

Energy Strategy Berlin Adlershof 2020+



With the cluster project High Tech – Low Ex, a concept for an energy-efficient further development of the Berlin Adlershof science quarter was developed from 2011 to 2013 with the aim of achieving 30 % primary energy consumption compared with “business as usual”. Its implementation is taking place in sub-projects. With a running time of 2013 to 2016, the first follow-up project “Energy Strategy Berlin Adlershof 2020+” comprises the coordination, planning and networking of energy efficiency measures, in particular for further EnEff projects in Adlershof, the planning of an intersectoral energy infrastructure, the establishment of an energy manager with inter-site tasks, the development and use of quality and risk management tools, as well as collaboration with model districts in Germany, Austria and Switzerland (D-A-CH region) on the topic of “Energy hybrid systems”.



Aerial shot of the Berlin-Adlershof site, taken in May 2013.

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Settlement summary

Project status	<div style="display: flex; align-items: center;"> <div style="width: 100px; height: 10px; background: linear-gradient(to right, #92d050 30%, #ccc 30%);"></div> Realisation </div>
Location of local community	12489 Berlin-Adlershof, Bezirk Treptow-Köpenick, Berlin
Settlement in figures	891.85 km ² total area; 3,490,445 inhabitants
Developer, organizer	WISTA-Management GmbH; Technische Universität Berlin; BTB Blockheizkraftwerks-, Träger und Betreibergesellschaft mbH Berlin
Settlement	Integrated science, business and media centre
Utilisation type	General residential, mixed areas, commerce, industry, special areas
Above-surface gross floor area of the building stock (2010)	1.244.000 m ²
Surface area of the built-on building plots excluding green areas and traffic, before	1.485.703 m ²
Surface area of the built-on building plots excluding green areas and traffic, after	2.787.164 m ²
Commercial area, before	806.833 m ²
Commercial area, after	1.675.064 m ²
Research & technology area, before	358.590 m ²
Research & technology area, after	388.592 m ²
Media & communication area, before	136.645 m ²
Media & communication area, after	163.670 m ²
University area, before	70.157 m ²
University area, after	92.921 m ²
Remaining area, before	113.478 m ²
Remaining area, after	466.917 m ²
Number of accommodation units, after	1.040
Number of jobs, before	14.148
Age structure	Around 41% of the building stock was constructed before 1989. About half of this stock has been renovated. Almost half of the overall building stock was not

	constructed until after 1989.
State of construction and refurbishment	64% of the gross floor area needs to be at least partly renovated, whereby there is also scope for energy efficiency measures.
Heating system	90% of the heating requirement is met by the district heating supply provided by BTB using cogeneration (approx. 70%). BTB uses the following fuels for the district heating supply: hard coal, natural gas and wood (approx. 52%).
Ownership structure	Mixed ownership conditions with currently almost 100 individual owners. The largest single owners are the Federal State of Berlin and WISTA-Management GmbH.
Project themes	Residential buildings, Refurbishment, New buildings, Urban concentration, Commercial and mixed zones, Decentralised solutions, Integrated energy concepts for buildings, Optimising building envelopes, Optimising building technology, Passive house construction method, Local heating and cooling networks, Waste heat utilisation, Heat and cold storage, Cogeneration, Renewable energy sources, Centralised + decentralised energy supply, New urban land use planning, Optimisation of operations, Energy management systems, Project and process management, Financing models

Project description

Project structure

WISTA-MANAGEMENT GMBH (state-owned operating company for the site) is responsible for coordinating the cluster and realising the project. The subsidiaries Adlershof Facility Management GmbH (AFM), and Adlershof Projekt GmbH (AP) as a fiduciary development agency of the State of Berlin, are supporting its implementation.

Project aims

The aim of the project is to develop an exemplary form of organisation for complex EnEff:Stadt projects, which would enable the optimisation and acceleration of innovative individual projects, and guarantee the overall success of the project “minus 30 % primary energy by 2020”. In addition, complex energy facilities for grid-bound energy sources that allow for an energy network in Adlershof are planned. This is taking place with the involvement of international experience and a thorough professional exchange with model districts in the D-A-CH region.

Follow-up projects

The application for the follow-up project “Energy Grid Berlin Adlershof” will soon be submitted by the Technical University of Berlin, the University of Applied Sciences Berlin, and Siemens AG. The aim of this project is to create a network of energy flows, a Smart Grid Alliance, and the associated energy planning guidelines.

Results of the concept phase

With the cluster project High Tech – Low Ex, a concept for an energy-efficient further development of the science quarter was elaborated from 2011 to 2013. The following results were achieved by the project:

Inventory and analysis of energy infrastructure and supply; analysis of existing buildings and building-related implementation concepts for selected properties

Forecasting of future energy demand (primary and final energy, German Energy Saving Ordinance and energy process engineering) of the entire area, including two development paths for the future development of the 47-hectare extension area

Building summaries with suggestions for building performance optimisation for, amongst others, Helmholtz-Zentrum with BESSY II, four institutes of Humboldt University, Studio Berlin, and WISTA properties
Scenarios for supply and transmission rights, and technical options for an open heating network

Analysis and review of implementation options for waste heat technology (waste heat from refrigeration systems, brine networks, with the example of Max Born Institute)

Cooling concept for “Bunsensaal” event building (including adiabatic exhaust air cooling)

Concepts for building-related measures for four reference buildings (WISTA administrative buildings, the “Barracks”, Max Born Institute, and Lise-Meitner-Haus)

Analysis and review of the potential contribution of renewable energy (wind, PV, shallow geothermal energy, deep geothermal energy, aquifer storage, CHP), with the result that aquifer storage, PV, biomethane and CHP should be implemented in light of primary energy savings and economic feasibility; a follow-up application will be submitted

Preliminary investigations for a smart grid and a DMS connected to a ring circuit with 40 companies, 8 consumer units and 2 feed-in points with the result of submitting a follow-up application to implement this

Analysis of building typologies for industrial, commercial and campus-like areas; follow-up application for pilot tests of the instrument of “Energy planning guidelines” to be submitted

Development of a competence network at the site and beyond

Development of an energy efficiency concept for the project area of Berlin Adlershof 2020 with a focus on “Primary energy saving measures”.

Energy characteristics

	before	potential	after	unit
Total area with energy requirement	1.244.000,00			m ²
Final energy requirements (electricity)	108,00			kWh/m ²
Final energy requirements (heat)	104,00			kWh/m ²

 BINE projektinfo publication "Science and business park grows efficiently"