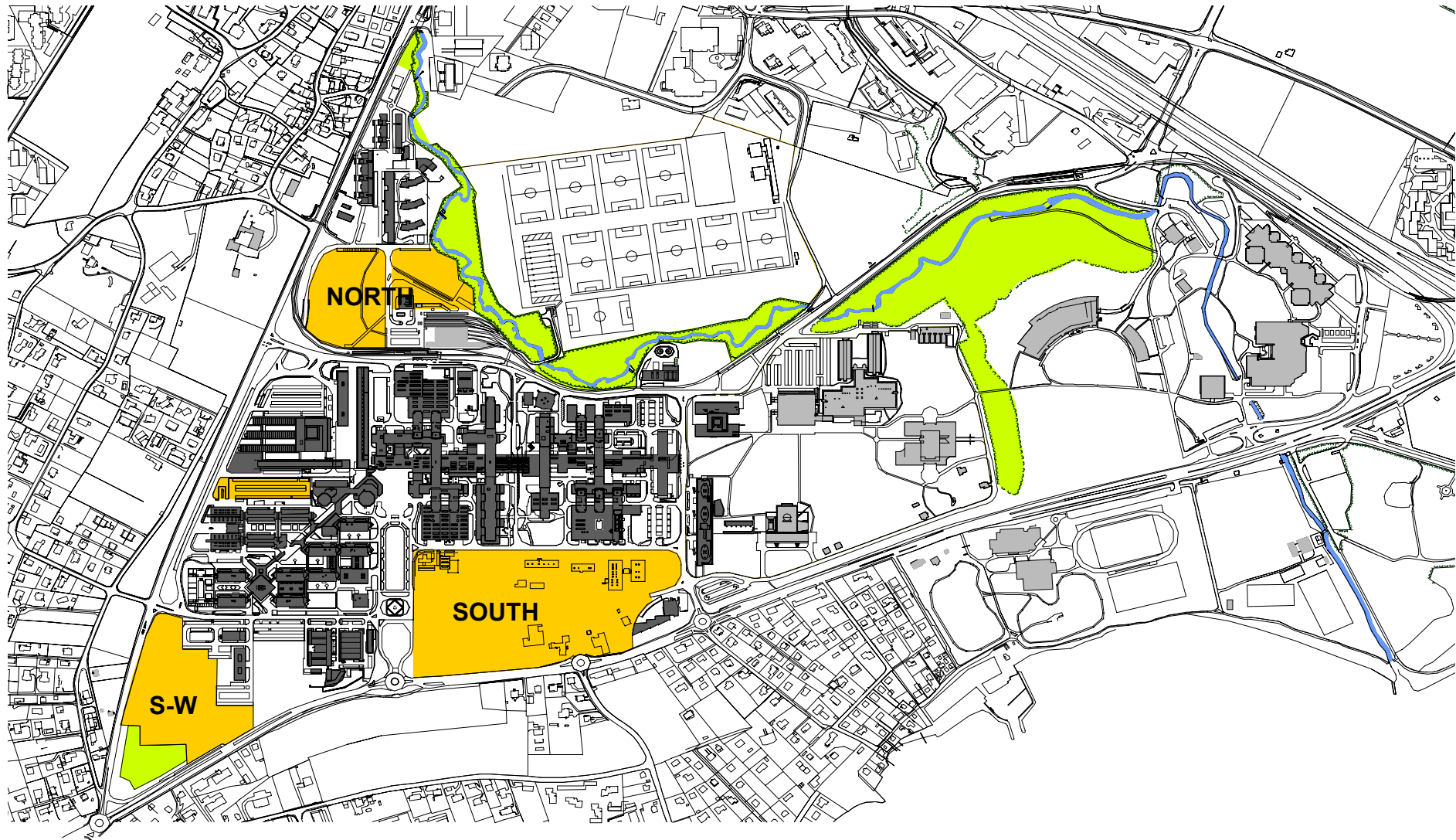
faculties



- Administration, teaching and services
- STI Engineering Sciences and Techniques
- ENAC Architecture, Civil and Environmental Engineering
- I&C Computer and Communication Sciences
- SB Basic Sciences
- SV Life sciences
- College of Humanities

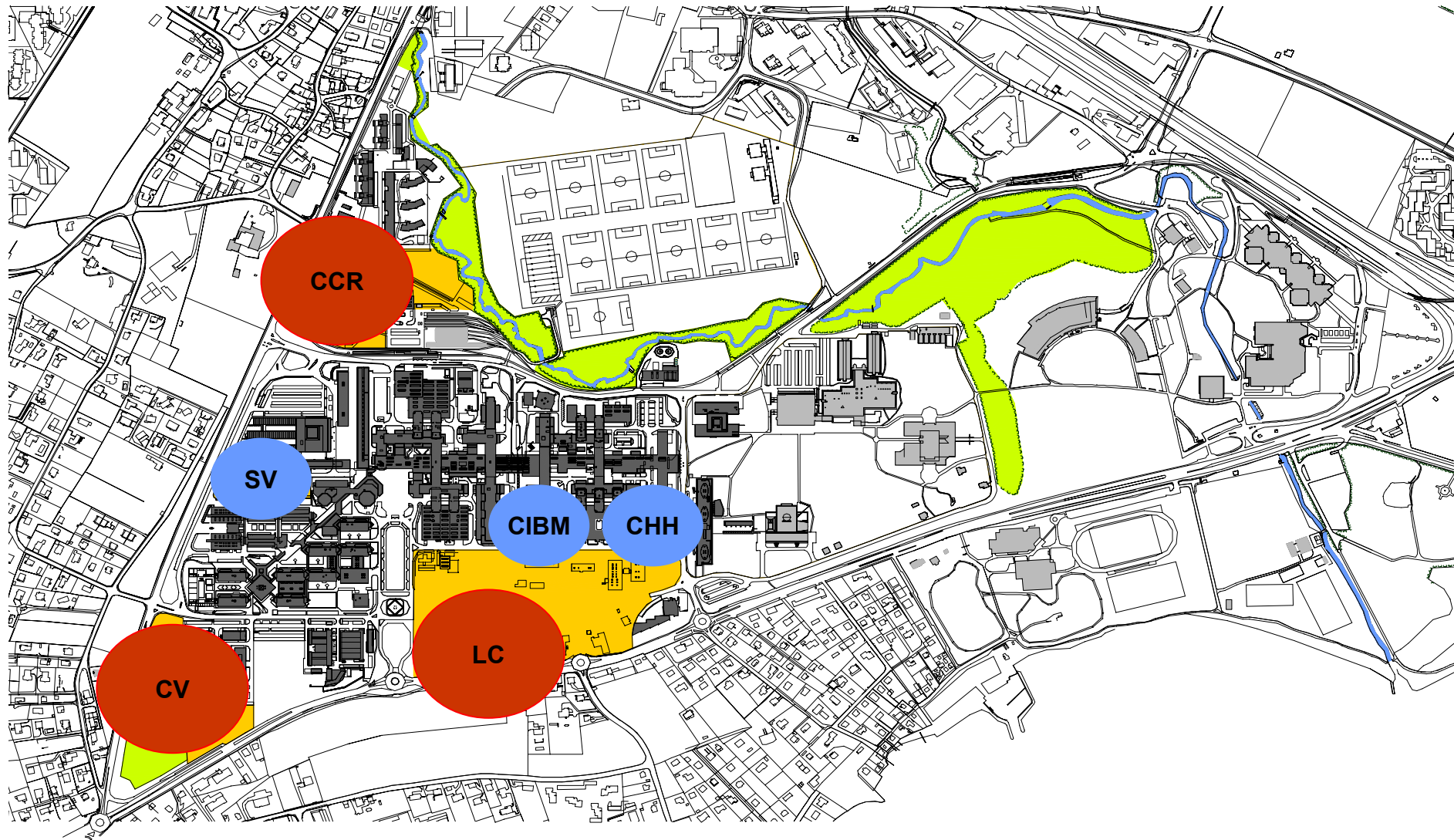
Campus development

extensions



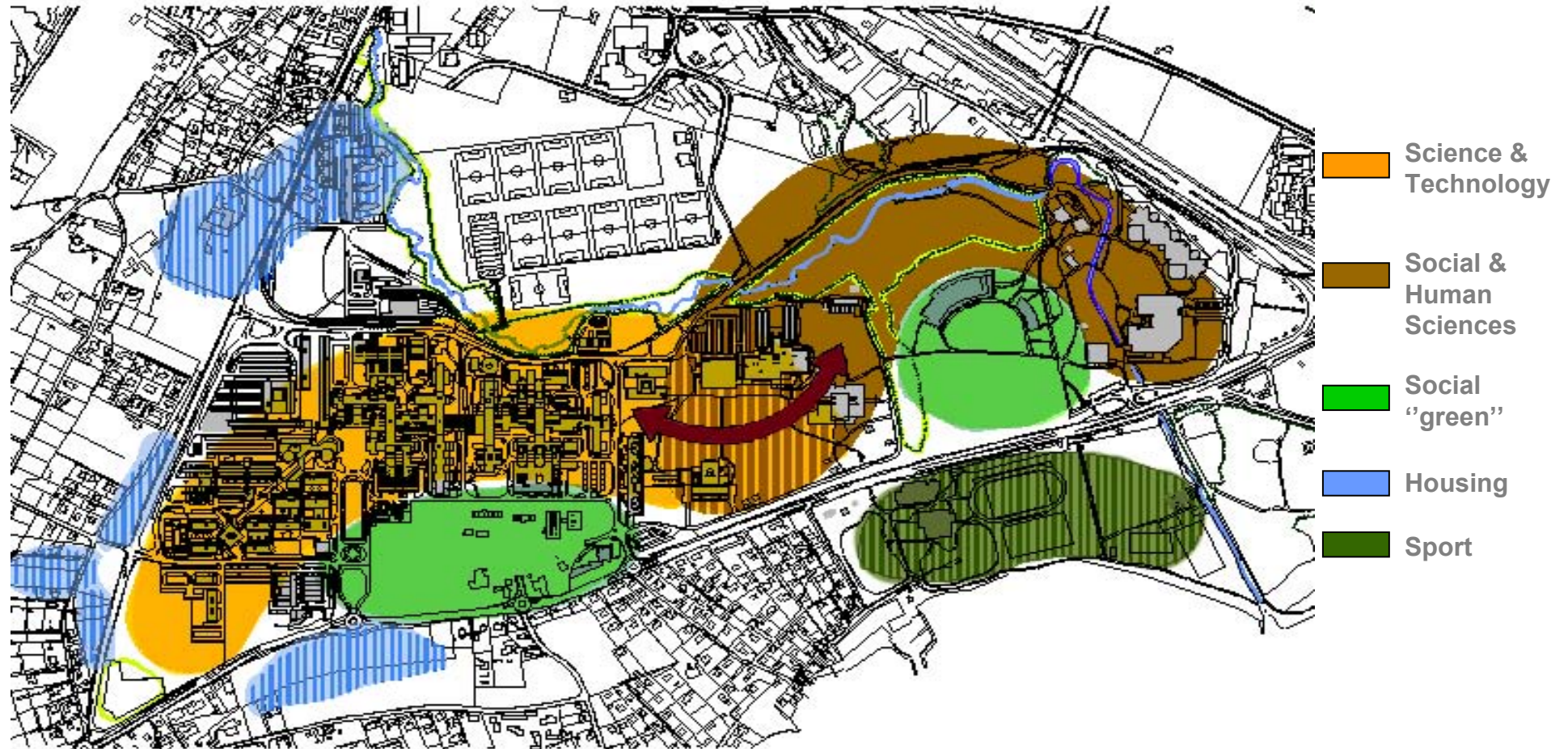
Campus development

new projects



Campus development

“double banana”



EPFL 2010 – Vision

Context

A technical university, training engineers at master and PHD levels.

Keen to be one of the best of the world by its research outputs

Keen to attract the best international students by its high quality active pedagogy

One motto : make students the Entrepreneurs of their knowledge

in 2010

- 7000 students : 4000 Bachelor, 2000 Master, 1000 PhD
- 2000 scientific staff

Library « goods »

- 50 FTE librarians
- 500 000 research books, 15 000 course books, either print or electronic
- 6000 electronic journals, 100 databases, 2000 ancient and precious books
- Acquisition means : 2 Mios Euros / year

Library 2010 : the President wants to build the library of the future.
It must become the heart of the campus, living 24 hours a day.

Library and campus 2010

Learning Center

- Multimedia library
- Working environment for students
- Students associations, carrer center
- Language training center
- Science shop
- Culture and exhibitions
- Help desk, door to the campus
- Café, cafeteria(s), restaurant(s)
- Book/Culture shop, ticket corner
- Pedagogical and teaching center
- University press

Campus

- Branch libraries (disappearing)
- Group Work rooms
- Cultural life and events
- Relaxing areas, music spaces
- Concert hall 1000 seats
- Grocery, Bank, Chemist, Post office
- Guest house
- Students housing
- Diverse catering means (cafeterias, restaurants, stands)

Initial architectural program

1. Library / Scientific information services

Information desk, multimedia library, research collection, 700 student working places, 40 librarian working places and offices : **6'160 m²**

2. Training and teaching

Training rooms, CRAFT, language center : **1'150 m²**

3. Life

Main hall, help desk, café, restaurants (self-service and up-market), alumni and student lounge, shop : **1'875 m²**

4. Culture

Exhibitions, multipurpose hall, bookshop, university press : **1'690 m²**

5. Technical spaces

Delivery service, EPFL archives, technical rooms, car park : **3'500 m²**

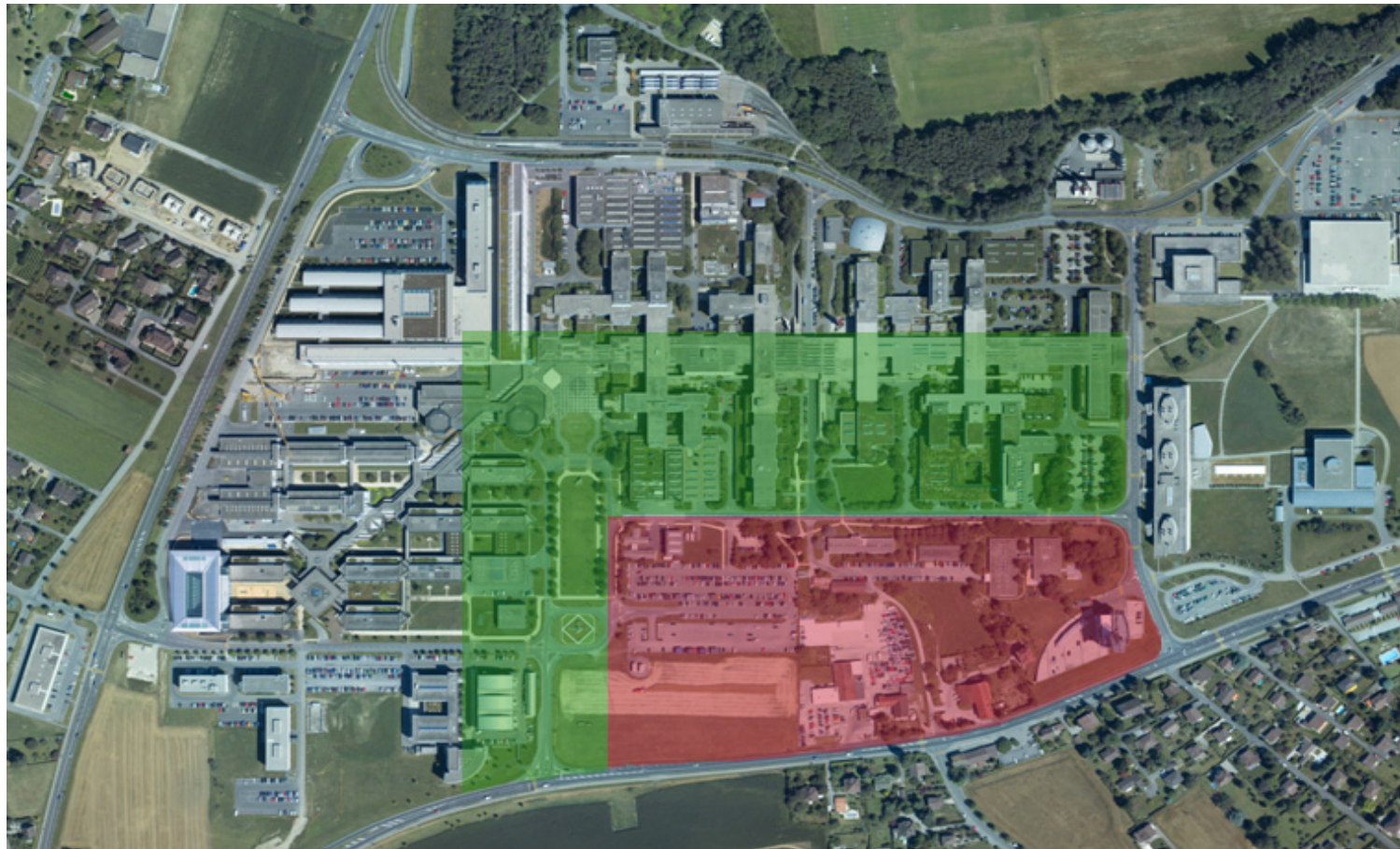
Program and competition

competition process

- EPFL launches in Spring 2004 a 2-stage architecture competition, with pre-qualification procedure.
- The competition was worldwide open to architects, announced in the specialized publications :
189 submissions received
- The Experts committee selected 12 groups, based on their international reputation and experience in library projects and developments, and gave them a mandate for a parallel study commission
- Assessment between the 22th and 24th Novembre 2004

Program and competition

competition objects



-  Extended competition site
-  Competition site

Program and competition

architects selection

- Abalos & Herreros, Madrid, Spain
- Ateliers Jean Nouvel, Paris, France
- Diller Scofidio + Renfro, New York, USA
- Herzog & De Meuron, Basel, Switzerland
- Livio Vacchini - Eloisa Vacchini, Locarno, Switzerland
- Mecanoo Architecten, Delft, The Netherlands
- OMA Stadebouw BL, Rotterdam, The Netherlands
- Pierre Du Besset & Dominique Lyon, Paris, France
- Sanaa, Kazuyo Sejima + Ryue Nishizawa, Tokyo, Japan
- Valerio Olgiati, Zurich, Switzerland
- Xaveer de Geyter, Brussels, Belgium
- Zaha Hadid, London, United Kingdom

Program and competition

experts committee

EPFL

- Patrick Aebischer, President of EPFL
- Francis-Luc Perret, EPFL Vice President for Planning and Logistics
- David Aymonin, head of the EPFL central library
- Patrick Berger, architect, EPFL professor
- Inès Lamunière, architect, EPFL professor
- Martin Steinmann, architect, EPFL professor
- Jacques Lucan, architect, EPFL professor

External

- Daniel Borel, President of Logitech International
- David Chipperfield, architect, London
- Mike Guyer, architect, Zurich
- Jeffrey Huang, architect, Harvard University professor
- Charles Kleiber, Secretary of State for Research, Berne
- Anne Lacaton, architect, Paris
- Brigitte Shim, architect & University of Toronto professor

Program and competition

specialists

Library Science :

- Mme Marie-Françoise Bisbrouck, head of the Service Commun de la Documentation, Paris-Sorbonne University, France
- M. Mel Collier, former head of the University Library, Tilburg, The Netherlands

Pedagogy :

- M. Pierre Dillenbourg, EPFL professor

Building Energy:

- M. Pierre Chuard, EPFL professor

Economic Control :

- SGC, Geneva

Overview of the 12 projects

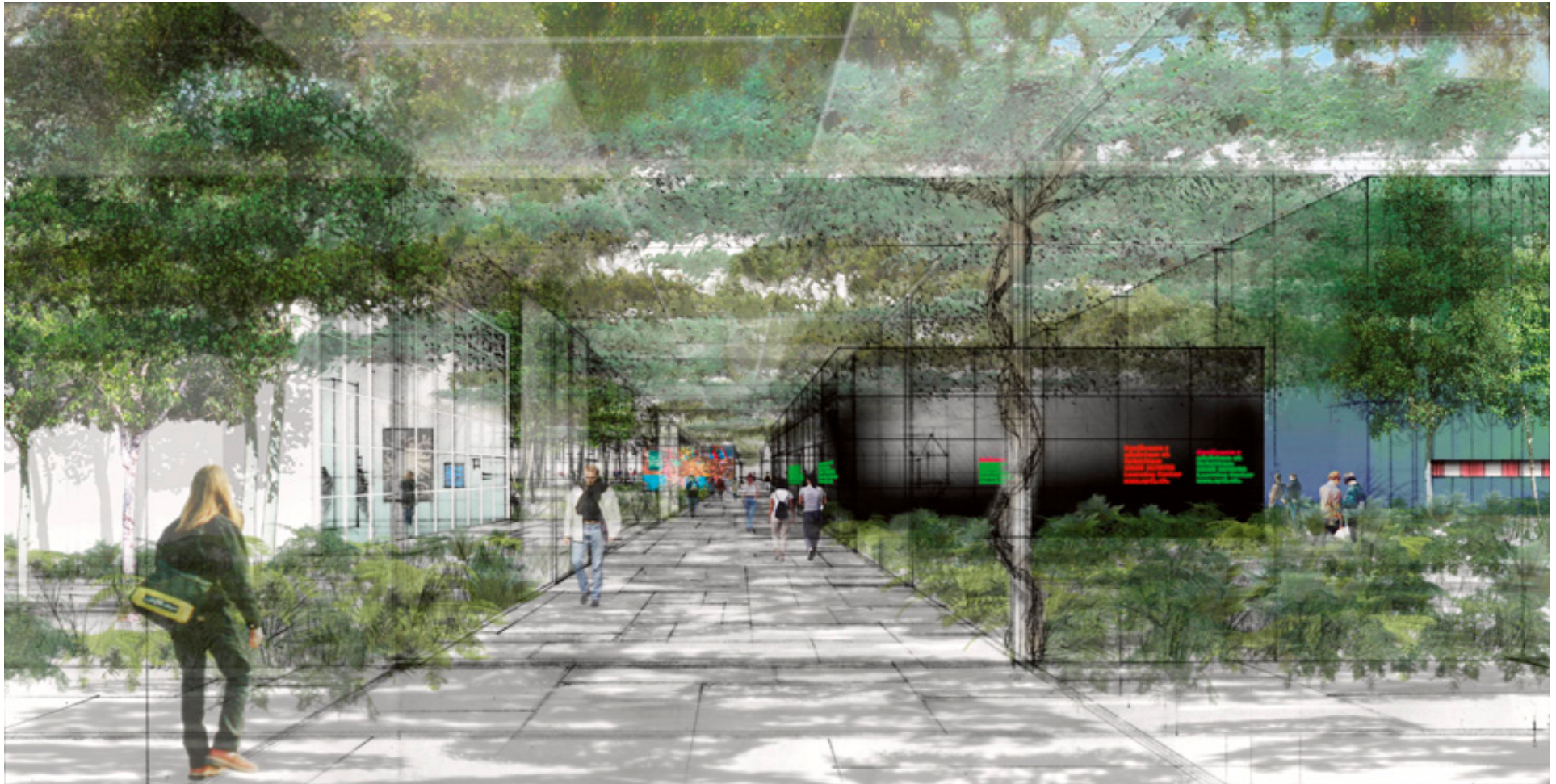
Evaluation criteria

- Interpretation of the subject, respecting the competition programme
- Insertion in the site and quality of connections with EPFL buildings and surroundings
- Quality of external spaces and their relationship with built elements
- Quality of internal spaces and spatial organisation
- Flexibility of layout and functional qualities
- General economy and rationality of project
- Energy performances of the project assessed from the sustainable development angle

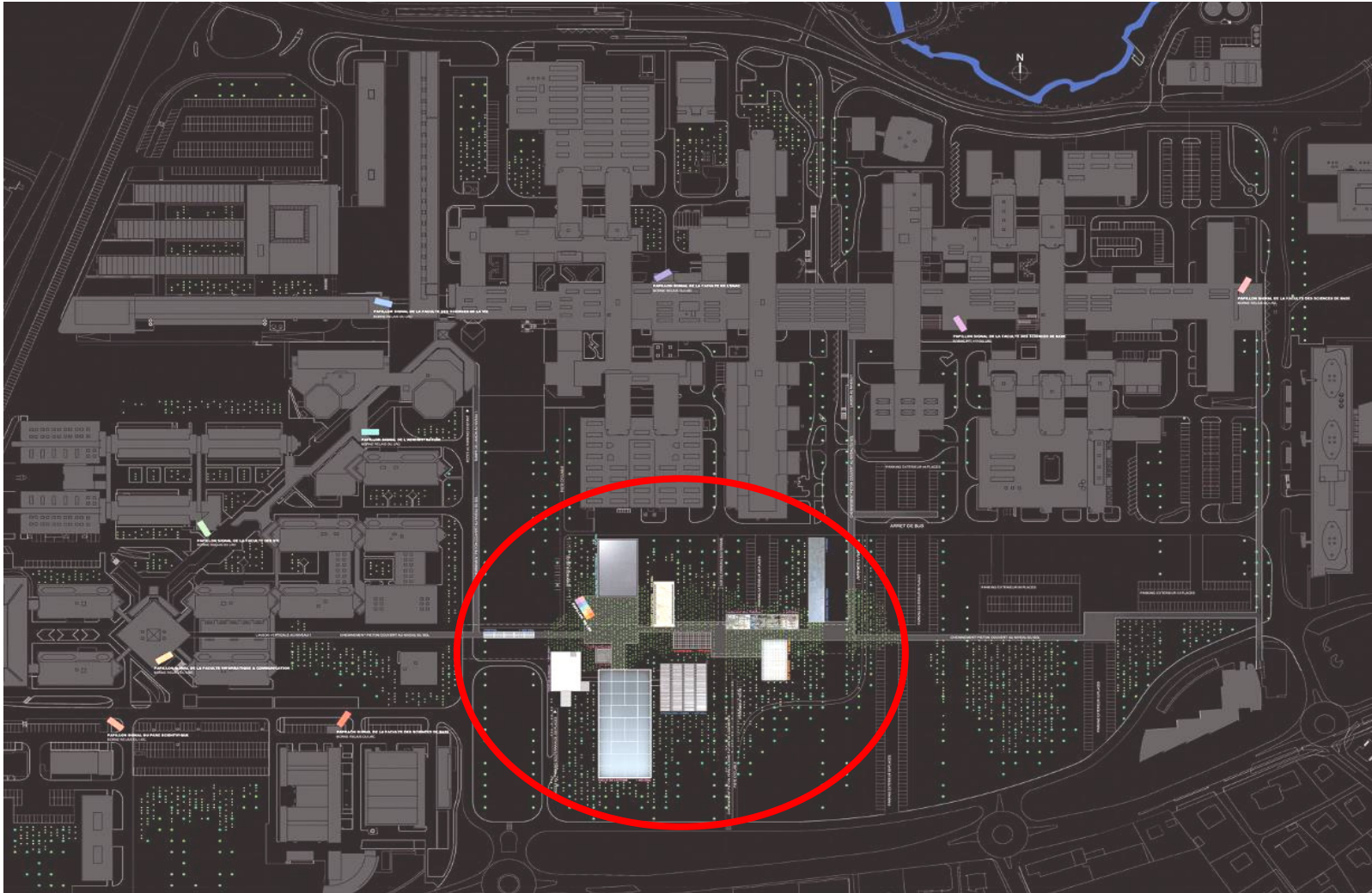
Abalos & Herreros, Madrid



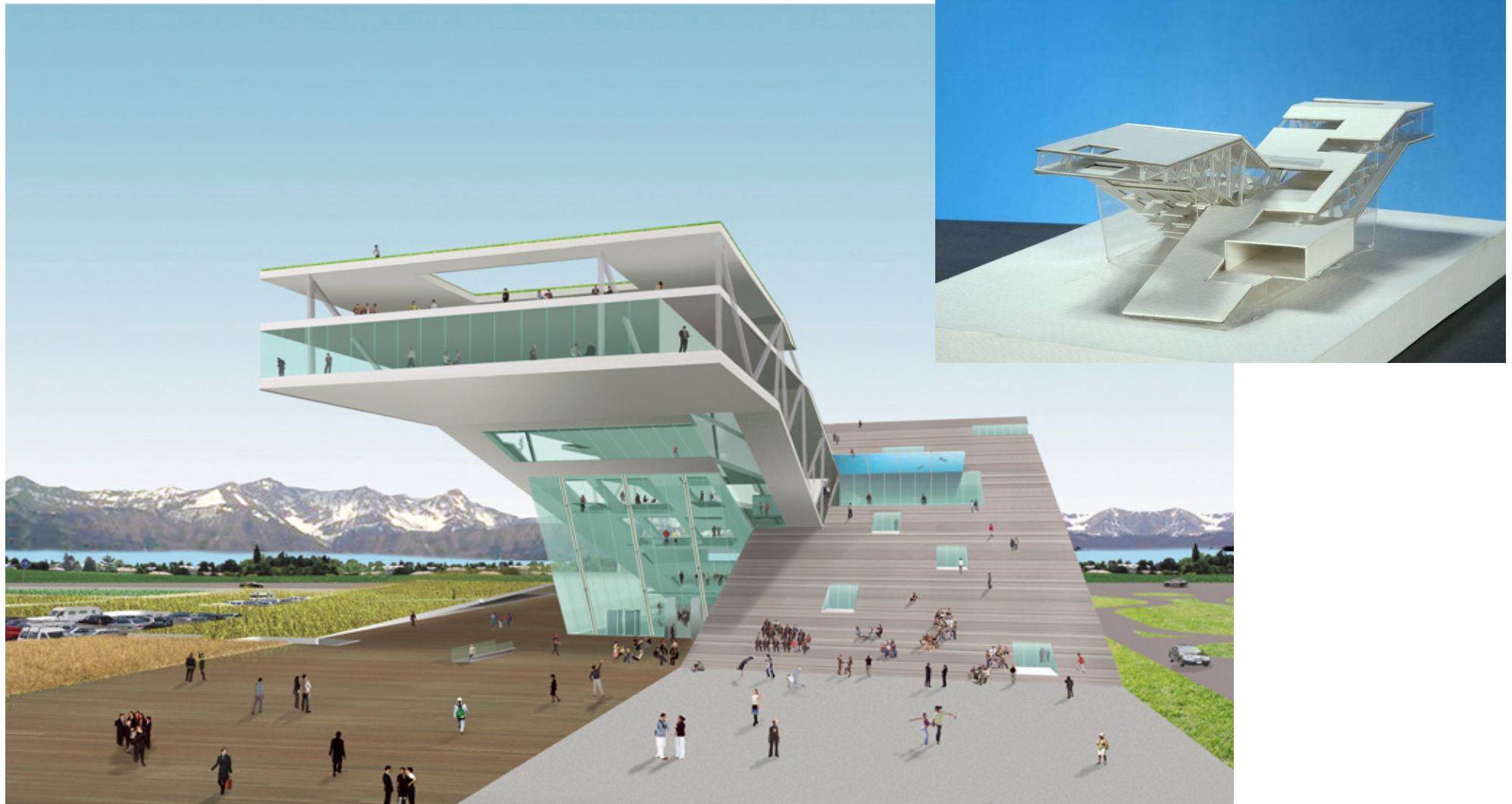
Ateliers Jean Nouvel, Paris



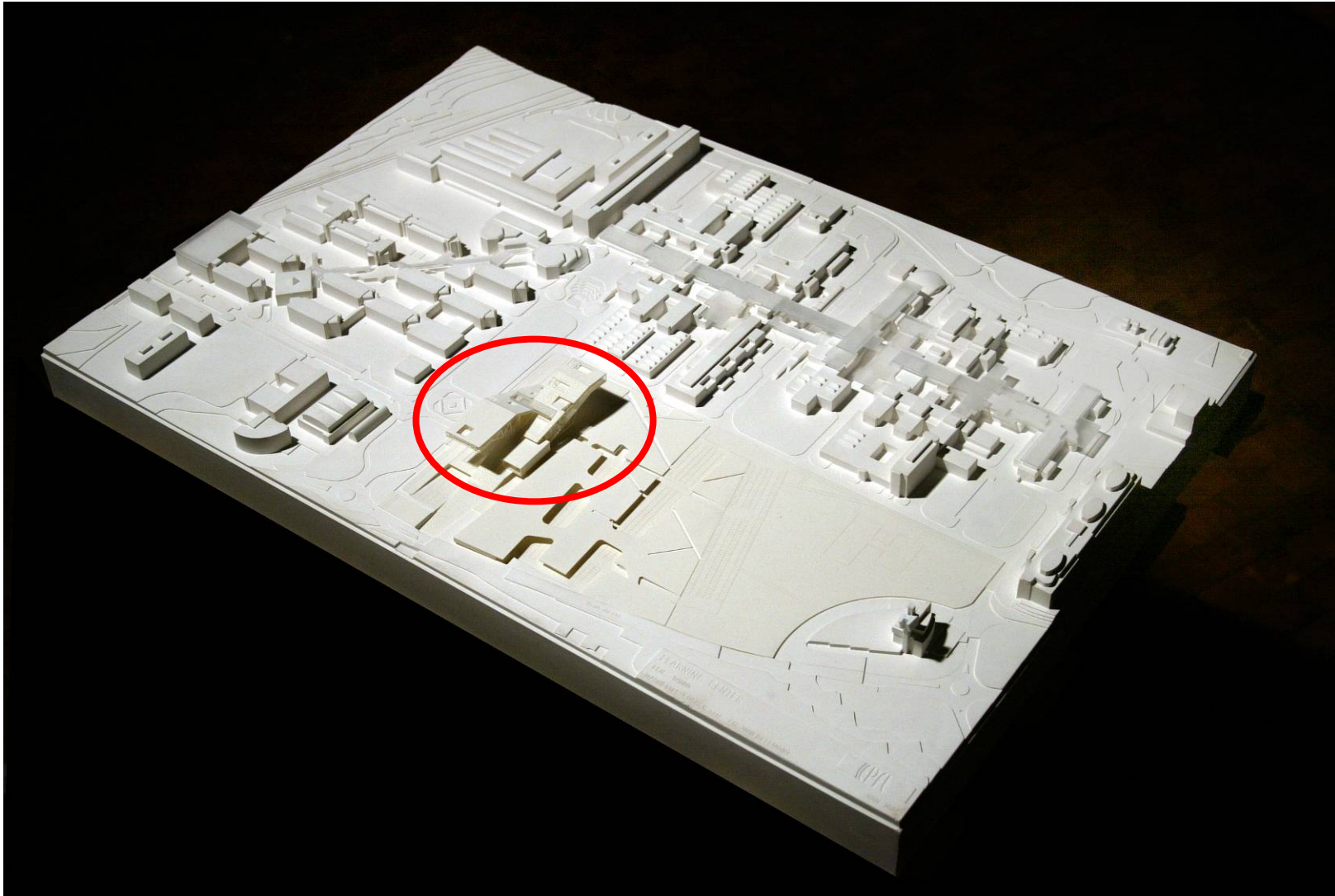
Ateliers Jean Nouvel, Paris



Diller Scofidio + Renfro, New-York



Diller Scofidio + Renfro, New-York



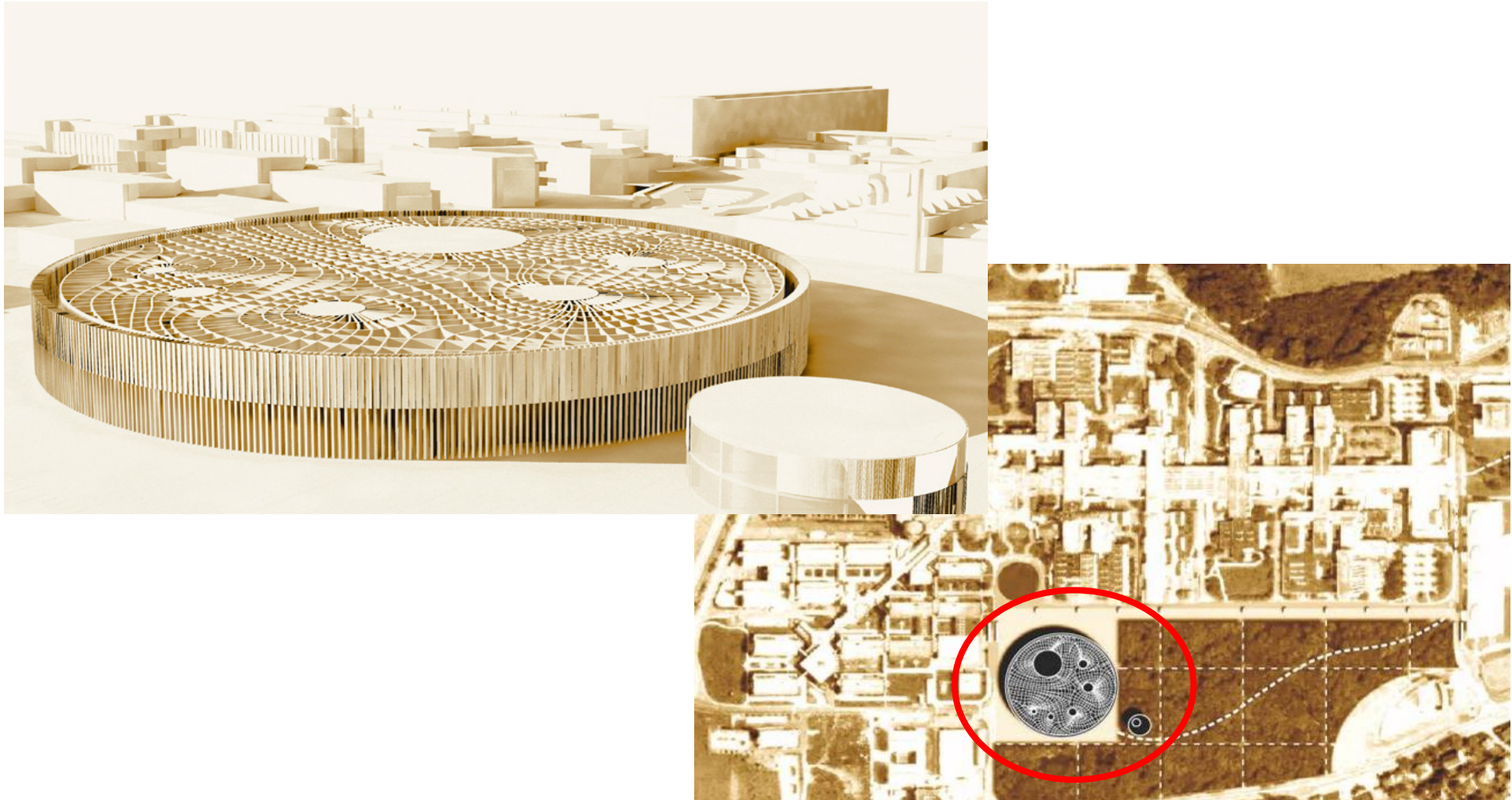
Herzog & Demeuron, Basel



Herzog & Demeuron, Basel



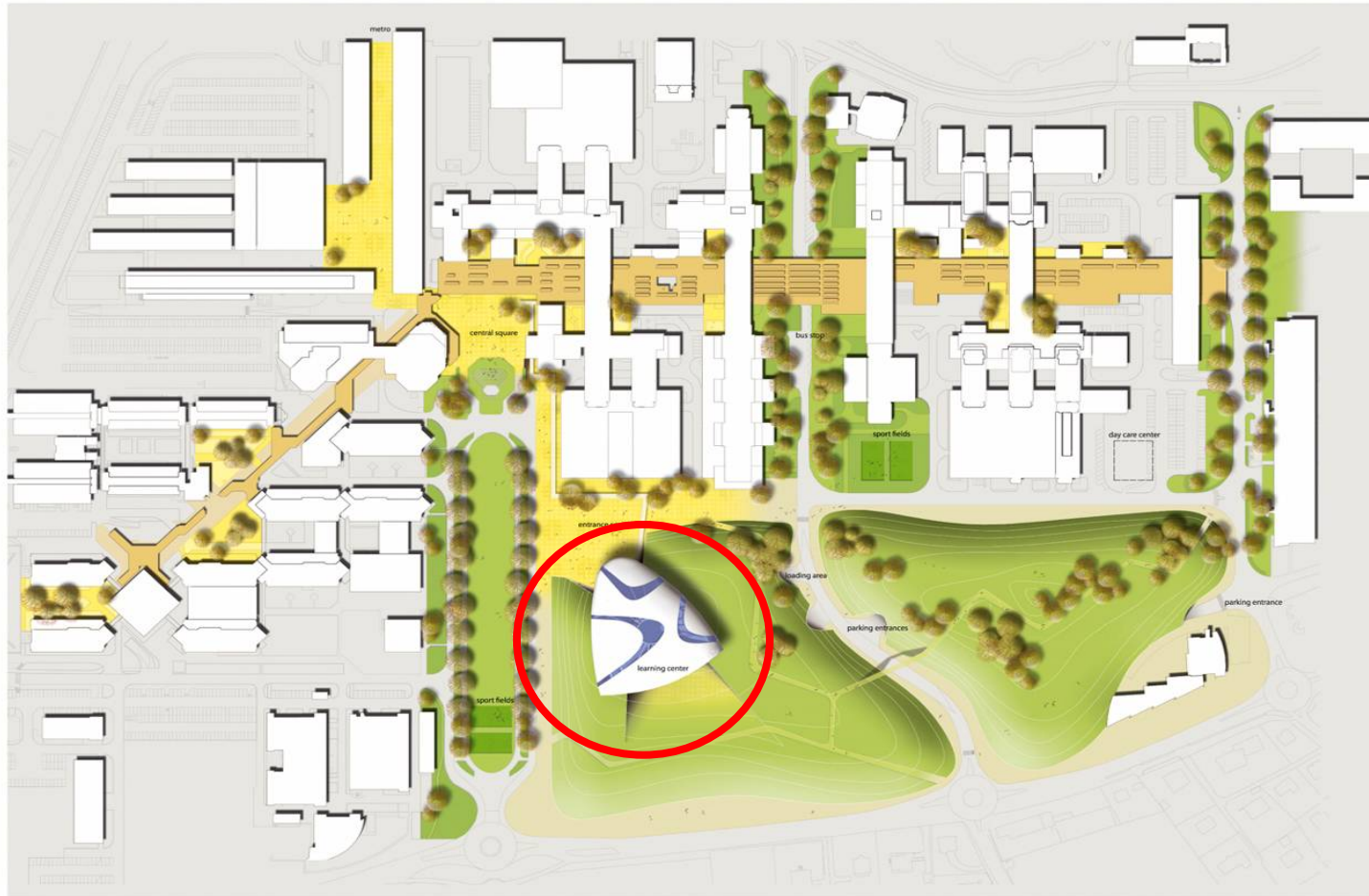
Livio + Eloisa Vacchini, Locarno



Mecanoo Architecten, Delft



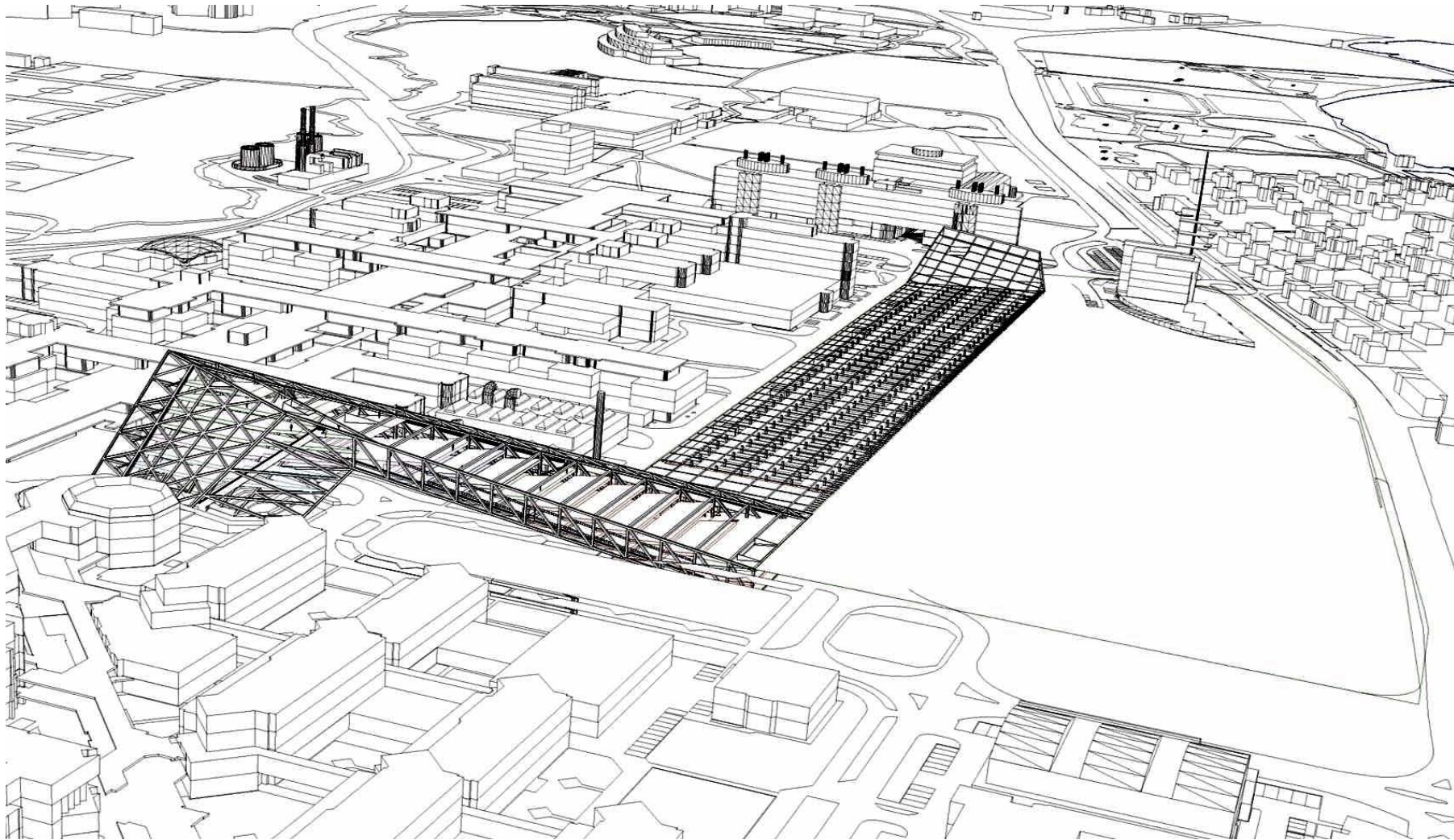
Mecanoo Architecten, Delft



OMA Stadbouw BL, Rotterdam



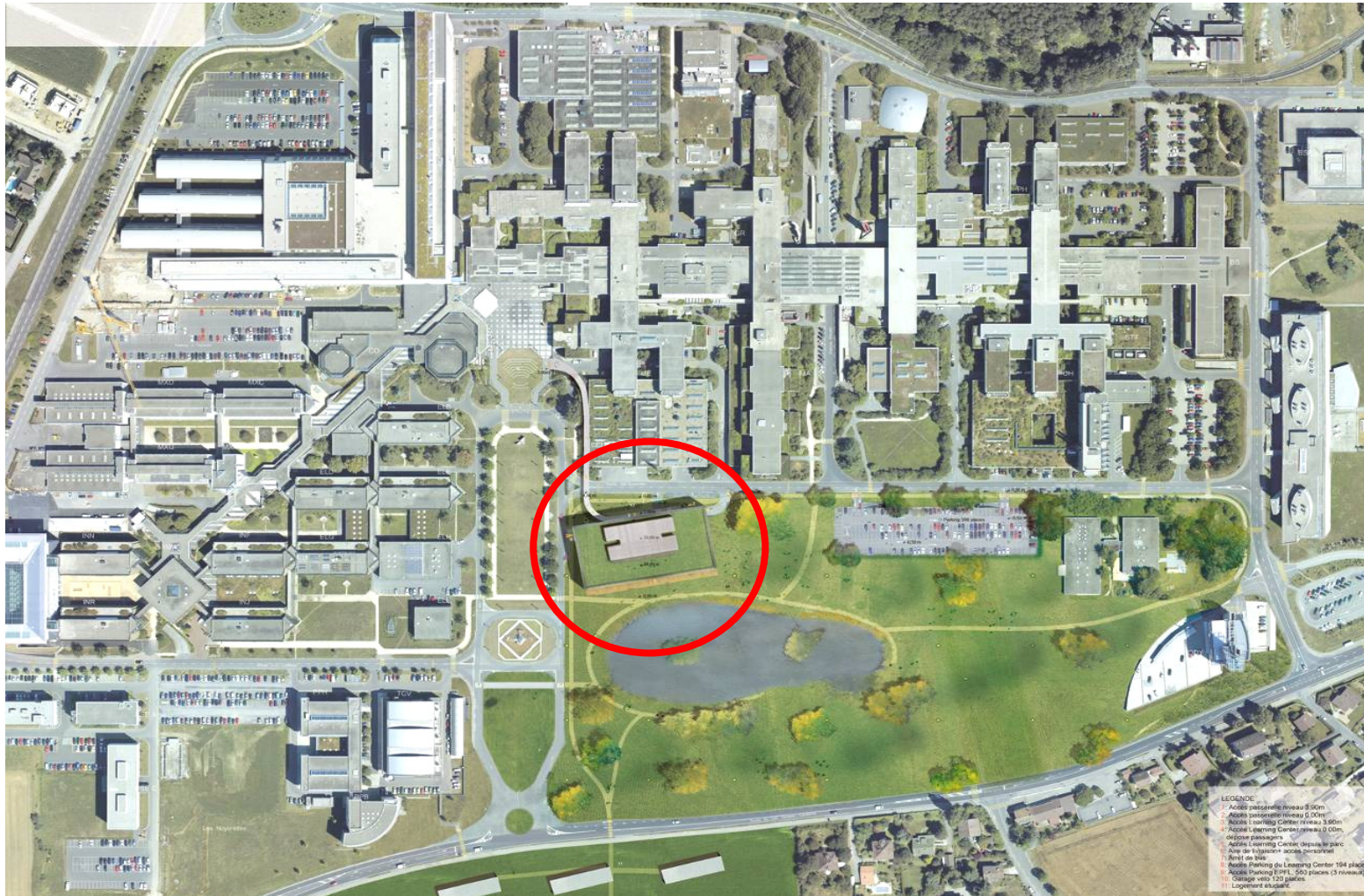
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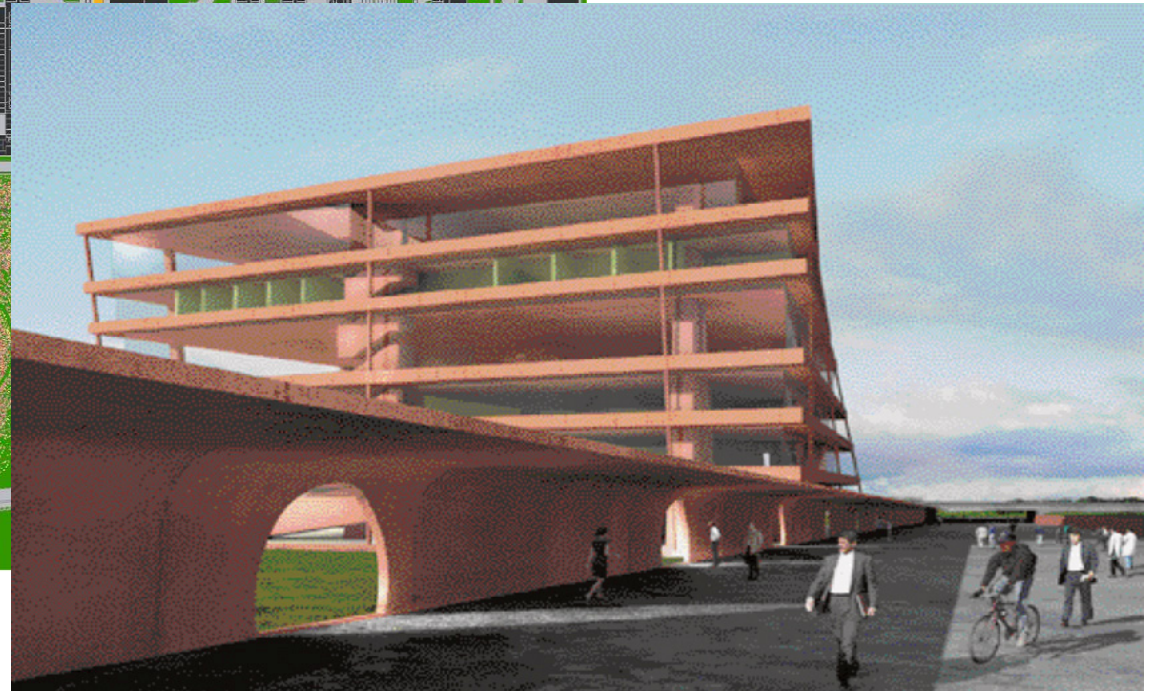
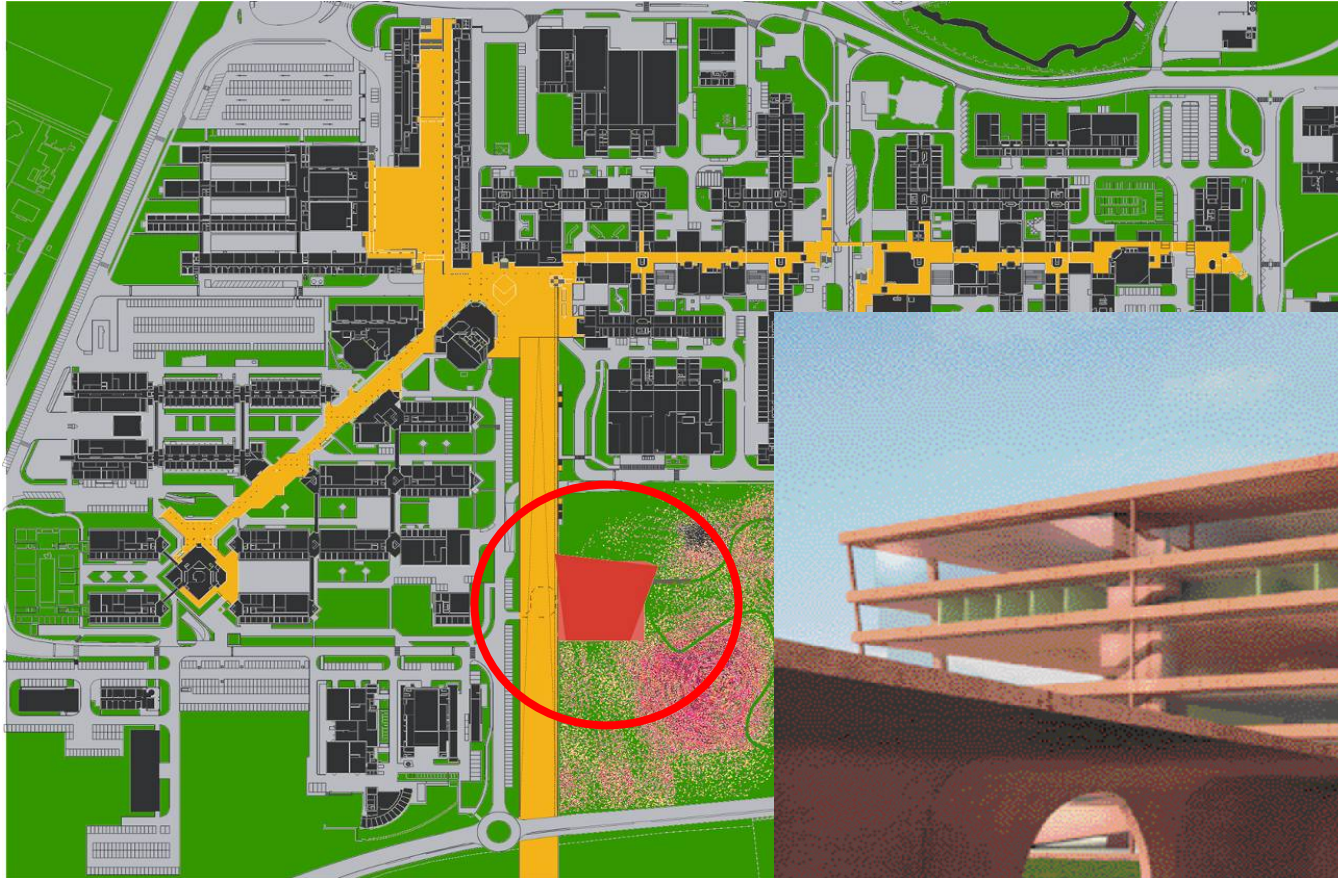
Pierre Du Besset & Dominique Lyon, Paris



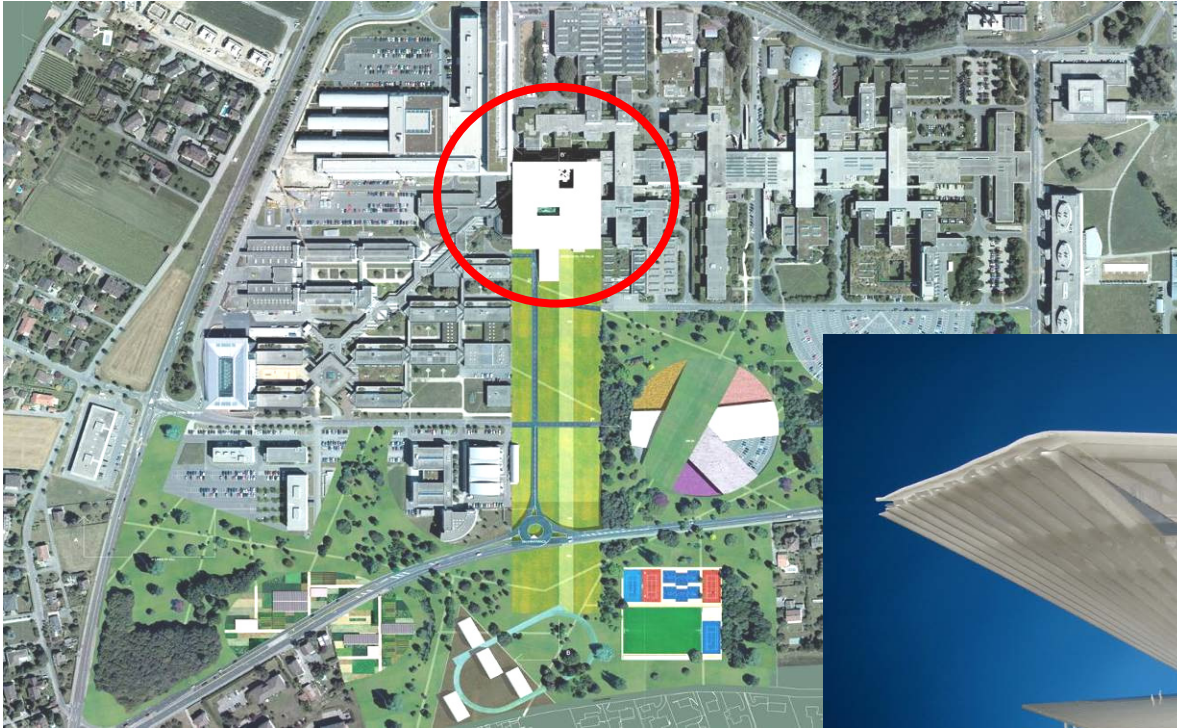
Pierre Du Besset & Dominique Lyon, Paris



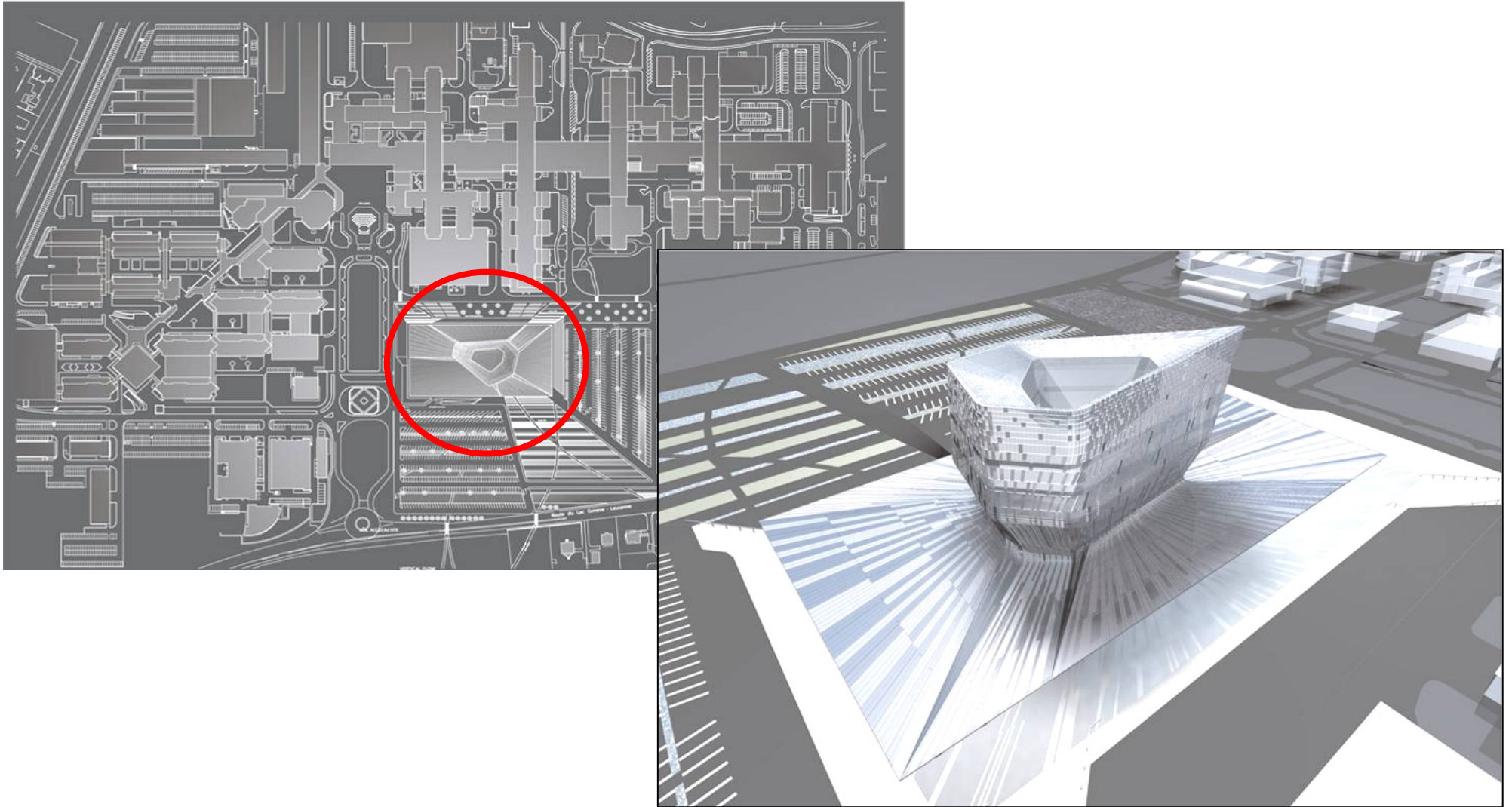
Valerio Olgiati, Zurich



Xaveer De Geyter, Bruxelles

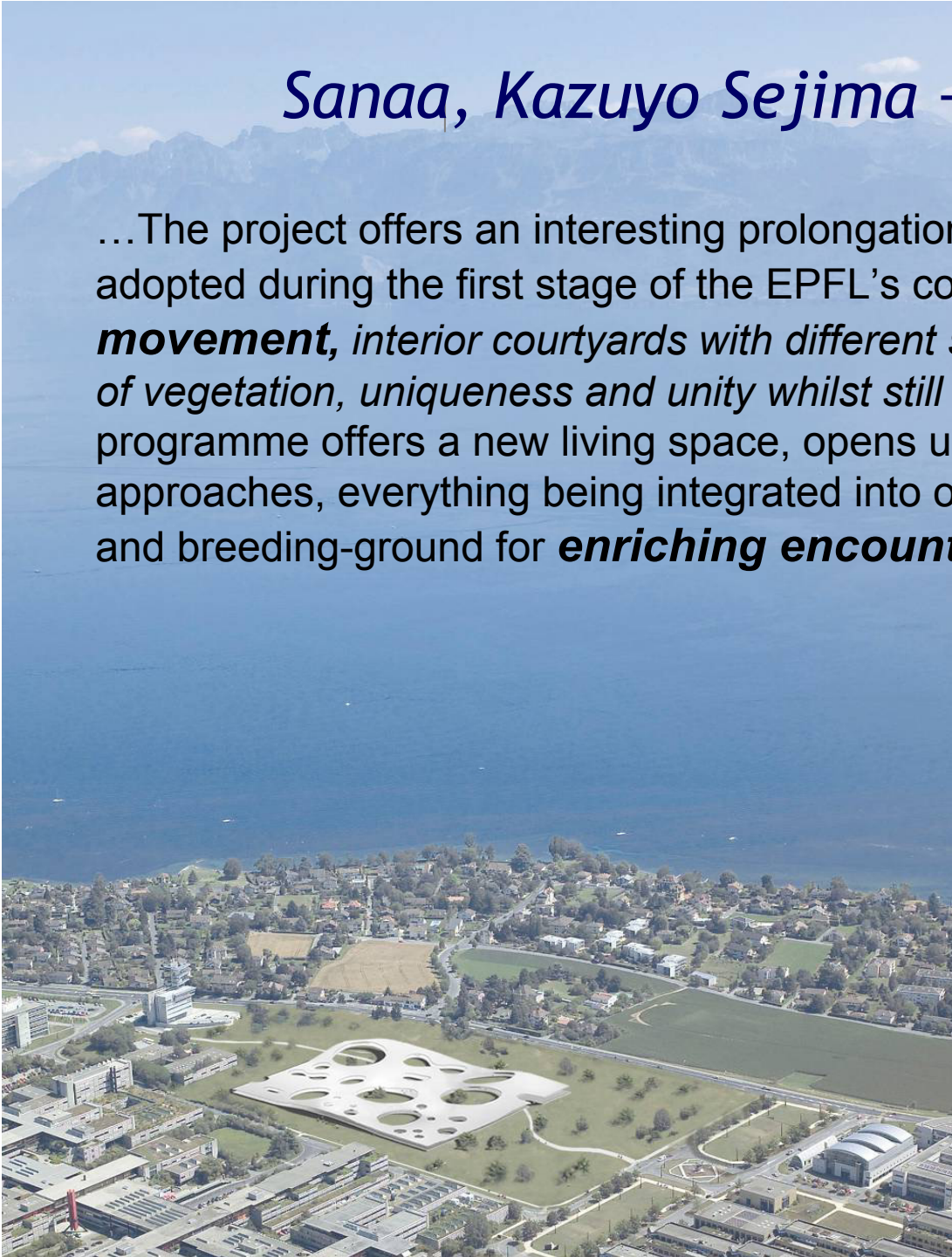


Zaha Hadid, London

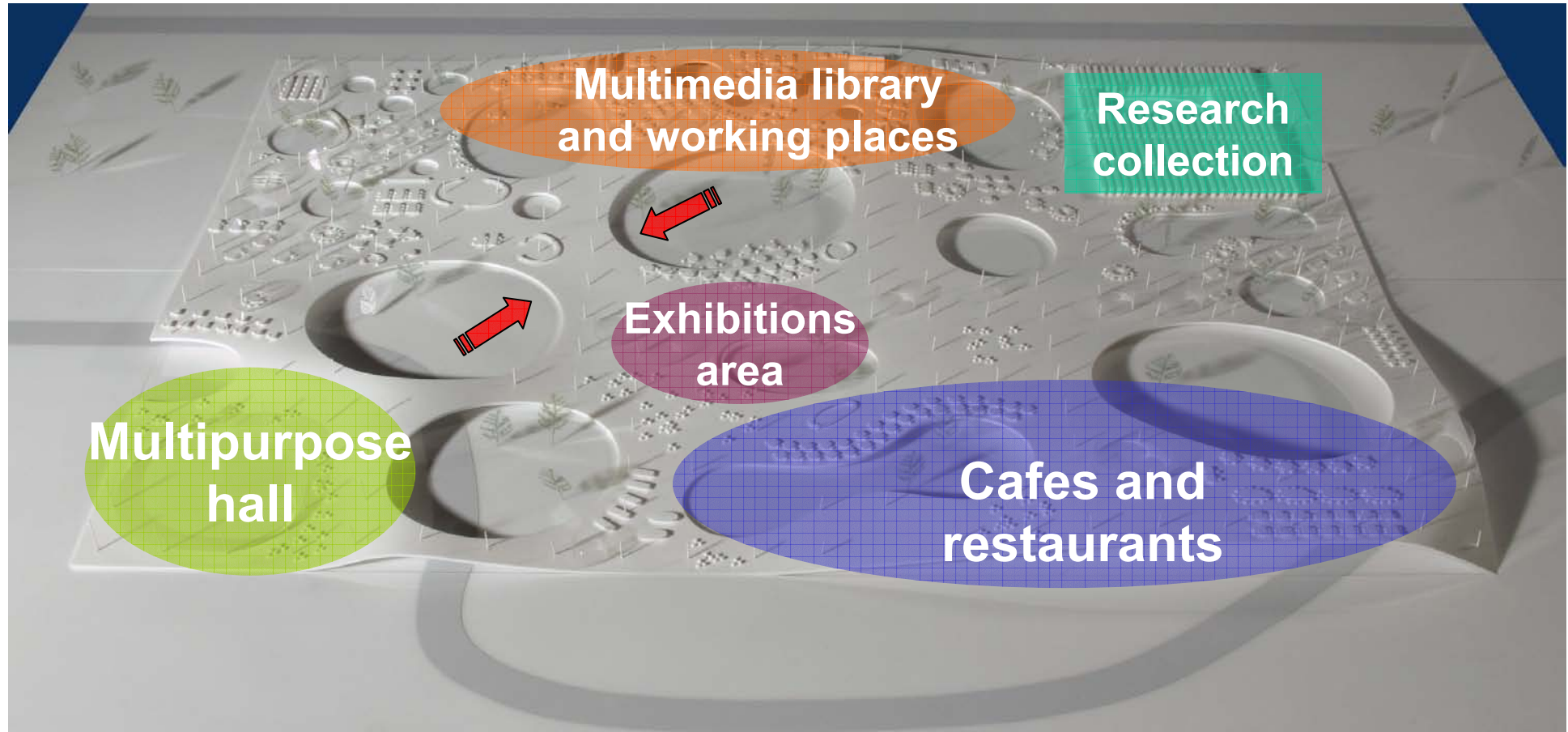


Sanaa, Kazuyo Sejima + Ryue Nishizawa, Tokyo

...The project offers an interesting prolongation of and analogy with the philosophy adopted during the first stage of the EPFL's construction : ***importance of itinerary, movement, interior courtyards with different surroundings, atmospheres, richness of vegetation, uniqueness and unity whilst still creating diversity...*** The proposed programme offers a new living space, opens up the possibility of new teaching approaches, everything being integrated into one single building as place of assembly and breeding-ground for ***enriching encounters and synergies...***



Sanaa, Kazuyo Sejima + Ryue Nishizawa, Tokyo



View Point of Technical Panel
by
Marie-Françoise Bisbrouck
expert in library science

Introduction (1)

- An architectural competition at international level
- The project must be « significant »
- It needed to impose itself in the environment, like a signal in the landscape
- It must emphasise the school's radiance at national and international level
- It has to take in account the presence of the Lemman Lake

- The projects may be classified in 4 major categories
 - 2 projects with an extensive coverage and landscaped compositions: **SANAA, Ateliers Jean Nouvel**
 - 3 projects with extremely marked elevations: **Herzog & De Meuron, Diller Scofidio, OMA**
 - 4 projects with high or marked compactness: **Vacchini, Olgiatti, Mecanoo, Du Besset-Lyon**
 - 3 mixed projects: **Abalos & Herreros, Xaveer De Geyter, Zaha Hadid**

Introduction (2)

2 experts in library science appointed by the EPFL to analyse the functional part of the 12 projects:

- **Mel COLLIER, from UK**
- **Myself, from France**

No work together, in order to avoid influencing one another
Important to work separately to « get into » the projects
without
any preconceived ideas

Selecting a methodology for analysing the projects (1)

- The role of the Technical Committee:
 - to inform the members of the Jury and the Contracting Authority of qualities and shortcomings of the competing projects without judgement on the projects
 - to consider only the library management aspects of the projects
 - existence of other experts in the viewpoint of structure of buildings, energy consumption, technical feasibility, cost, etc.
- No coercive guidelines received from the EPFL for managing our analyses: we had to study the 12 competing projects in terms of the functionality of the library areas with regards to the other areas.
- BUT...

Selecting a methodology for analysing the projects (2)

- BUT...
- For Mel and myself, it was impossible to dissociate completely the Library and the other very rich components of the Learning Center program and the very architecture of the proposed buildings, such as:
 - Accessibility of the Learning Center
 - Integration of the project into EPFL's premises
 - To try and imagine, from the architects' sketches, the impression obtained once INSIDE the building, as determined by the volumes of the various areas

Selecting a methodology for analysing the projects (3)

From a more strictly functional viewpoint, I tried concentrating on analysing the following points:

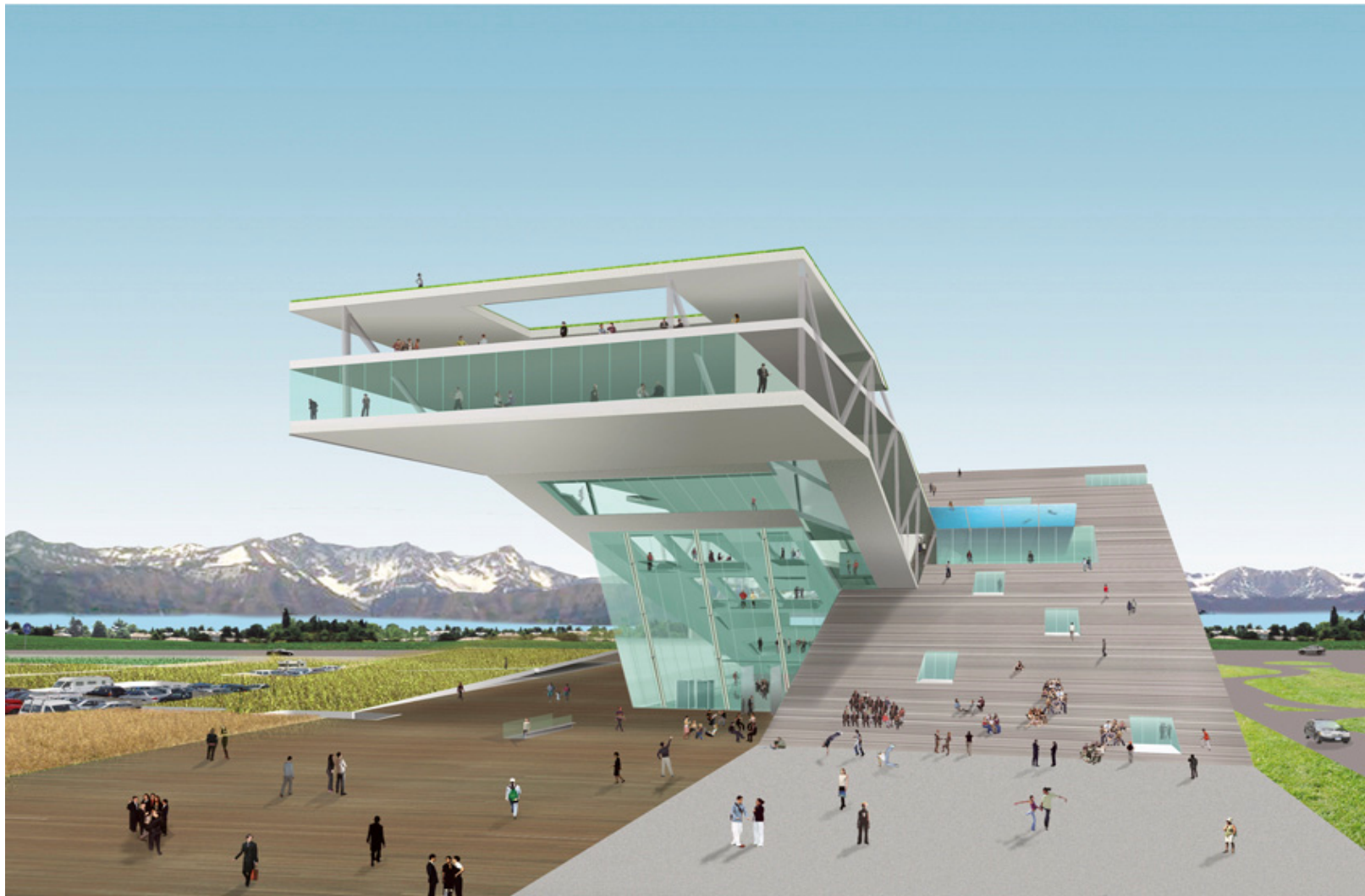
- * the number of levels and the legibility of services:
from 2 to 18 levels offered by the 12 projects !
- * programme objectives relating to the various public services
- * functional vertical and horizontal links between public services, etc.
- * natural lighting
- * security of library collections and materials
- * the ability of each project to evolve
- * easy maintenance of a building or its environment (facades, gardens, landscaped areas, maintenance of a swimming pool on the roof of one building !)

Selecting a methodology for analysing the projects (4)

The main criteria studied are as follows:

- the number of total levels in the library, with their degree of share between public services and internal departments (for library staff),
- an opinion regarding the security and surveillance of library collections and materials,
- the access to the Research collection, starting at the library entrance,
- the location of the Research-collection extension in relation to the collection,
- the access to the Training Department via the Multimedia Library,
- the proximity of the Learning Center's Training Department and the Library personnel's internal departments,
- the proximity of the CRAFT and the Library personnel's internal departments,
- the proximity of the Internet Café and Multimedia Library,
- the possibility of staging exhibits in the general Hall of the building,
- the general functionality of the Library

Diller Scofidio + Renfro, New-York



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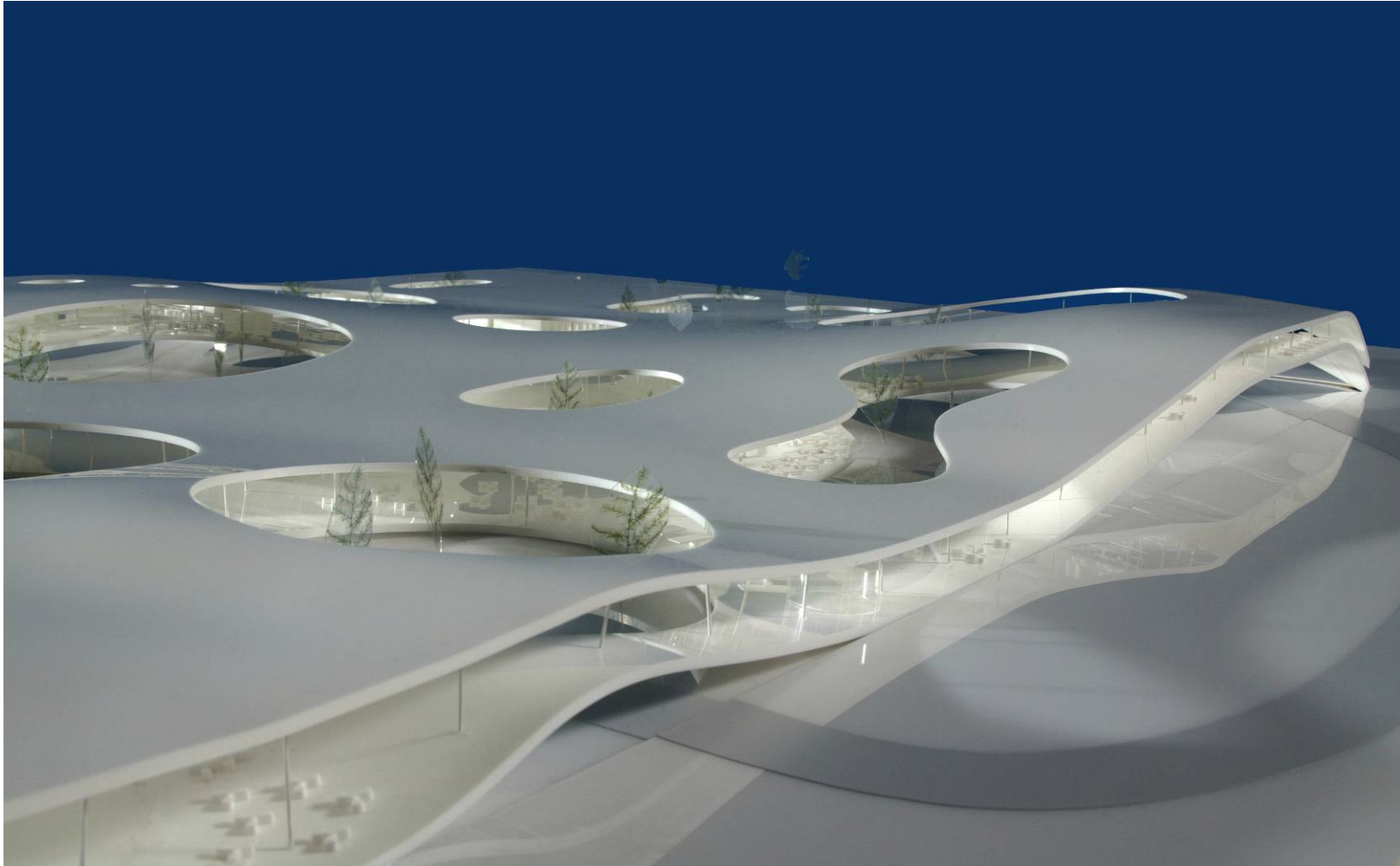
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Architects	Total number of Library levels (including research extension), & number for public Services & internal departments	Access to research collection via Multimedia Library	Research extension adjacent to research collection	Access to Training Dept. via Multimedia Library	Proximity to Training Dept. and internal Library departs.	CRAFT in proximity to internal Library departs.	Proximity to Internet Café and Multimedia Library	Exhibits included in Main Hall	Security and monitoring of collections and materials	General functionality of the Library
DILLER SCOFIDIO	7 levels including 6 public and 1 level for the internal personnel departments	YES	YES 2 adjoining levels	YES But too many levels	NO Levels 3 and 6	NO Levels 3 and 7	YES	?	POOR Too many levels or half-levels Cf. elevator access	Poor Too many levels; problem communicating with the "wings" of the building at certain levels. Problematic shelving of collection by staff, (stepped levels not served by ramps) However, an extremely attractive and powerful building; numerous differentiated areas, very rich in possibilities, very open.
MECANOO ARCHITECTS	3 levels including 3 for public and 1 for internal departments, but 2 public levels comprise several floor plates accessed by ramps	NO 2 dissociated accesses	YES	NO	AVERAGE 1 level difference	AVERAGE 1 level difference	NO 1 level difference	YES	Crucial point for functionality of project	Very good for the Multimedia Library, but problem of access to the research collection, and problems regarding security of collections. Very simple, very legible and genuinely attractive building. Re-examine location of cafeteria and the Internet Café. Check overhead lighting of the building.
OMA Rem Koolhaas	13 small and one large tiers, including 10 for the public and 3 for internal departments (18 levels in total for the building)	YES	YES Super-imposed levels	Proximity, YES, but direct access unsure...	YES	YES	YES	?	Very poor due to excessive number of levels. Crucial point for this project	Very poor because of the selected architectural scheme. Juxtaposition of departments. Areas are considerably broken up. Overall legibility is not obvious. It is really unclear how the levels communicate. Each floor-step seems to function independently even if they are contiguous... A very "hard" building psychologically: climbing the various levels becomes somewhat of a task.
SANAA	2 including 2 for public and 1 for internal departments	YES	YES	YES	YES	YES	YES	YES	Excessive number of entrances (potentially at least 8) gives excessive permeability of areas, preventing any monitoring.	Very poor The library is very spread out: separate activities become a hotchpotch. Very few enclosed spaces (lack of partitioning). Curved facades offer reduced functionality and are difficult to accommodate in the useful areas of the various departments. Checks and monitoring are impossible. Problems with noise and draughts. Nonetheless, a fine poetic statement.
XAVEER DE GEYTER	2, out of a total of 10 for the building, including 2 for public and 1 for internal departments	YES	YES	YES	On the same level but somewhat remote	On the same level but somewhat remote	YES	YES	Poor: problem with all lifts serving all 10 levels of the building	General functionality is excellent , over two vast floor plates (except for security of collections, and deliveries). Vast floor plates; high degree of flexibility, good natural lighting. Nonetheless, the scale of the building in the environment remains a question...

Projects evaluation

Architects	Mel Collier	Marie-Françoise Bisbrouck
1. Du Besset-Lyon		
2. Vacchini		
3. Abalos and Herreros		
4. SANAA		
5. Herzog & De Meuron		
6. OMA (Rem Koolhaas)		
7. De Geyter		
8. Mecanoo		
9. Ateliers Jean Nouvel		
10. Diller Scofidio		
11. Olgiatti		
12. Zaha Hadid		

Excellent	Good	Not satisfactory	Very unsatisfactory (avoid)

Conclusion

This architectural competition as the very centre of architectural creation

One regret:

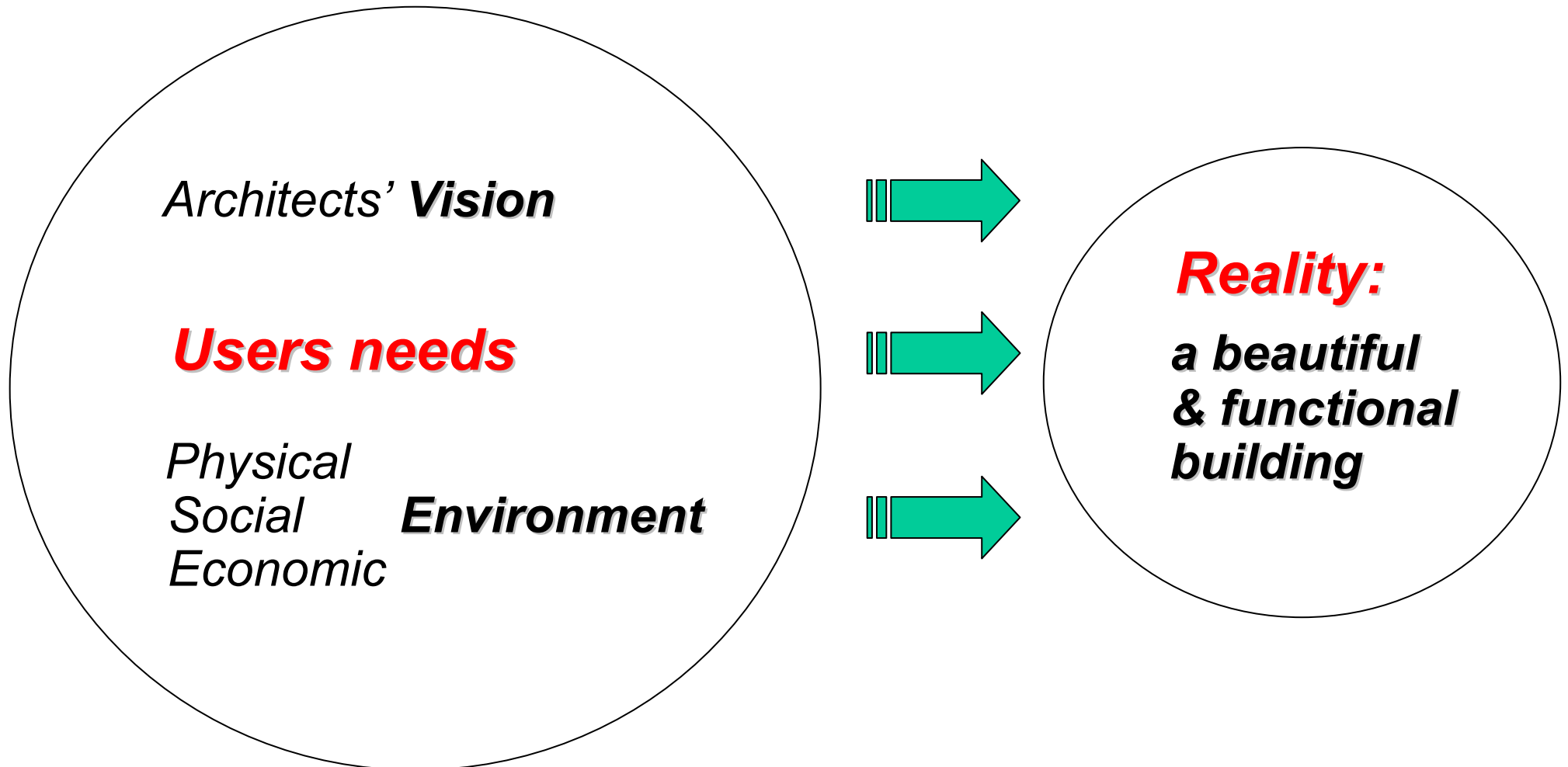
- The attitude of the jury to our work as library-management specialists
- The question of the make-up of juries for architectural competitions

One wish:

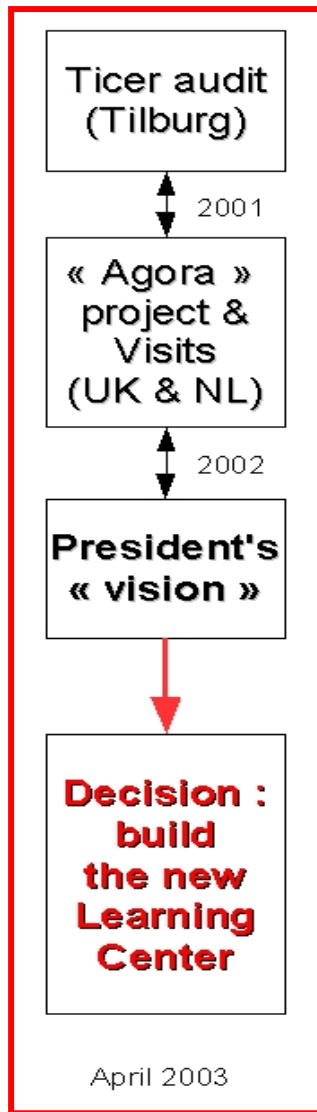
- The prize-winning project: a « Zen » project
- A fascinating project which needs to evolve to become a good Learning Center. The whole question is: Is it possible without breaking the delicate harmony it presents?...

And this is where Mirjana comes in...!

Challenges of a “unique” Project



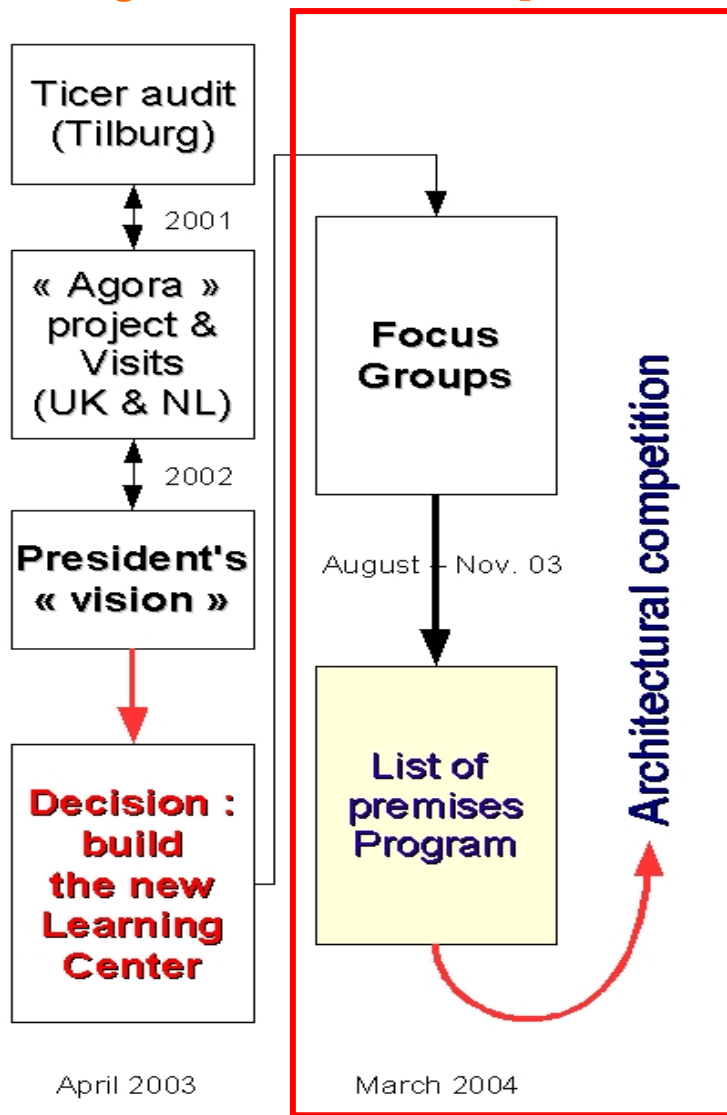
Project Development and Planning : Stage 1



Vision :

create a place for living and studying,
for students mainly but also for researchers and
people from outside as well,
including a library, work areas, cafes and restaurants,
facilities for various events, ...

Project Development and Planning : Stage 2



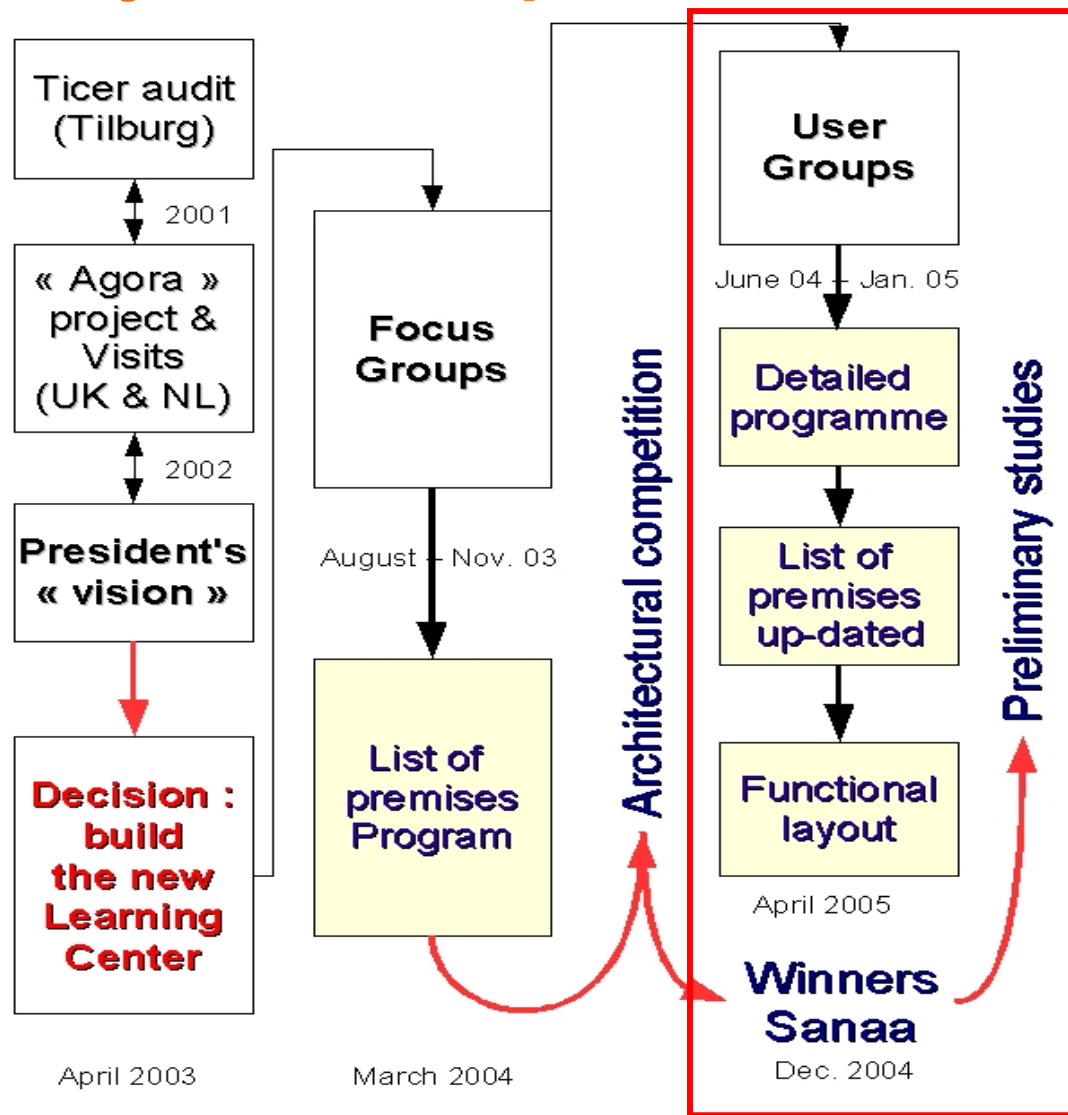
Focus groups' goals :

- identify the degree of acceptance of the intended reforms (teaching methods and scientific information)
- work out the programme for the Learning Center
- sketch out the changes to be made to the EPFL campus in general

Conclusion :

the Learning Center project should be expanded to a ***Campus for Tomorrow***, of which the ***Library of the Future*** is one element

Project Development and Planning : Stage 3



User Groups

for each type of facility:

- Library
- Training
- Events / Campus
- Publishing / Bookshop

Detailed Program : Facility Sheet

Example (extract) :

Definition of functions:

Area: 1.3 a Multimedia library : Free access 1.3 b Reading and individual work area				
<i>What's done there (use)? What's it used for?</i>	<i>To whom?</i>	<i>When? How?</i>	<i>Characteristics (size, access, atmosphere, colours,...)</i>	<i>Equipment</i>
1. Storage for collections selected for free access	Staff members	Collections of books classified by subject, regularly updated Access to collection 24 hours a day, 7 days a week	Collections kept away from daylight to preserve books Organised by subject The various media are mixed together (books, CDs, DVDs, etc.) Several different areas An area is reserved for printed periodicals Good signposting	Furniture that can be easily assembled and dismantled by library staff. Must be easy to buy more. Shelves not too high Bookshop-type display unit, low shelves -> used to present novelties or specific themes
2. Gathering information, searching by topic (people "rummage")	Library users	By wandering round the shelves, following simple signposting	Allow sufficient space for two people, face to face (or back to back), a wheelchair or trolley of books.	Catalogue consultation terminals, baskets, trolleys, provide places for depositing books after use
3. Giving information to users, answering specific questions	Library staff	Easily visible and signposted, so that users can quickly locate these information desks	Approx. 6 information desks scattered throughout the library	Desks with 2 seats, open, approachable for users. Comfortable chairs

Description of ideal premises:

Location in library

The library (free access) would be a series of areas. More precisely, the 700 workspaces would be scattered, but must however be taken concerning user traffic and noise. Working areas must not be in the middle of a busy area, but behind the group workspaces, to comply with the "rule" so that no areas are left unsupervised.

The terminals for rapid Internet consultation can be placed in the quiet areas.

Detailed description of area

A quiet, private area favouring concentration (reading should be used to their best advantage).

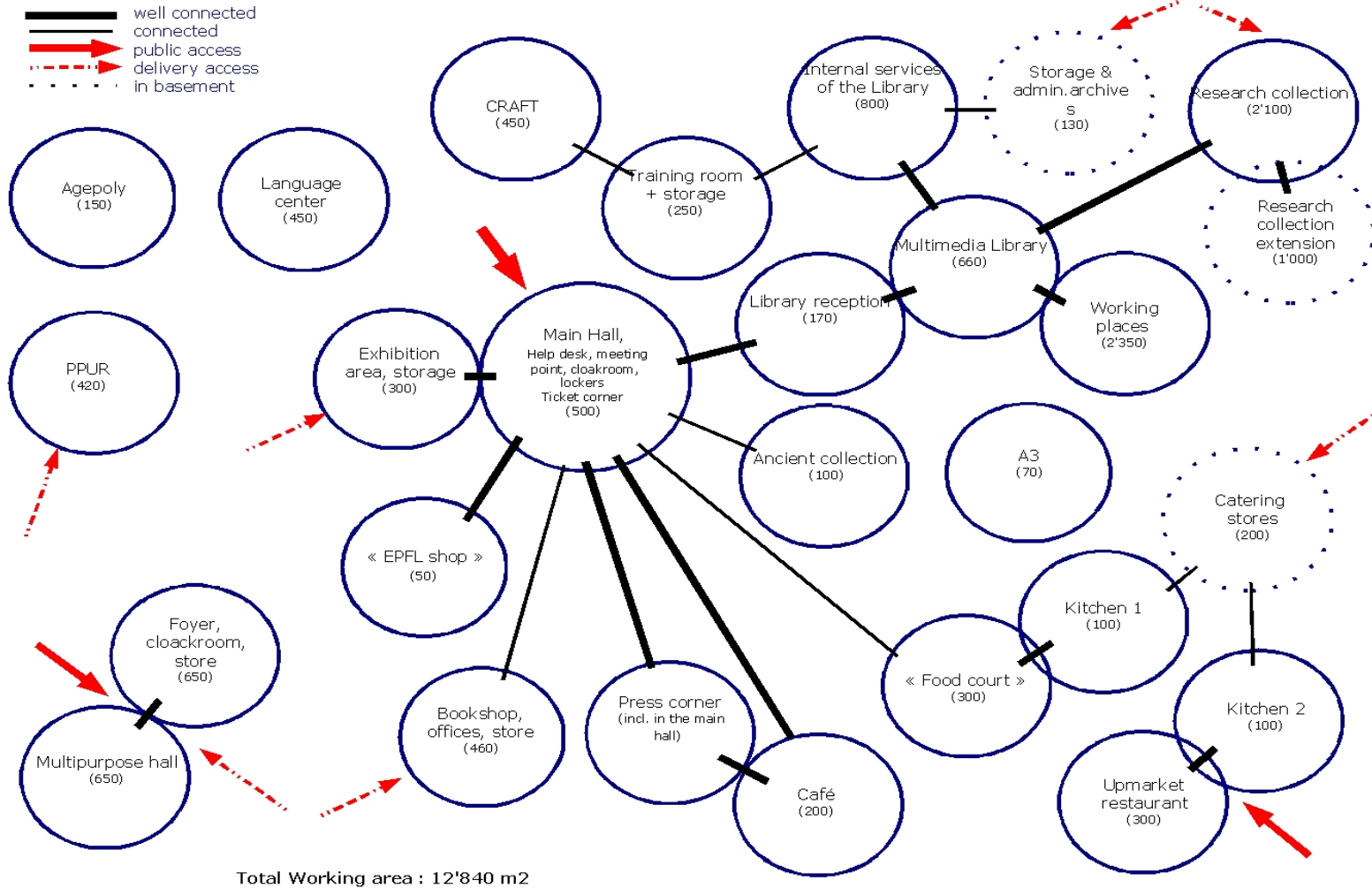
There are several possible uses for this area:
 - relaxation (reading, watching DVDs, etc.) which
 - tasks involving concentration (individual work,
 - interaction (working quite informally in small groups, exercise results, etc.)

There are thus several types of workspace:
 - for several people
 - alone, surrounded by other people
 - alone, in a quiet area

Therefore, areas must be provided in relation with these dimensions and types of workspace: individual booths, corners with sofas and armchairs, large tables, etc.

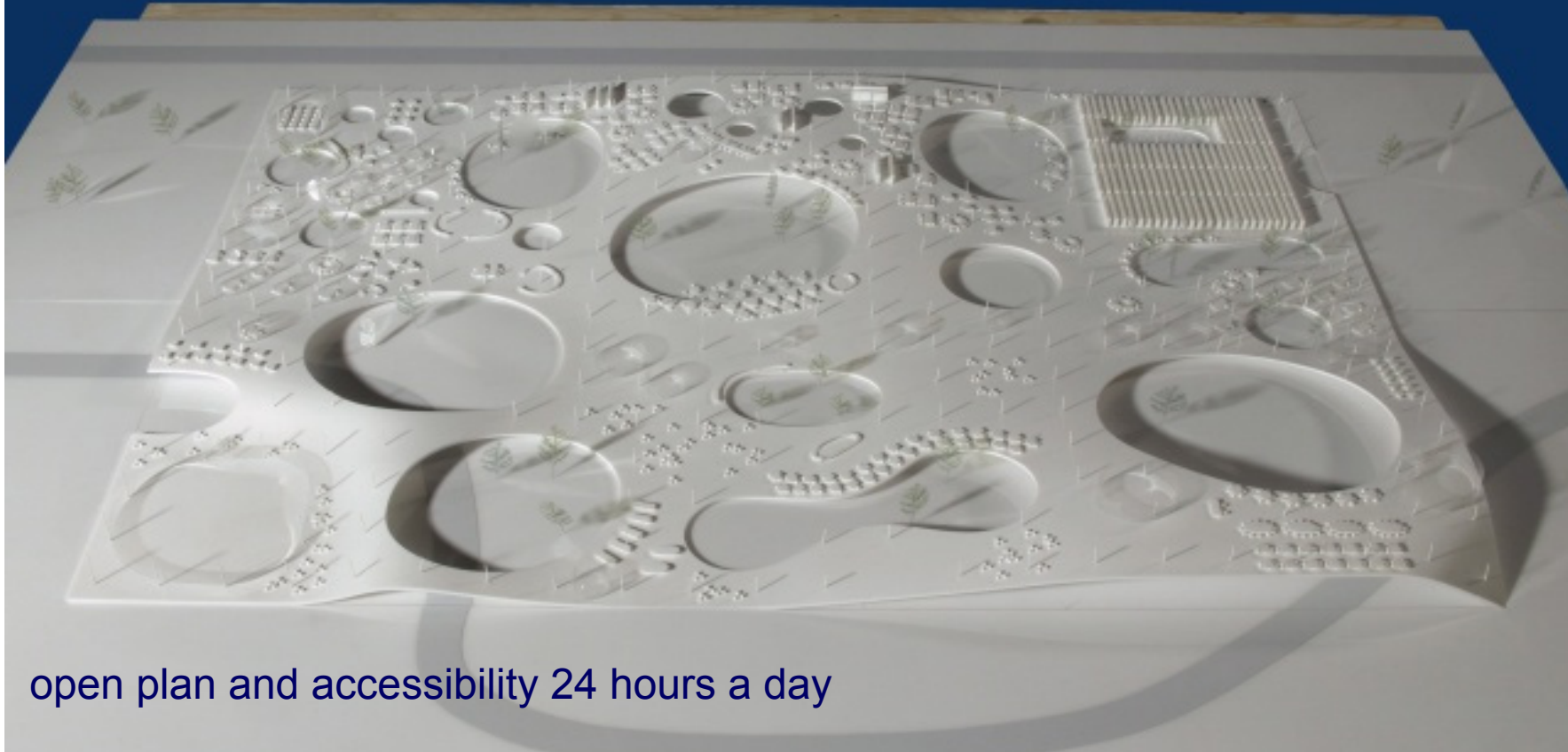
The concepts of noise and silence are important (sound-absorbing floor). The free-access area is the first work area: when people are searching for information, their surroundings must be quiet, but not absolutely silent. There must be a transition between the reading area and the relaxation area, from almost total silence to subdued chatting.

Functional Layout (extract)



Functional and Technical Challenge

flexibility and the variable slope



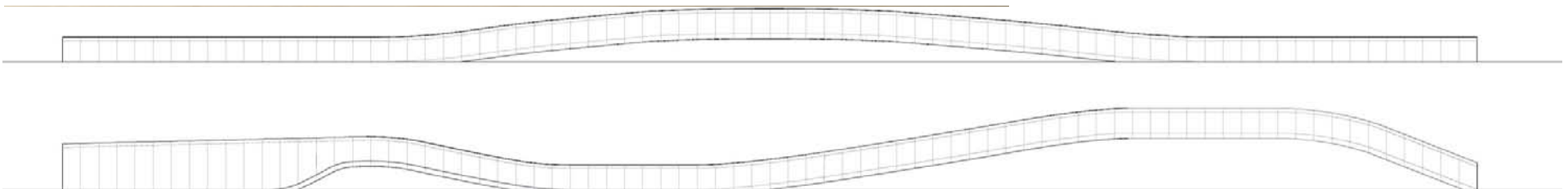
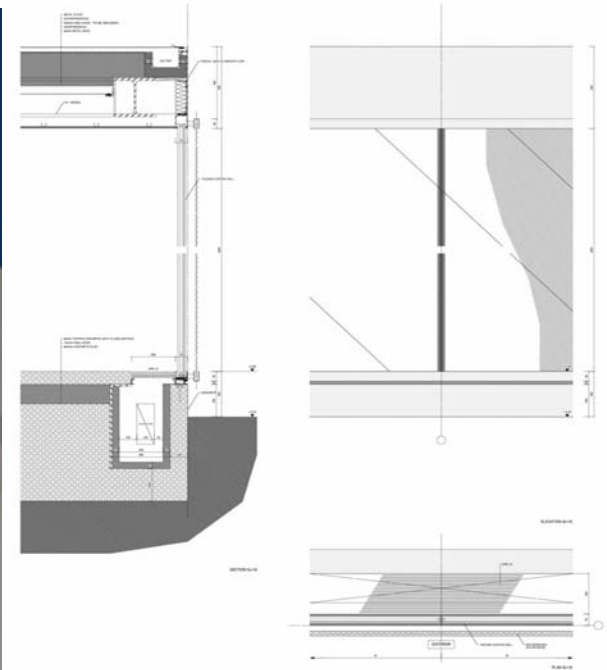
open plan and accessibility 24 hours a day

Functional and Technical Challenge

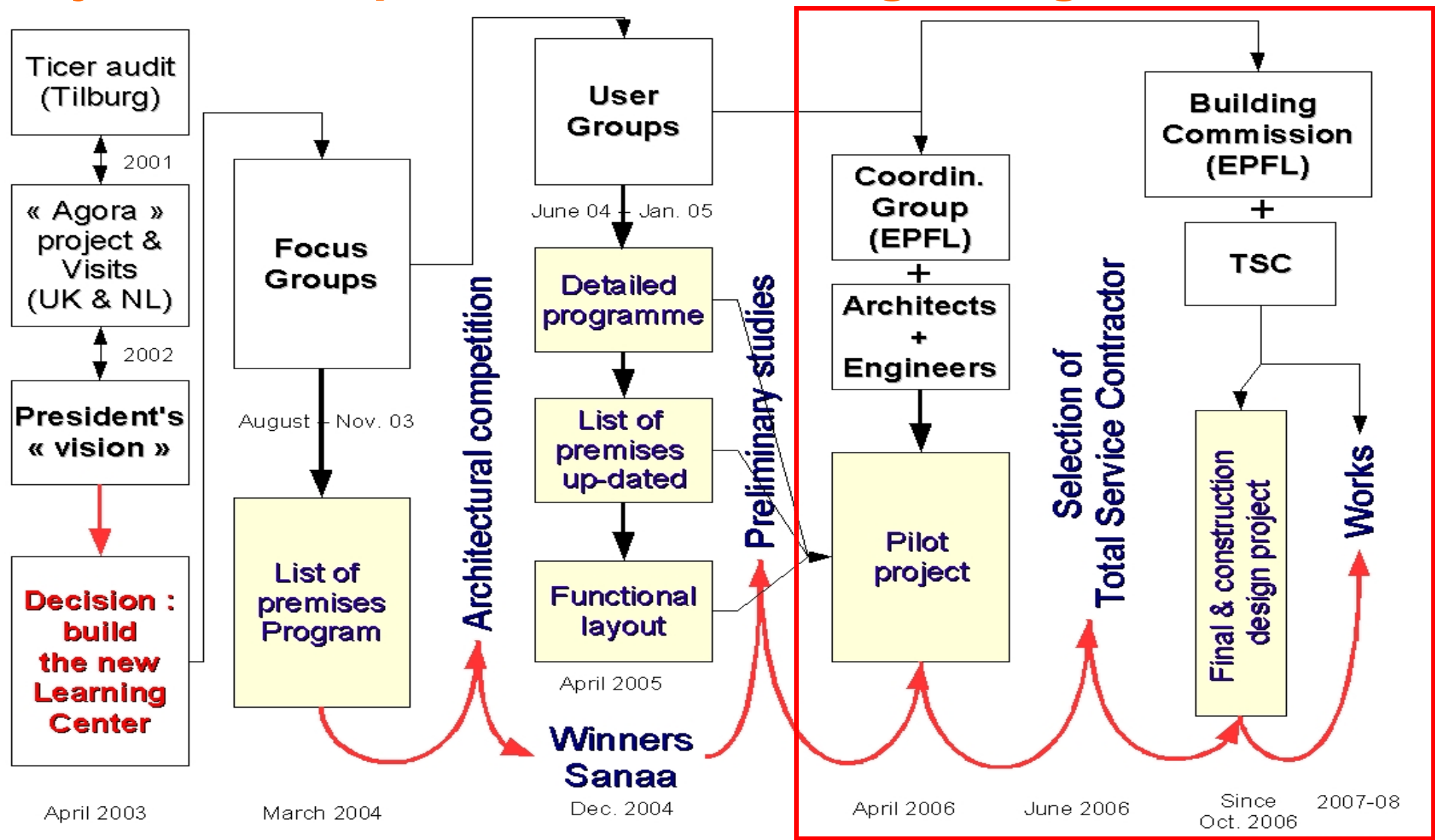
irregular slab in shell



double curvature glass panels



Project Development and Planning : Stage 4



Thank you for your attention !

More information ?

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<http://learningcenter.epfl.ch>