

SB13 Graz



Image: Total Quality Project Wienerberg, Gebä

Sustainable Building Conference 2013
25.–28. September 2013, TU Graz, Austria



IN CO-OPERATION WITH:



**Integration of sustainability targets
into the planning process and their
effects on project results –
case study of the MED CAMPUS Graz**

Content

- I. Previous steps and actual situation of the MED CAMPUS project
- II. Sustainability goals for the MED CAMPUS project
- III. Main challenges in the design process to reach the sustainability goals
- IV. Methods and tools used
- V. Planning Measures
- VI. The project result

I. Previous steps and actual situation of the MED CAMPUS project

➤ The Medical University of Graz



Research

- Research Profile
- Research Facilities
- Research Management & Research Funding
- Cooperation
- Biobank Graz



Education

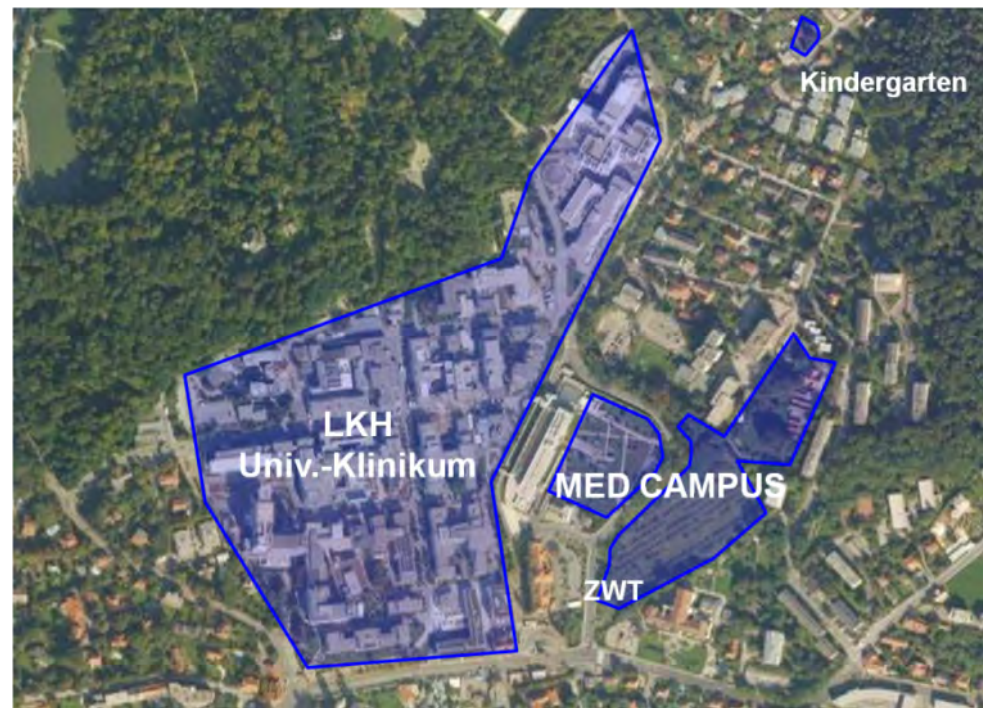
- Range of Studies
- International
- Continuing Medical Education



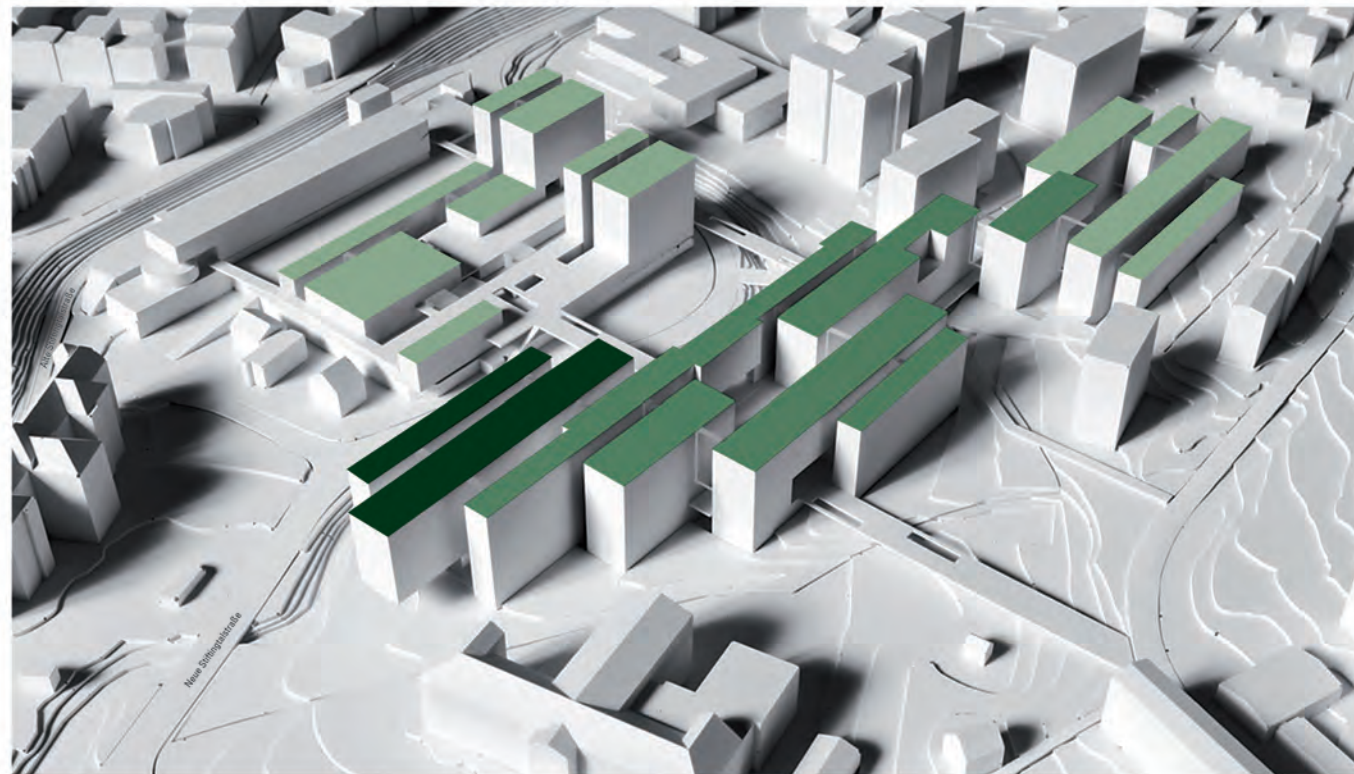
Health

- University of Health
- Health Promotion
- Projects

➤ Project development



➤ The project



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ZWT
Zentrum für Wissens- und Technologietransfer in
der Medizin, Fertigstellung Bauwerk: Dezember
2013, Bezug Mai 2014

MED CAMPUS Modul 1
Baubeginn Juli 2013,
Bezug Dezember 2016

MED CAMPUS Modul 2
Fertigstellung laut Bauleitplan 2018

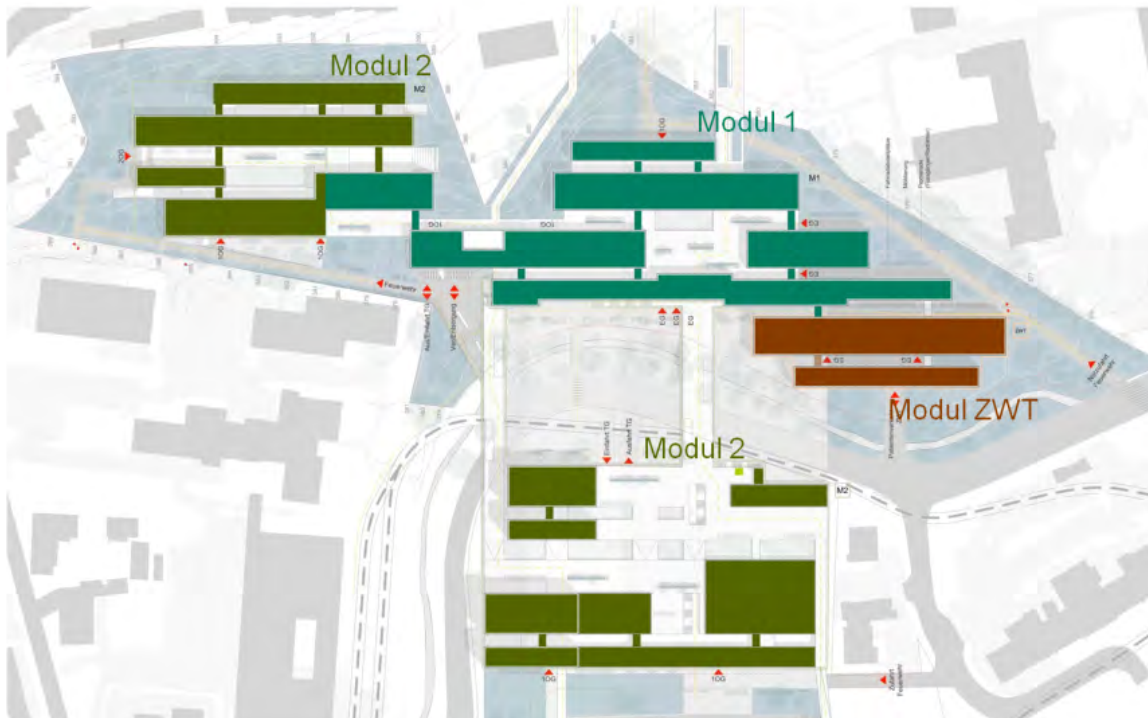
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➤ Key facts of the MED CAMPUS



- Two moduls
- Modul 1:
approx. 42.000 m²

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II. Sustainability goals for the MED CAMPUS project

> output (teaching, research)



< input (resources, costs)

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III. Main challenges in the design process to reach the sustainability goals

1. The complexity and dimension of the building project itself
2. Sustainability reflexion cuts across the standard planning structure
3. The demand to an on going estimation of the various aspects
4. The lack of standardized processes for the design of sustainable buildings



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IV. Methods and tools used

- Integration of the sustainability topics in the early project development



➤ **Organizational measures and methods**

- Establishment of an **Integrated planning team**
- Installation of a **Sustainability coordinator** in each of the organizations
- **Definition of clear targets**
- **Regular sustainability meetings**
- **Regular pre-checks** to evaluate current status
- **Ongoing dialogue** between different areas of detailed design
- **Interim reports** on sustainability as a steering instrument
- **Ongoing definition of thematic areas of focus**

- Selection of reference projects to compare with
- Use of **special control tools**
- Definition of a **separate sustainability budget** as a controlling- tool

➤ Organizational measures and methods

- **Establishment of an Integrated planning team**
- **Installation of a Sustainability coordinator in each of the organizations**
- **Definition and commitment of clear targets**
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- Definiton of a **separate sustainability budget** as a controlling- tool

➤ **Planning and design methods and tools**

- **Standardized process for valuation of variants**
- Compilation and evaluation of detailed decision-making dossiers
- Design & development of an **integrated energy concept**
- Assessment of individual measures including **economic feasibility calculations**
- **Whole building simulations**
- **Thermal building simulations**
- **Daylight simulations**
- **Life cycle costs analyses (LCCA)**
- **Life cycle assessment (LCA)**
- Implementing of the **ÖGNI certification system** as a tool to measure **fulfilment of targets**

➤ Planning and design methods and tools

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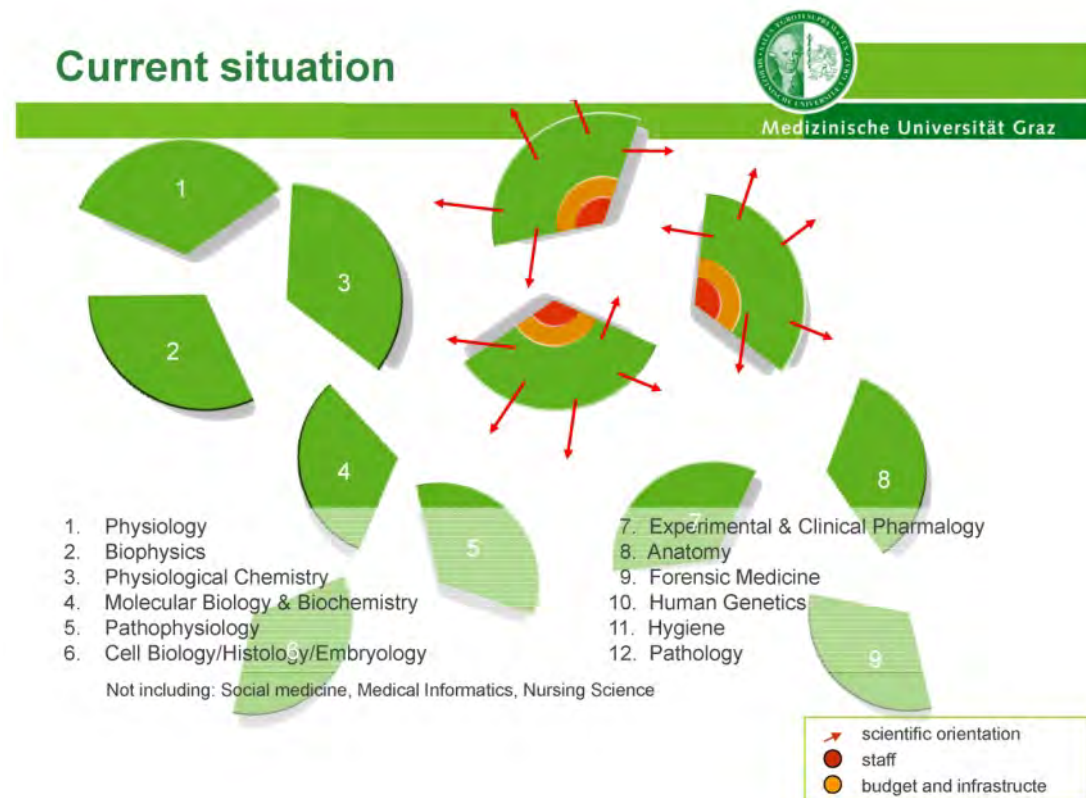
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V. Planning Measures

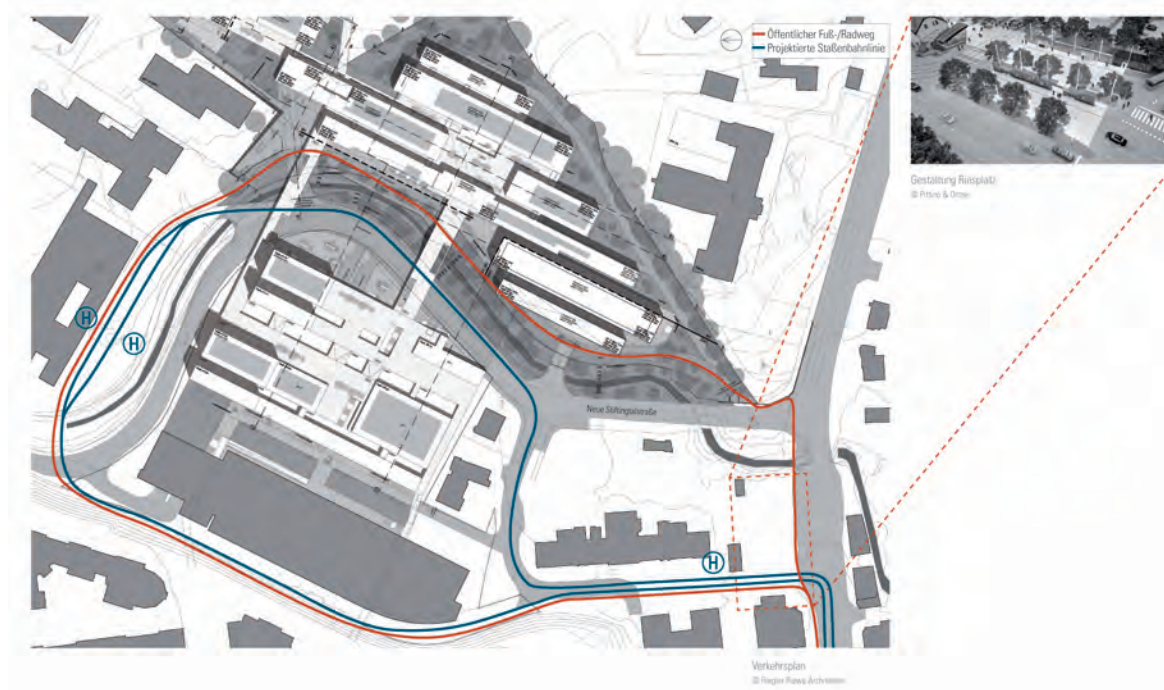
- **Measures in each of the four dimensions of sustainability**

➤ Open use concept – flexibility and synergies



- 12 Institutes, 4 centers
- 9 Core facilities
- ZMF II with research-project – depending areas

➤ **Mobility agreement for a sustainable traffic concept**



Mobility agreement

- mobility plan
- upgrading of the public traffic infrastructure

➤ Sustainability measures in urban planning



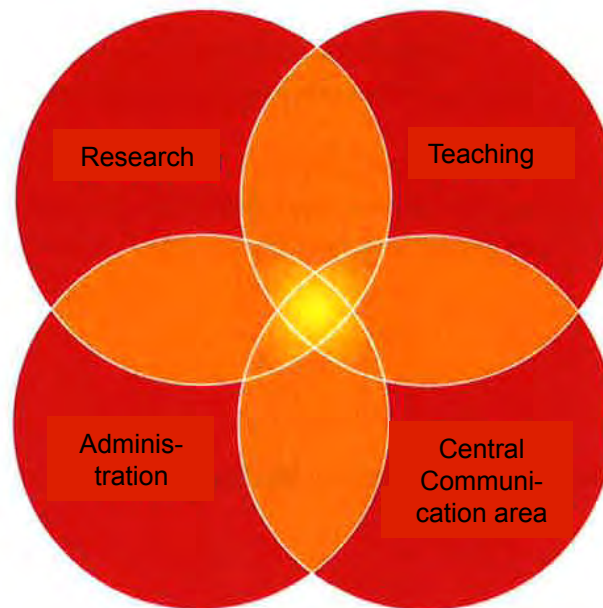
- urban density
- integration of the urban space
- ecological design
- considering of the fresh air corridor for the city

➤ **Standardized and flexible floor plans**



- Standardized floor plans
- Interconnected with Bridges

➤ Communicative qualities



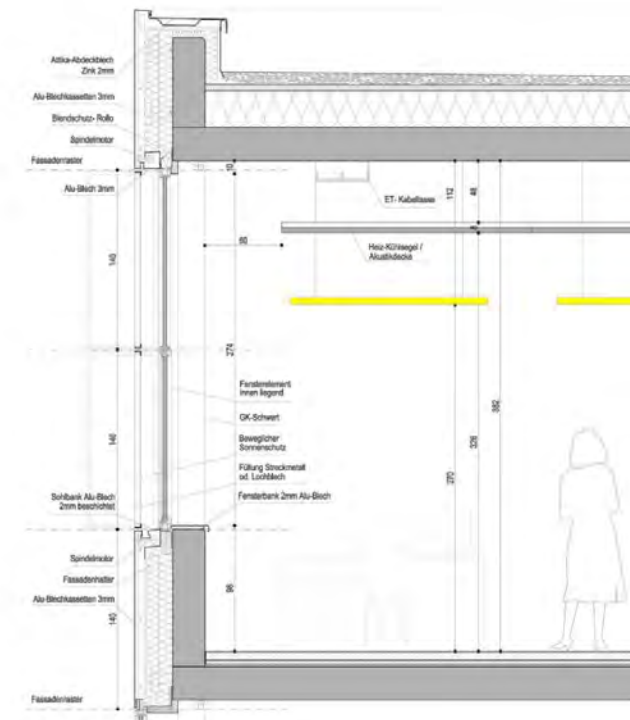
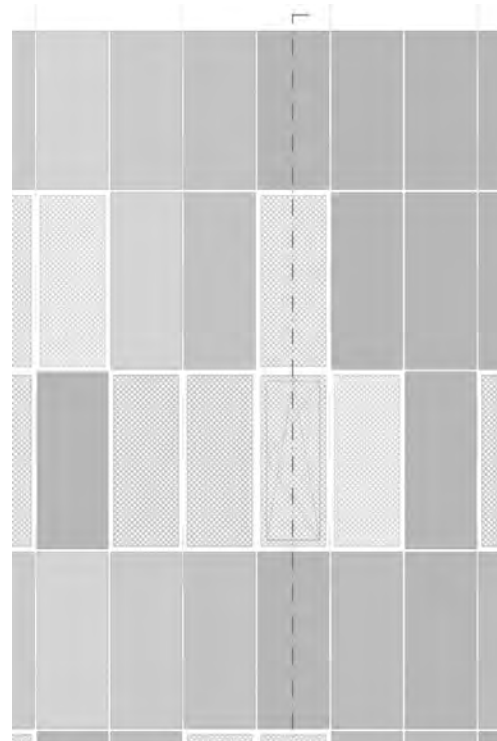
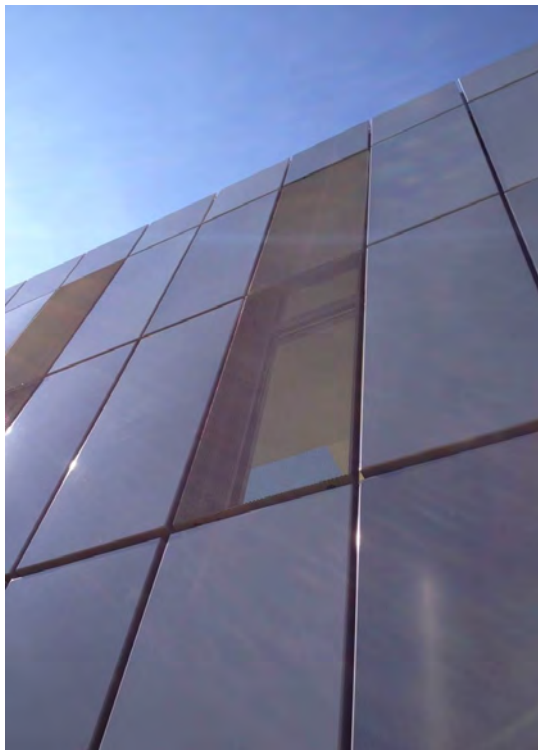
Internal space:

- Flexible and highly linked up floor plans
- Meeting points
- Studying zones
- Social rooms
- Cafes, Canteen
- Assembly hall
- Exhibition zones

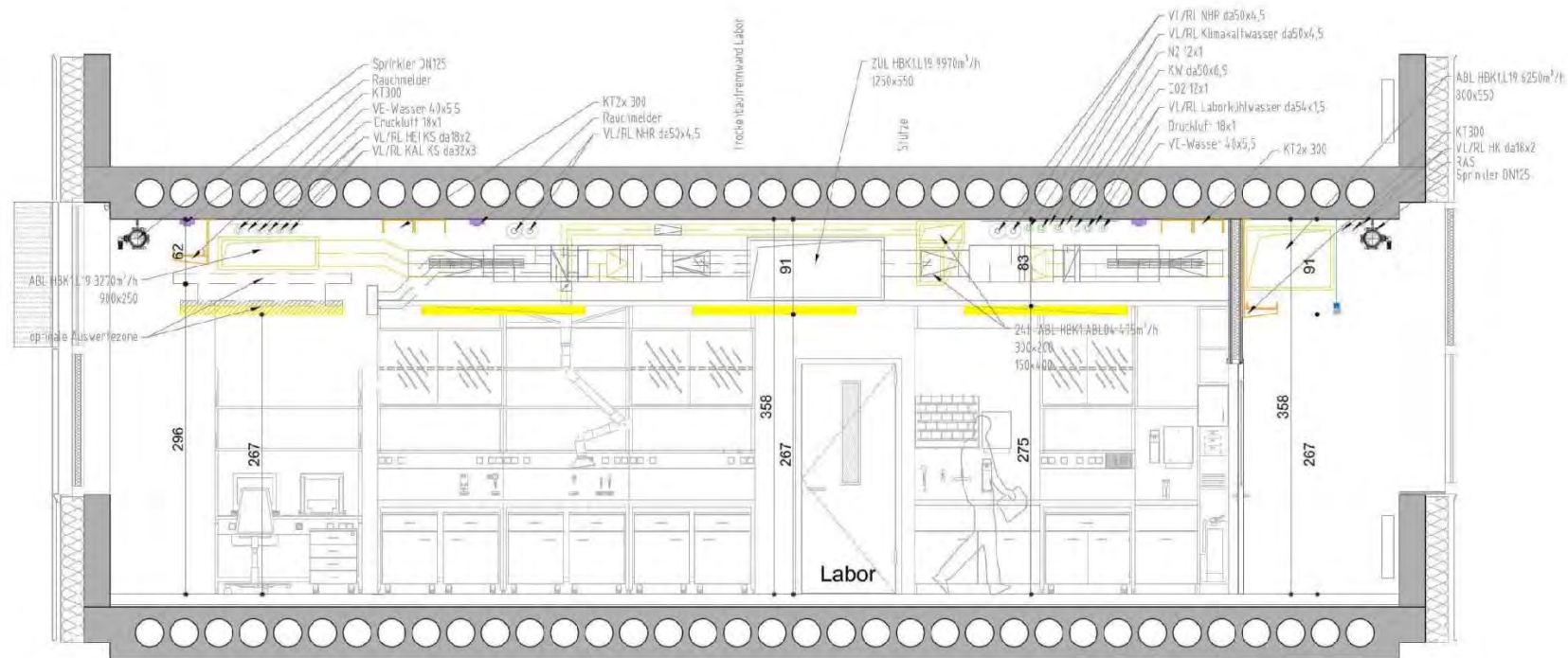
External space:

- Communication zones
- Outdoor furnishing
- Green space

► Functional facade



 **Sustainable Building technologies**



- High thermal insulation
- Triple glazing
- Heat recovery systems
- CO₂ sensors
- **Utilization of waste heat**
- **Control of lighting**
- **Renewable energy supply by the use of energy piles**

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VI. The project result

| | | | |
|---|--|---|--|
| <i>Invironment</i>  | <i>Economy</i>  | <i>Functionality</i>  | <i>Added value of use</i>  |
|---|--|---|--|

- **Approx. 35 % saving of primary energy demand** for construction- and operating phase
- **Approx. 40 % saving of energy costs**
- with a **pay back time of 7 to 17 years** for the different components
- And, there is a long terme **cost saving from the soft factors of sustainability**, functionality and added value of use

