

MINERGIE®

Mehr Lebensqualität, tiefer Energieverbrauch
Higher quality of life, lower energy consumption

Balsberg Office Building Modernisation

MINERGIE® lets the «Balsberg» take off...

Practical example

- 1 Largest contemporary MINERGIE® modernisation
- 2 Return to former glory
- 3 A comprehensive energy concept
- 4 Exceptional comfort at the work place as a condition
- 5 Flexible design to meet changing requirements

The Balsberg office building: a comfortable office block – modernised in accordance with MINERGIE® (ZH-500)



MINERGIE®  MADE IN SWITZERLAND

Goal

Energy efficiency at Zurich Airport

The impressive Balsberg office building complex is situated in close proximity to Zurich Airport. Covering a total gross area of 75690 m², this former administrative building of Swissair was fully renovated between 2003 and 2007. Today it offers a vast array of local, national and international firms exceptionally representative office space accommodating some 1800 to 2000 jobs. A modern office building concept designed in accordance to the MINERGIE® standard and a comprehensive range of first class services available at the Balsberg combine to provide an optimal working environment.

The building complex, originally constructed in two phases (1967 and 1974), distinguishes itself through its clearly defined architectonic structure. It is characterized by its adaptability and ease of maintenance. The building is of reinforced concrete construction with 7,20 m x 7,20 m bay size. The building terraces elegantly from the hilly slopes of the Balsberg (from which it obtains its name) down to the motorway. The seven-storey building is situated in a park-like setting and the office spaces are arranged around two large green inner courtyards.



Efficient lighting and ventilation, reduced energy costs

Sustainable regeneration

A MINERGIE® conform modernisation

The modernisation of the Balsberg office building included the upgrade of the building envelope, the interior and the service plants. The work was carried out in three phases to accommodate the partially occupied space during the construction. As a result of precise planning and multiple operations (2 shifts, 6 days a week), it was possible to complete the final phase (11 000 m²) in only 10 weeks.

The architectural concept for modernising the Balsberg office building was based in part on the desire to return the building to its former glory. The intent was to retain the clear architectural character, strengthening the original principles and logic behind the design of the spaces so that they would once again be recognisable. In the very precise structural arrangement, key circulation corridors are led directly to the building façades and therefore naturally lit. This also enabled the creation of new break areas and significantly improved orientation within the building. An added improvement was the use of insulated, rear ventilated façade panels of fine concrete. Although the previously existing strip windows were replaced with new high performance thermal and acoustical windows; their original proportions and arrangement were

retained. The sun shades were moved inwards which created a staggered effect and better integrated the building into the slope of the landscape and nature.



Integration of the Balsberg building in the landscape and nature



Comprehensive energy concept

Keeping energy costs low

The comprehensive energy concept concurrently enables an optimal comfort for building users and reduces energy costs. The concept includes the following:

Heating: The infrastructure was simplified and consequently orientated towards the perimeter of the building. This overall concept also integrated the existing heat generation equipment. Finally, alternative heat sources as well as the existing heating pump system were modernised and incorporated into the concept.

Cooling: The cooling network was expanded to include the office floors. Distribution nodes enabled the integration of cool ceilings. The planning team paid particular attention to importance of efficient routing of piping. The cool ceiling system shows high efficiency with simultaneously low energy use. The concrete ceiling structures are thermally active and used for night time cooling.

Air conditioning: The ventilation is provided by decentralised air handling units, which can be adjusted to meet user requirements. The systems are designed for minimum air changes (hygienic ventilation). The air is blown into the rooms by means of high inductive diffusers, which have been integrated into the cool ceiling.

Sanitary: All sanitary pipes were replaced, including those below grade. This included the water service for the office areas the restaurant kitchen as well as the remaining infrastructure.

Electrical installation: the rental space has been designed to



Flexible interior design options and comprehensive natural light sources – components of repositioning

permit division into grids as small as 3,6 m. The use of a new innovative type of fibre optic cabling ensures that IT/communication demands are met. Additional fibre optic cabling (number and quality) are provided as requested in each zone to meet tenant demands.

Control/guidance system: all systems operate under decentralized, Stand-alone Power Supply (SPS) systems. Both visual and automated checks are performed via the building automation system which is directly connected to the Avireal in-house help desk.

Reorganisation

MINERGIE® as a repositioning element

The modernisation of the Balsberg Office complex was executed by Avireal both as general planner and as general contractor. Today the corporation's headquarters is located in the building and the firm manages for the entire complex. Dr. Marko Virant, CEO of Avireal AG, is convinced of the result of the conversion: «It was the objective of the conversion, to develop a convincing building out of the former Swissair property that would be noted for its flexible layout and design, tailor-made to the requirements of its users. Enhanced by a «modular» range of services, it has been possible to create a pleasant working environment. Adhering to the MINERGIE® standard was an important element for repositioning the building.»

The renovation and regeneration of the Balsberg building has so far has been the largest single MINERGIE® moderni-

sation in Switzerland. Apart from that, the certification at the end of 2003 meant that the millionth square meter of MINERGIE® area had now been achieved in the Canton of Zurich.



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Dr. Marko Virant, CEO Avireal AG

The most important facts in short

Five points on MINERGIE®

- 1** The internationally protected brand MINERGIE® is a quality label for new buildings and modernised old buildings. The joint trusteeship is represented by the economy – trade and industry – as well as the confederation, cantons, municipalities, associations and interested individual persons.
- 2** MINERGIE® offers three standards: MINERGIE® as a broad application in the new building and modernisation market. The MINERGIE-P® standard in contrast is significantly more ambitious. MINERGIE-ECO® additionally awards certified MINERGIE® and MINERGIE-P® buildings for their sustainable construction methods.
- 3** At the centre is the living and working comfort of building users. This comfort is made possible by a high-quality building envelope and comfort ventilation. All MINERGIE® standards guarantee an improved preservation of a building's value.
- 4** The specific energy consumption is the reference variable to evaluate the required building quality. The energy requirement for room heating, water heating, ventilation and air conditioning for MINERGIE® buildings in the category «Administration» is no more than 40 kWh per m² heated floor space and no more than 55 kWh per m² for modernised buildings respectively. These requirements can be fulfilled with commercially available materials, systems and products.
- 5** A database with thousands of MINERGIE® properties is available under www.minergie.ch as is the list of qualified partners and the members of MINERGIE®. The list of MINERGIE® modules helps with selecting subsystems for MINERGIE® buildings.

General information

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Technical information

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Technical Key Figures of the Balsberg Office Building

Location	Zurich Airport
Modernisation period	2003 to 2007
Conversion costs (over 3 phases)	65 million Swiss Francs
Energy reference area	68 242 m ²
U value Roof	0,23 W/m ² K
U value Façade	0,26 W/m ² K
U value Windows	1,1 W/m ² K
U value Glass	0,8 W/m ² K
Primary requirement on building envelope	
MINERGIE®	48 kWh/m ²
Balsberg	35,4 kWh/m ²

Participants

Investor

Winsto AG
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avireal

