

Barnim Service and Administration Centre



The newly built Barnim Service and Administration Centre fills an empty space, over a hectare in size, which was caused during wartime in the middle of the historic old city of Eberswalde (Germany). This ensemble of new buildings not only accommodates the local authorities and the district administrator's headquarters, including a plenary hall, but also has areas for trade and commerce, and a small museum. The "missing piece of the city" is filled by four compact 3-to-4-storey structures, which fit into the existing city structure in terms of form and scale. The interrelationships in the urban space are restored, and the important public buildings are given a new interconnectivity. The requirement that the building be energy-efficient was part of the Europe-wide invitation to tender in the architects' competition. As a result, a planning team with specialists from a broad range of fields, headed by the architect, was already engaged as general planner at an early stage. In compliance with the framework conditions pertaining to architecture, urban development, and occupancy, the building form, glazing, sun protection, facades, and thermal masses were designed to allow high occupant comfort with a low energy requirement. This includes high quality of space and occupancy in the public areas, as well as a sophisticated daylight and artificial lighting concept.



An aerial photograph of the Barnim Service and Administration Centre in Eberswalde.
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Building summary

Project status	
Location	16225 Eberswalde, Brandenburg
Completion	30.06.2007
Inauguration	01.07.2007
Building owner	Landkreis Barnim
Gross floor area	19.113 m ²
Heated net floor area	17.131 m ²
Gross volume	69.109 m ³
Usable floor area (according to EnEV)	12.435 m ²
Key aspects	Heat insulation, Atrium, Daylight planning, Optimised lighting, Ventilation + heat recovery, Regenerative + passive cooling, Thermo-active building element systems, Heat pump, Ecology of building materials

Project description

The German district of Barnim is to acquire a new building for the local authorities in its district capital Eberswalde, which is also to accommodate the district administrator of the Barnim District. Upon completion, the building complex with 15,000 square metres is to be the place of work for around 500 of the local authorities' staff. Up until now, the employees have been distributed across eight different locations.

The new construction fills the empty space which was caused during wartime at Pavillonplatz. Work was conducted to repair the city's structure, in such a way as to carefully join onto the still intact surroundings, and to reconnect existing designs and structures with the objectives of strengthening the identity of the existing public spaces, and of establishing a new public space.

The ensemble of buildings comprises four compact three-to-four-storey blocks with glass-roofed interior courtyards, which fit into the existing old city structure in terms of form and scale. The combined usage for administration, trade, services and culture, acts as a driving force in the multifaceted urban development of the quarter.

Building concept

The new district council building should enable effective administrative processes and citizen-friendly service. Each department receives its own building with an interior courtyard, planted with vegetation. The individual departments are accessed via staircases and elevators in the gate buildings. The service areas are

predominantly organised as combination offices, and are openly arranged around the interior courtyards. The courtyards, planted with vegetation, form a shared centre for the departments' service areas, and are intended to lend the complex a relaxing atmosphere.

Pavillonplatz, as a central area shared by the respective departments, forms a combination zone for the district council building. This is a place where people who work in the district council building can meet, as can those who visit the local authorities, and who use the services. Alongside the district administrator's building, Pavillonplatz also provides exhibition areas for the artwork of Paul Wunderlich, an artist from Eberswalde, who has lent his name to the complex.

In the planning, the key aspects of the approach to energy efficiency were: a building envelope as compact as possible, short internal transit routes, courtyards with greenery as atmospheric fresh-air generators, and a slim building climate concept. Still, each individual building has its own character and infrastructure, and can have its own address and entrance, i.e. parts of the complex could well be used for other purposes.

Energy concept

The significant aspects intended to contribute to low energy consumption include well-insulated facade elements made of wood, with cellulose insulation and thermally insulating triple glazing. A sophisticated daylight and artificial lighting concept, with a large amount of transparent surface area facing the interior combination zones, enables energy-efficient lighting. Furthermore, on the part of the occupants, only very low IT-related internal thermal loads arise.

The bored piles, necessary for the foundation, are equipped with absorber registers which extract warmth from the ground to heat the building, which in turn is cooled in summer as heat from the thermal building mass is released into the ground. Waste heat generated in the building is fed back to the building via ventilation systems with heat recovery efficiency of up to 80%.

As the project is sponsored by the EnOB programme, it was possible to bring in all of the specialist planners necessary for energy efficiency at an early stage, and to conduct simulations which went beyond the normal planning expense. To the same extent, the implementation of innovative technologies such as vacuum insulation and latent heat storage (PCM) was sponsored, as well as the development of an energy-efficient floor-standing lamp with innovative control management.

Performance

Information on this subject will become available as the project continues

Optimisation measures and possibilities

Information on this subject will become available as the project continues

Construction costs and profitability

The contractor's available budget was already clearly defined in the competition, and compliance with this budget already had to be proven within the competition. For a project in constant political focus, in the centre of a small city such as Eberswalde, compliance with the budget was a primary concern during the entire planning and construction process. Despite many alterations requested by the contractor, the specific construction costs were successfully adhered to throughout the entire planning phase, in compliance with the specified budget.

The obligation to issue a public invitation to tender for the construction management, and the subdivision of the work into smaller batches, made it possible to award contracts to high-quality, yet low-cost, construction companies. An architecturally ambitious building with very high levels of quality and comfort, as well as high-quality technical equipment, is built with construction costs of less than €1,300 gross per m² NFA.

Key energy data

Energy indices according to German regulation EnEV (in kWh/m ² a)	
Source energy for heating and domestic hot water (dhw)	18,00
Overall primary energy requirement (according to PHPP, based on net usable area)	93,00
Measured energy consumption data (in kWh/m ² a)	
Source energy for heating and domestic hot water (dhw)	25,50
Total source energy	95,00
Cooling (primary energy - pe)	6,10
Ventilation energy (pe)	20,80

Artificial light (pe)	33,50
Hot water (pe)	9,10

Implementation costs

Costs of implementation in €/m ²	
Construction (KG 300)	920
Technical system (KG 400)	370

These figures represent calculated costs

Net construction costs (according to German DIN 276) relating to gross floor area (BGF, according to German DIN 277)

 **Scientific data from long-run monitoring (in German)**

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