



Building for the future

New Building of the European Investment Bank, Luxembourg



Building for the future



Foreword by VP Roth

To deal with the growing activity and the numerous additional tasks entrusted to the European Investment Bank, its Management Committee decided to enlarge the Headquarters in Luxembourg with a new building adjacent to the existing buildings on the Kirchberg Plateau.

In 2002, the EIB launched an international architecture competition for this new building and the jury, chaired by Ricardo Bofill, selected the architects Ingenhoven Overdiek and Associates.

The philosophy of the concept for the New Building can be summarised in two words: ecology and transparency. Ecology, because of the natural interaction between the building structure and its surroundings, including wind, sun, rain, vegetation and soil. Transparency, because the new building will combine a unique association of steel and glass superstructure, providing maximum daylight and brightness to its occupants.

Designed and equipped to adapt to the new generation of working methods and communication requirements, the building will use the most advanced technologies to address the challenges of the future and to meet the needs of the workforce of tomorrow.

A handwritten signature in black ink, appearing to read 'VP Roth', written in a cursive style.

Some Statistics

The new building is planned to have:

- eleven floors, of which 8 are above ground and include the main functions;
- to be about, 170 meters long, 50 meters wide, 22 meters high;
- an overall gross area of some 72 500 m², of which 42 000 m² are above ground;
- the main entrance at Level 4, connects to the existing building at Level 3;
- offices and facilities for 750 employees;
- the central cafeteria and restaurant for the whole complex serving both the present building and the new building.

Construction Milestones

December 2003

- Start of Preliminary Works
- Temporary Access to Car park, New Fire Path

April 2004

- Start of Excavation

October 2004

- End of Excavation

First quarter 2005

- Start of Main Works

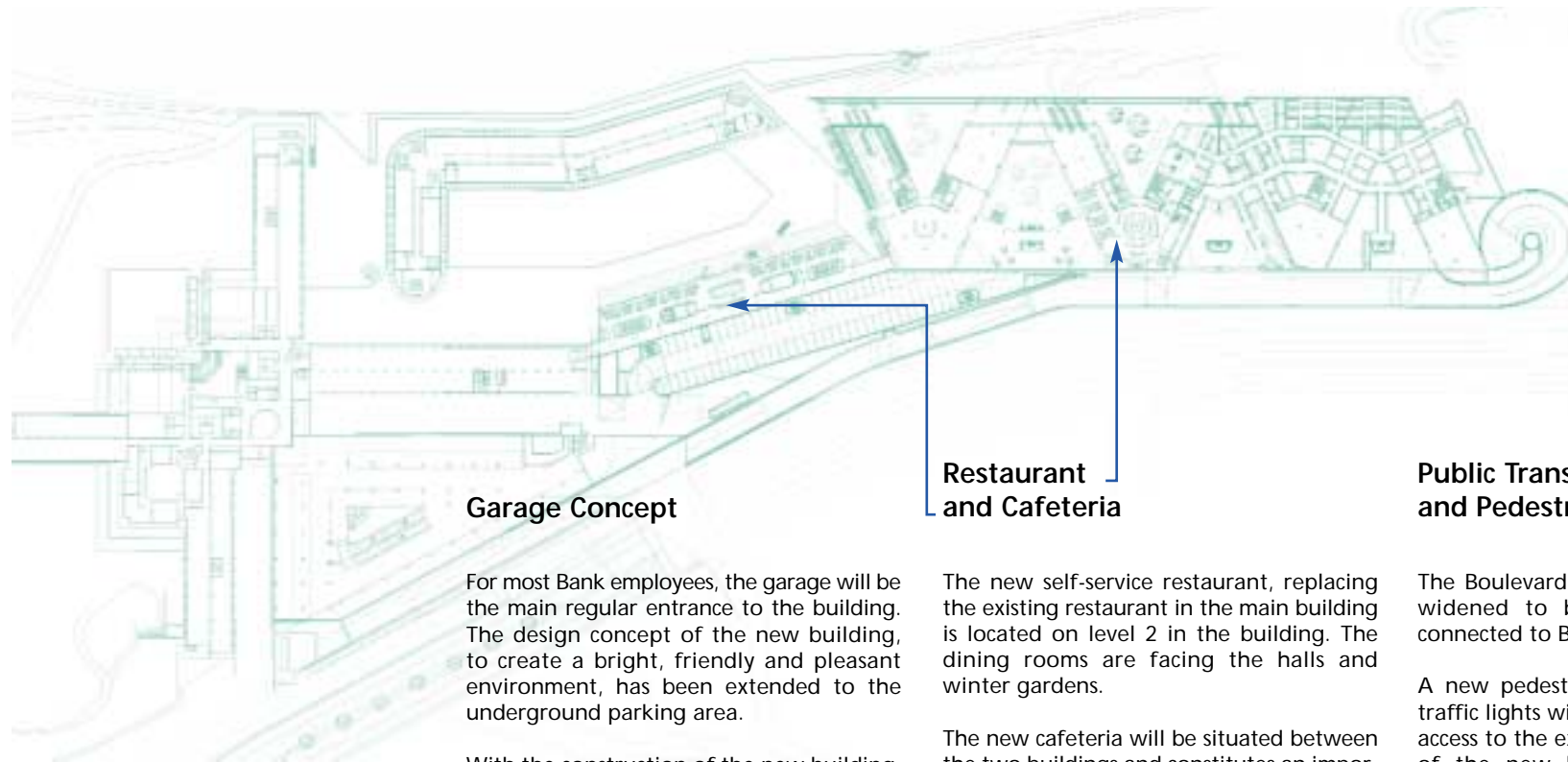
2005 to 2007

- Construction Works

Mid 2007

- Delivery of the New Building

Linking the buildings



Garage Concept

For most Bank employees, the garage will be the main regular entrance to the building. The design concept of the new building, to create a bright, friendly and pleasant environment, has been extended to the underground parking area.

With the construction of the new building, the vehicle entrances for both buildings will be consolidated. The ramp access will lead to the level-3-connection of the existing building. A spiral ramp will provide access to level 2 and the three new parking levels of the new building.

Restaurant and Cafeteria

The new self-service restaurant, replacing the existing restaurant in the main building, is located on level 2 in the building. The dining rooms are facing the halls and winter gardens.

The new cafeteria will be situated between the two buildings and constitutes an important element of the interaction between the different parts of the EIB complex.

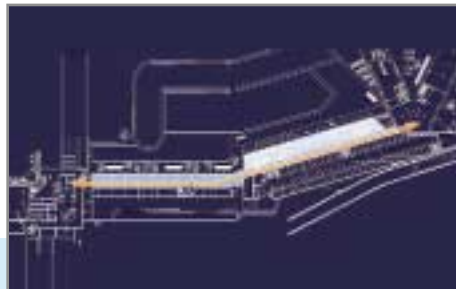
Other common facilities such as the newspaper shop, the bank and the travel agency will be relocated, possibly in the area adjoining the cafeteria in wing 3.2. of the existing building. The management dining rooms will be located on level 4 near the main entrance of the new building.

Public Transport and Pedestrian Access

The Boulevard Konrad Adenauer is being widened to become a four-lane road connected to Boulevard Kennedy.

A new pedestrian crossing controlled by traffic lights will be positioned at the main access to the existing parent building. East of the new building, where the new entrance to the garage is being built, a similar crossing will be installed.

An underground station for the planned new tram (linking the town center to Findel via the Kirchberg) will be constructed in front of the European Court of Justice Building. Direct access to the Banks buildings is under consideration.



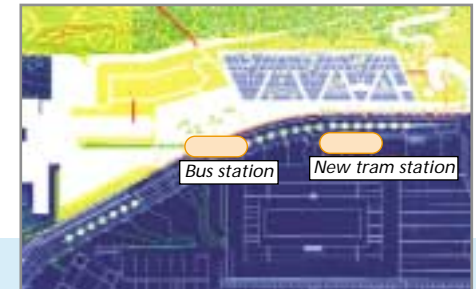
Connection to existing building



The car park



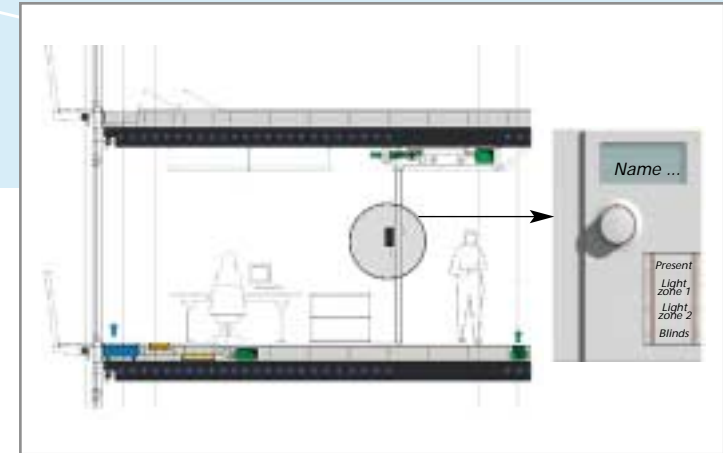
The cafeteria



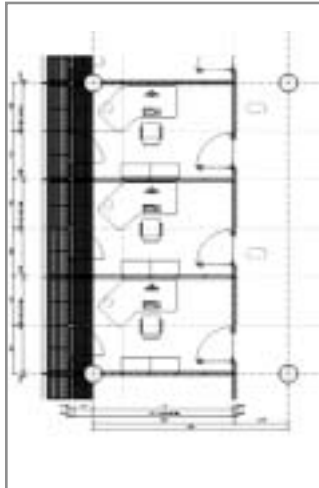
Connection with Public Transport

New Work Spirit

Add-On Installation modules at interior walls



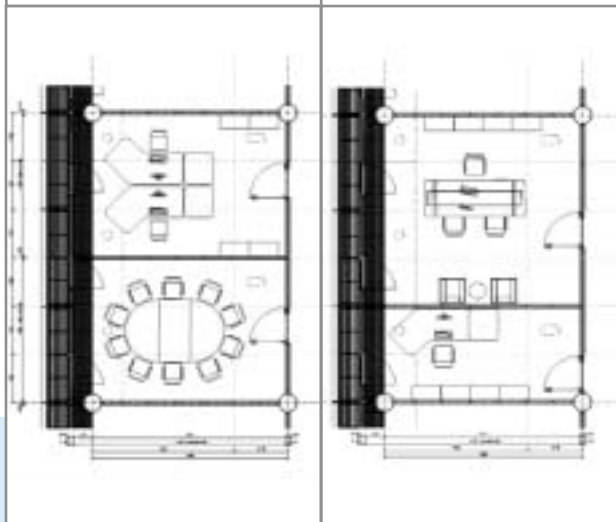
Single office



Flexible Office Concept

The flexible modular building concept will allow the office spaces to be combined and adjusted to provide either communal areas or individual offices. By reducing the depth of a single office, common functions such as departmental storage areas, printing/copying or meeting spaces can be created.

As well as the central meeting rooms on each office wing, each level of the building has its own internal meeting room. Each level has a central zone, which combines an informal meeting area with an integrated coffee corner.



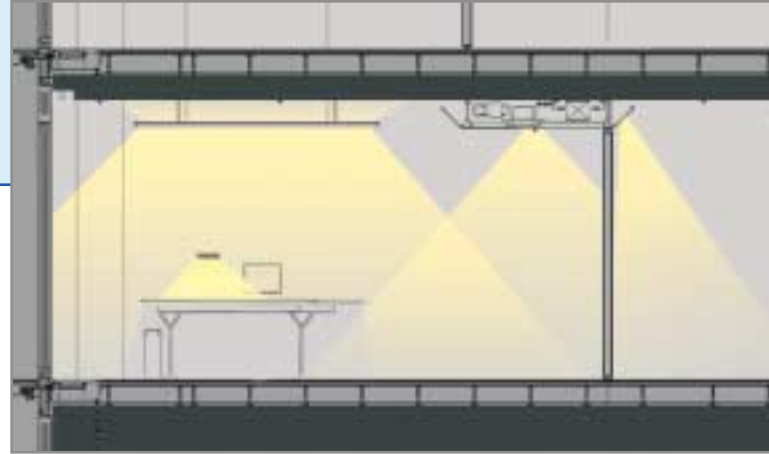
Shared office

Executive or Managerial office

Office Comfort

Energy efficiency and comfort are ensured by an individually controlled system for solar protection, lighting, heating, cooling and ventilation unit in each office.



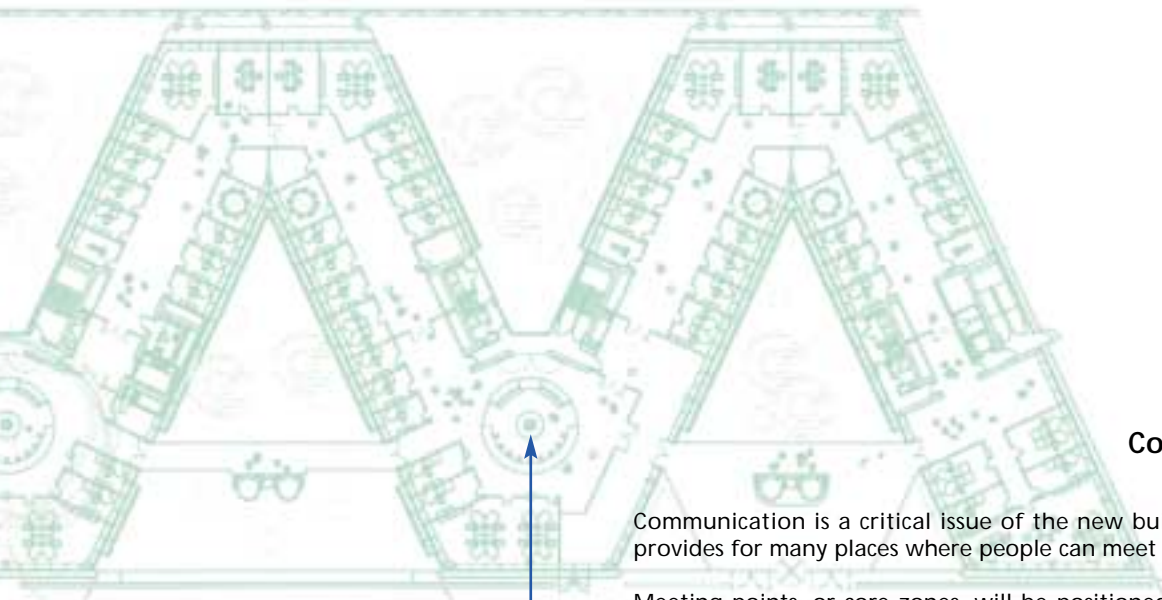


Office Lighting

The office lighting system is being designed to meet the most recent regulations and uses the state of the art technology.

A multi-level lighting scheme will provide for basic lighting levels inside each office, as well as a higher level on each desk using an individual 'task light'.

The basic lighting will be provided by suspended linear lamps using a new prismatic technology which provides both direct and an indirect light.



Communications

Communication is a critical issue of the new building. The design provides for many places where people can meet and interact.

Meeting points, or core zones, will be positioned where the office wings join. These zones will also be the crossing points of the other internal connections such as the bridges, corridors and staircases of the office wings.



A Building for all seasons

Atria and Winter Gardens

The building has warm and cold halls. In Winter, the three warm halls (Atria) will be heated to a temperature of approximately 18°C, whereas the three cold winter gardens atria will remain unheated, acting as thermal buffers.

In Summer, the halls will be ventilated by opening sections of the roof, which will produce variable circulations of air, depending on the wind direction and the width of the opening.

Whilst the halls are ventilated through in summer and partly in spring and autumn to allow the solar energy to dissipate, this same thermal energy will be used in winter and the colder periods of spring and autumn to warm the area by closing the ventilation sections.

Offices

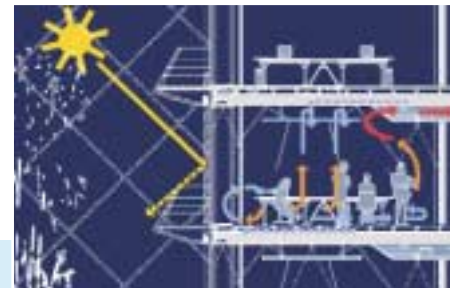
The offices are designed to be naturally ventilated from the warm and cold halls or the gardens. To ensure the required comfort level in summer, mechanical ventilation with cooling elements will be provided to maintain the target temperatures. When the outside weather conditions permit, natural ventilation of the offices can be used by opening windows to the halls or the outside.



Daytime/natural ventilation



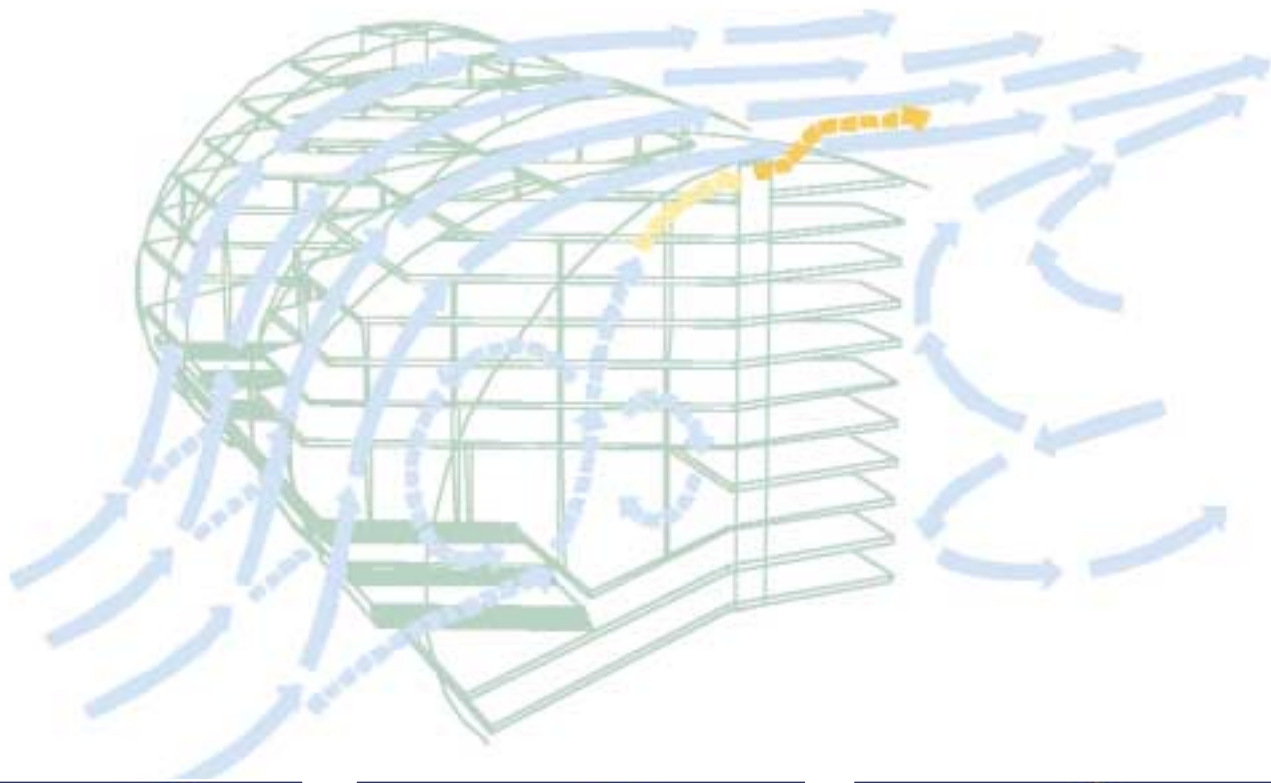
Nighttime/cooling the building



Hot summer day



Cold winter day



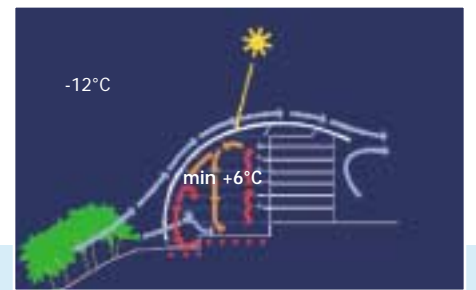
Tempered atrium/summer



Tempered atrium/winter



Wintergarden/summer



Wintergarden/winter

Roof and Facade Structure

Construction Materials and Structural Design

The structural design of glass-filled triangular sections creates an impression of an almost completely transparent building. The structure meets the highest demands of efficiency, reduction of energy consumption and safety. The shaped glass surface will form an intelligent skin, which opens for natural ventilation and climate control in the inner winter gardens, halls and office spaces.

The load bearing structure of the building consists of a reinforced concrete structure with foundations on the multi-storey basement.

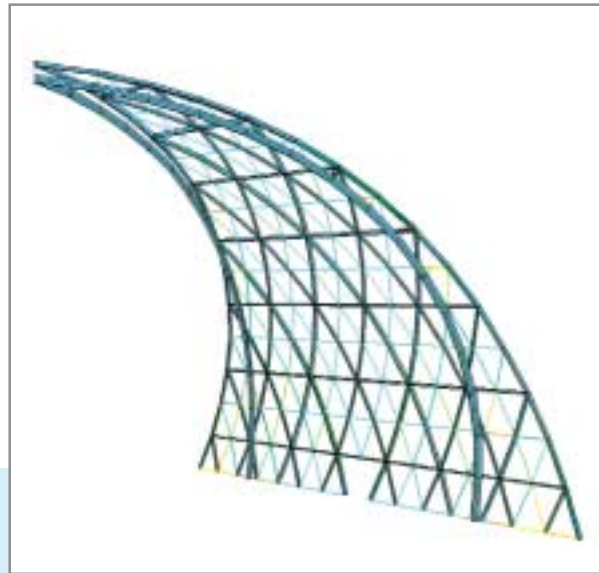
The structure of the glass canopy, which covers the building, is designed to create a smooth surface and roof. The glass canopy is constructed in triangular sections and supported on one horizontal and two diagonal beams. These triangular sections make up the main grid of the load bearing structure. A secondary aluminum structure, also triangular in shape, with smaller spans supporting the flat glass panels.

The building's southeast facade, towards the Boulevard Konrad Adenauer, is made of pre-stressed vertical steel

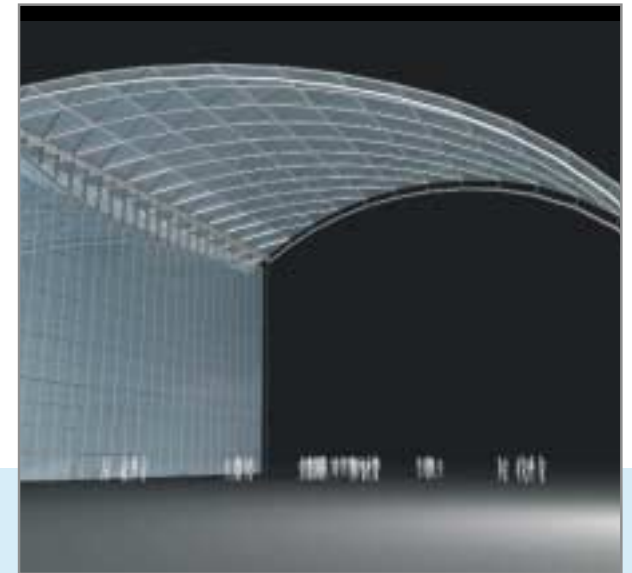
cables attached to a long beam at the top. The insulated glass panels are clamped to the cables thus avoiding secondary framing elements and resulting in maximum transparency and light penetration.



Cable Facade - Atrium Axis 2d



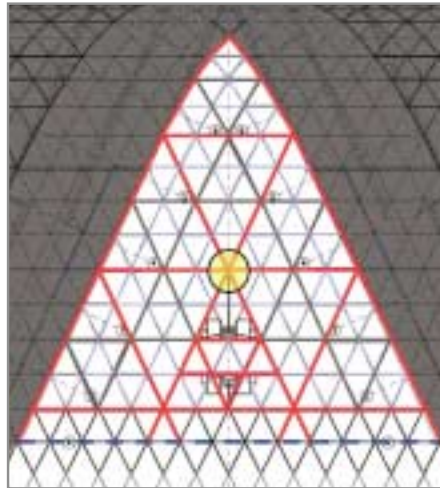
Wintergarden - Finite Element Model



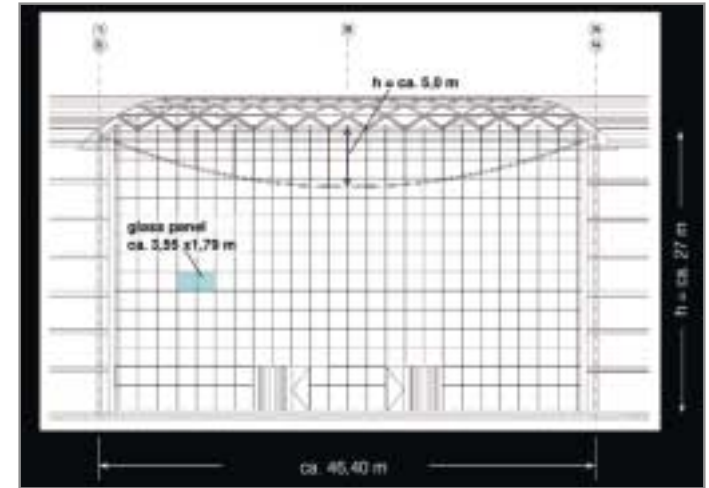
Concrete Structure - Finite Element Model



Atrium structure



Cable Facade - Atrium Axis 2d



Using Natural Materials

The whole building concept is as friendly and as bright as possible and the use of natural materials is central to the design. All materials in the building have been selected for their ecological sustainability.

The windows of internal facades will have a wooden frame. The facades, public and semi public zones will also have wooden frames providing a natural warmth and texture.

The offices will be carpeted and all the office surfaces (walls and ceilings) will be designed to maximize the daylight and the luminance levels.



Cleaning and Maintening Roof and Facade

Boom-Platform

This picture shows a self-propelled telescopic boom platform during the work assignment at the Kempinsky hotel near the Munich airport centre. The boom platform is operated by two persons, either for cleaning and maintaining the facade or for running the boom platform. The cleaning performance using this height access is about 160 m²/h.

Washcat

This picture shows a semi automatic cleaning system called “washcat” during work assignment at the Munich airport centre. The system is automatically guided and is used for buildings with a high proportion of glass panels. The cleaning performance of this system - between 150 and 400 m²/h - is depending on the geometry of the building.



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