

# Passive House City District Heidelberg-Bahnstadt | Heidelberg, Germany |



Aerial view of Heidelberg with Bahnstadt  
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Office building Stadttor  
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Project scale	large city development
Project type	new build
Building type(s)	apartment house, hotel   hostel   holiday dwelling, office   administration building, kindergarten   day care, school   campus   university, multi family dwelling, public building   church, urban settlement   housing colony, combined flat + office, office   commercial building, fire station, other
Certified by	Ingenieurbüro ebök
Ownership type(s)	privately owned, social housing, public
Total area of region/neighbourhood	1 - 10km <sup>2</sup>
Combined TFA of all built structures	100.000 completed, >100.000 in building permission procedure/under construction m <sup>2</sup>
Construction type(s)	masonry construction, timber construction, insulated concrete forms, mixed construction (timber and masonry)
Average gross construction costs	2.200 (estimated, no average costs determined) /m <sup>2</sup>
Avg. building structure + mech. systems costs	1.900 (estimated, no average costs determined) /m <sup>2</sup>
Wall system(s)	masonry wall with exterior insulation and finishing system, lightweight timber construction, wall with ventilated facade, other
Window system(s)	timber, timber-aluminium, PVC (vinyl), aluminium
Ventilation system(s)	plate heat exchanger (heat only), rotary wheel (heat only)
Frost protection for ventilation system(s)	electric pre-heater, hydraulic pre-heater, rotary wheel heat exchanger, indoor air (partly recirculation in case of frost)
Heating system(s)	district heating
Average heating demand	14 (estimated) kWh/(m <sup>2</sup> a)
Average heating load	9 (estimated) W/m <sup>2</sup>
Cooling system(s)	none / not applicable, manual night ventilation, automated night ventilation, central heat pump chiller
Dehumidification system(s)	none / not applicable, combined with cooling, refrigerative dehumidifier in supply air
Average cooling demand	no average cooling demand determined kWh/(m <sup>2</sup> a)
Average total cooling load	no average cooling load determined W/m <sup>2</sup>
Average primary energy demand	not determined kWh/(m <sup>2</sup> a)
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Apartment houses at Schwetzingter Terrasse  
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Kindergarten Schwetzingter Terrasse  
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Student homes "Campus Viva"  
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Bahnstadt, a new city district, is arising on the area of the former freight and switch yard in Heidelberg. It will be the first district consisting entirely of buildings constructed in passive house standard. With its 116 hectares, it is one of the largest urban development projects in Germany and, as far as we know, it will be the largest area of passive houses in the world. It is developing dynamically, significantly faster than projected and with high quality standards. The ground-breaking ceremony took place in 2010, starting the construction of a building supplies store. By now, 100,000 square metres of useable surface have been completed – including residential buildings, kindergarten, retail outlets, offices and laboratories. More than 100,000 square metres are under construction or waiting for a building permit and the main part of it will be occupied in 2013 – further residential buildings and offices, halls of residence for students and a hotel. Furthermore a cinema and a shopping center are in planning.

The Bahnstadt energy strategy was developed in cooperation with ebök. It was adopted by Heidelberg City Council and integrated into local building regulations and building permission process. The energy strategy does not only involve technical standards but also obligations in property purchase agreements, city development contracts, energy consulting, quality management, public relations and financial incentives.

The energy quality management was developed based on passive house certification. The regional energy agency KiIBA is assigned to checking the calculations of PHPP before building permission is given as well as during the process of planning. Further steps of quality management are advice and control at the building sites, Blower-Door-Tests, final acceptance, and a concluding update of the PHPP.

Thanks to its district heating and electricity supply based on CHP from a wood cogeneration plant, Bahnstadt is a zero-emission district.

In the marketing strategy, the Bahnstadt is praised as a particularly ecological district. The image of a carbon neutral and ecological district is arranged actively in leaflets and during events. Purchasers name the passive house norm as an important reason for their buying of accommodations in the Bahnstadt during sales conversations.



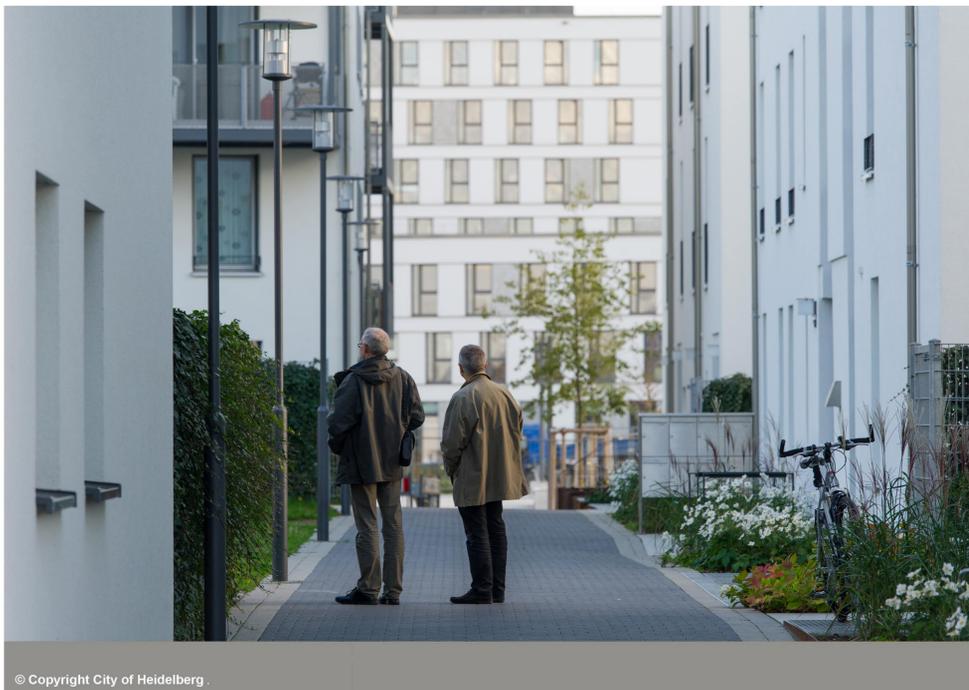
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Terrace houses at the Promenade  
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