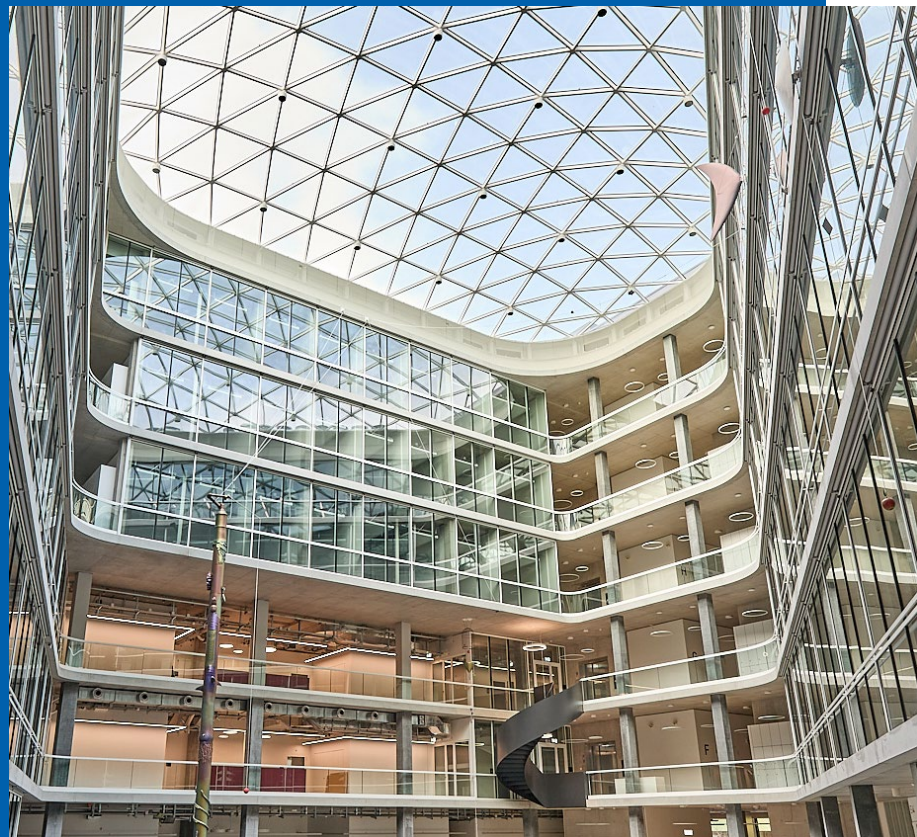


Facility Services

An important service area operating in the background

The Facility Services Department represents an integrative, efficient approach to the management of buildings, facilities and resources that includes the coordination of services such as maintenance, energy efficiency, spatial planning, security and technical services, with the aim of creating optimal working environments for companies and ensuring the functionality, sustainability and productivity of properties. By leveraging digital innovations such as sensors, smart solutions and sustainable practices, facility management helps optimise buildings and, at the same time, helps companies reduce costs, improve use of work space, and make a positive contribution to environmental sustainability.



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First glimpse at the new ETH Zurich building (BSS) in Basel

Although the newly constructed building in Basel is not yet ready for occupancy, we can offer you an initial insight into the complex building technology and services of this beautiful modern building, together with some important details.

In the preliminary and construction phases of the project the ETH was represented on various specialist groups.



Recooler on the L floor

Some technical data

- Energy standard: Minergie-ECO / DGNB Gold
- Site: 5,835 m²
- Area of all floors: 36,000 m²
- Total volume: 170,000 m³
- Floors: 2 basements, 1 mezzanine floor, 6 upper floors, 1 building services floor
- Use: 600 employees / 100 students
- Approx. 1,400 doors fitted
- Atrium roof: approx. 38 t glass
- Glass fitted: approx. 13,500 m²

Heating / ventilation / air conditioning / cooling / sanitary / electrical (HLKKSE)

For the Technical Building Management section the Facility Services department has recruited specialist personnel.

Breakdowns and repairs taking up to thirty minutes to implement are initially carried out in-house by an FS (Facility Services) specialist. All more extensive and complex work is outsourced. By means of an initial diagnosis, our qualified experts can place a targeted order with external service providers, and thus save valuable time. Faults are reported via the building management system, the reporting portal „Meldeportal“ (ticket system/preferred method) or in person to our ISC Information and Service Centre.



Heating

The building is supplied via its own heat generation, waste heat utilisation and external district heating. The heat distribution in the building takes place via ventilation systems, heating and cooling ceilings, panel radiators and floor convectors.



Ventilation

The individual areas of the building (laboratories, offices, meeting rooms and public areas) are supplied with filtered and air-conditioned fresh air via several supply and exhaust air systems.



Air conditioning

The air-conditioned building is cooled in summer and heated in winter. The humidification required separately for research purposes is only provided in specific laboratory areas.



Grey area outside the GMP clean room on the B floor



Cooling

The building has its own cooling generators (located on Floor B) as well as a connection to an external district cooling system, which is generated on the Schällemätteli site.

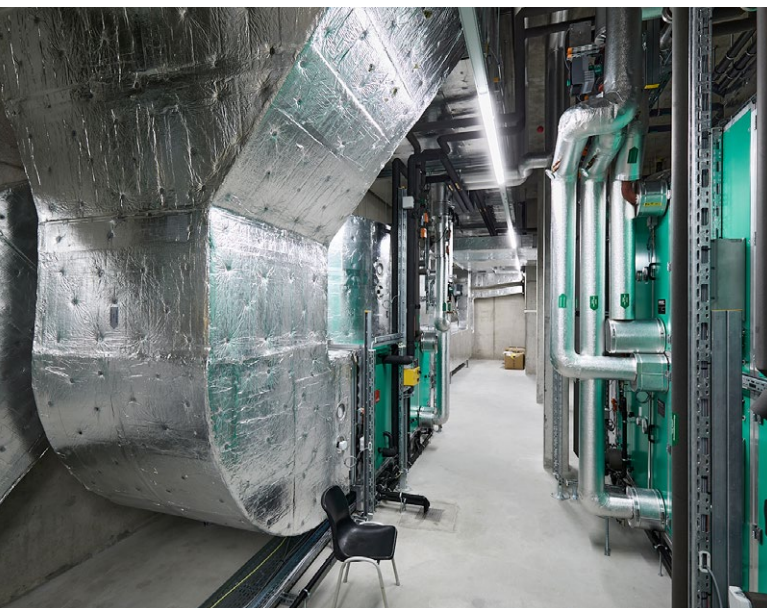
The company's own cooling generators consist on the one hand of two ammonia-fuelled cooling generators of 600 kW each, with three recirculating coolers located on the roof (see photo). In addition, there are several CO2-operated cooling generators, which supply the GMP, laboratory and catering area as well as the clean room and the refrigerated rooms.



Water supply

Drinking water (cold water) for the building is supplied by the municipality of Basel. Basically, two different water systems are installed in the building: drinking water in all public areas and laboratory water (process water) in all laboratories. Softened water, ultrapure water and osmosis water are produced in-house for special processes. For the laboratory area, the ultrapure water is generated decentrally on the individual floors. The hot water supply, which is intended for hand washing and sinks in the laboratories, is provided by means of flow heaters installed under the laboratory sinks. The hot water supply for the catering area and the public areas is provided centrally via waste heat recovery. For energy conservation reasons the wash basins in the toilets do not have a hot water supply.

The laboratory wastewater is collected in separate buffer tanks. The wastewater is pumped into the municipal sewer system after testing. If test results indicate contamination, the system automatically switches off and prevents pumping for safety reasons.



Supply air system on the B floor



Steam centre on the B floor



Steam centre on the B floor

For the production of steam, the company uses two 500 kW electric steam generators, which supply the building (autoclaves, dishwashers, GMP area).

Three tank systems are located outside: two liquid nitrogen tanks and one CO₂ tank system. Depending on research requirements, the building can be supplied with nitrogen in liquid and gaseous form.

Important information

Only limited resources are drawn from external sources or discharged again: drinking water, medium-voltage power, district cooling and heating, hot water, wastewater and rainwater.

Compressed air for the building is generated on Floor L by means of three compressed air compressors connected to each other in a cascade.

The heat can be re-used, e.g. for hot service water, by means of heat recovery from the condensate steam and a recirculating cooler. The building has more exhaust than supply air systems. The heat is stored in a tank. If necessary, more heat can be fed in via the district heating network. Energy and resources are sourced from the synergies provided by the University of Basel.



Glass cleaning

The open-plan design of the building features glass surfaces measuring 9,500 m², which provide a transparent and pleasant atmosphere. The design reflects our open culture at the ETH and gives staff and guests a clearer insight into our research field.

Thanks to the extensive use of glass, the building's occupants also benefit from natural daylight in almost every area.

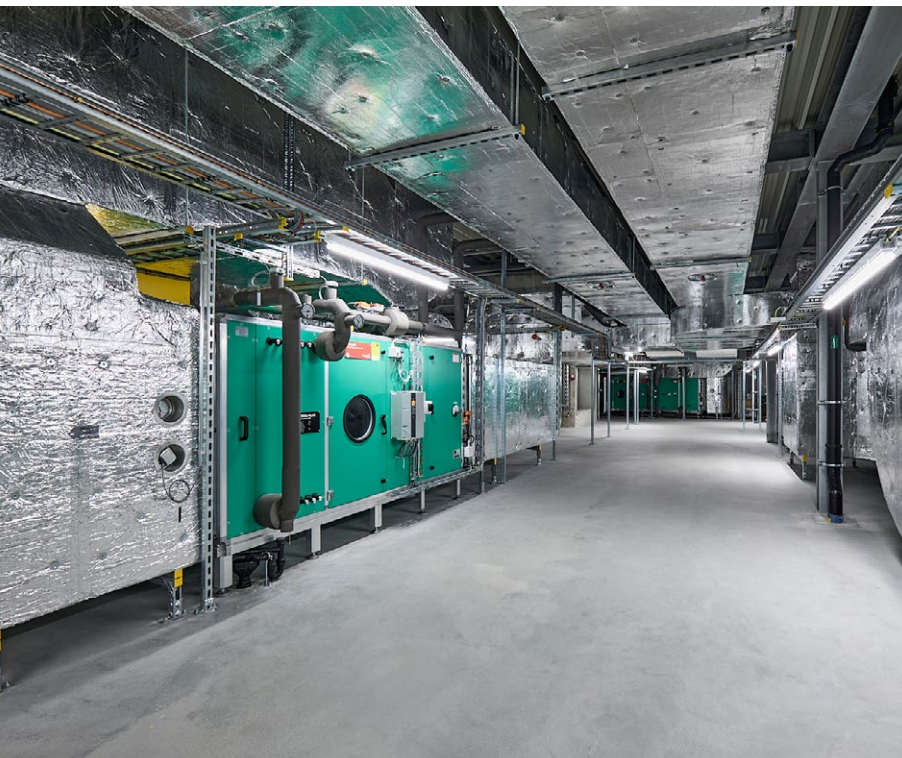
At the same time, however, this means that our infrastructure facility management (IGM) expects a significantly greater cleaning challenge in terms of keeping all glass surfaces clean and well-maintained. This is carried out in cooperation with expert service providers.



Recycling plastics – a pilot project

After moving into the new building, we intend to launch the „PE and PP plastics recycling“ project. The plan is to collect PE and PP plastics in specifically labelled containers. A description of the possible recyclables will be created and published. Collection of full PE inliner bags will be carried out by the IGM unit in a separate metal skip at the disposal site.

The test phase for this project will be one month. During this time, various results will be analysed (quantity, grade purity, plastic content etc.). Subsequently, it will be decided whether the test phase should be optimised and extended.



Exhaust air centre on the L floor

Synergies with the University of Basel

- Joint supply and disposal tunnel
- Close cooperation in various operational areas
- Shared research facilities
- 25 common parking spaces
- Public catering facilities on the site



Grey area outside the GMP clean room on the B floor

Miscellaneous

Almost at the top is the „Science Lounge“, with a kitchen for self-catering. There will also be vending machines with food for researchers working on a 24-hour basis. On this floor, as well as on the ground floor, there are large halls for meetings/events, some of which can be partitioned by sliding walls. Online conferences can also be held - e.g. with the ETH in Zurich - and state-of-the-art technology is installed here (beamer, TV, etc.). In addition to the cafeteria, there are round „think tanks“ with benches, the walls of which are made of white board material, so that students can write and share notes.

Telecommunication takes place via Wi-Fi and therefore continues to be ensured.

Bicycles can be parked in front of the building. Flat tyres can be inflated at the bike pump station.

The ventilation in the offices is controlled by a timer programme. Outside the defined time windows, the ventilation is off and the temperature in the offices is regulated by means of a heating/cooling ceiling. If there is no one in the room, the systems are shut down. As soon as someone enters the room, they are reactivated.

The sun protection system, on the other hand, is controlled for the entire building. For energy reasons, the blinds can only be operated manually to a limited extent.

The building has a total of five staircases. The ground floor houses the fire alarm system, among other things. On the left-hand side (as seen from the main entrance) is the Facility Services section, with the office on the right. The Information and Service Centre, which always provides competent help, is located at the round white counter. There is also a cafeteria.

On Floor C (2nd basement), goods are delivered via the logistics tunnel. The lowest floor houses the air-conditioning cabinets, server room, UPS and emergency ventilation system.



Heating and cooling supply centre on the B floor

The Information and Service Centre team will continue to be available to answer questions, provide information and accept and issue lost property.

As you can infer from this, well-trained personnel are needed for the sometimes very complex systems. In the past, building services meant something very different from what they are today. Thirty years ago, the „main tasks“ of the Facility Services department were emptying rubbish bins, clearing snow, mowing the lawn, keeping everything clean and taking care of the heating. Nowadays, the FS department needs multi-talents but also – and above all – specialists to be able to meet its daily requirements. The FS department does a lot of work in the background. If this work is not done, the staff feels it. Ongoing staff training is necessary to keep up with technical developments.

We hope that you have gained some insight into the new ETH building and invite you to take part when the time comes in a guided tour that will explain everything to you on site.

Information and Service Centre

When you enter the building, you will see the round white reception desk of our Information and Service Centre as the first point of contact. This is designed in such a way that people can be served at eye level as they stand. However, there is also a slightly lower counter designed especially for wheelchair users.

Probably the most important task in this area is key management. Whether it's a one-day or long-term key or badge, the ISC is responsible for issuing, taking back and administering them. The staff can use the separate office for administrative tasks.

As a special highlight, we are going to introduce a simplified key provision system in Basel in the form of „Kemas“. In particular, external service providers who are frequently in our building will be able to collect their keys independently and return them to the locker after work. Identification with the personal ETH badge at the terminal of the device opens the individual locker, in which the corresponding keys are located.

We would like to thank all those involved in the project for their relentless support.

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