

FACT SHEET

1078 / Weltpostpark Bern

Residential development Weltpostpark Bern

Location

Weltpoststrasse 1-3, 3015 Bern, Switzerland

Involved parties

Architecture	SSA Architekten AG BSA SIA, Basel
Owner	Allianz Suisse, Immobilien AG, Bern
Client	Swiss Prime Site Immobilien AG, Olten
Total contractor	Frutiger AG Generalunternehmung, Gümüli
Building physics	Kopitsis Bauphysik AG, Wohlen
Landscaping	Fontana Landschaftsarchitektur GmbH, Basel
Structural engineers	Schnetzler Puskas Ingenieure AG, Basel/ WAM Planer und Ingenieure AG, Bern
HVAC-planning	Eicher+Pauli Luzern AG
Electrical planning	Eproplan AG, Bern
Sanitation planning	Grünig & Partner AG, Liebefeld-Bern
Sustainability	CSD Ingenieure AG, Liebefeld
Fire safety	AFC Air Flow Consulting AG, Zürich / GVB Services AG, Ittingen

Timeline

Competition (1. prize)	August 2014
Permission structure plan ÜO	December 2016
Building permit granted	July 2017
Construction begin	February 2018
Completion House B	November 2019
Occupation of House B	December 2019
Completion House A	February 2020
Completion House C	March 2020
Completion surrounding environment handover	June 2020

Dimensions

Building height	19.20 m
Building volume	82,500 m ³
Above ground level floor space	19,400 m ²
Total floor space	25,500 m ²
Number of (rental) apartments	170
Mix of apartment styles	15 x studios, 35 x 1-bed, 64 x 2-bed, 45 x 3-bed, 11 x 4-bed
Site area	12,700 m ²
Investment costs	CHF65m

Energy concept

The project uses 100% sustainable energy. All heating, including hot water, is done through ice storage systems. A heat pump extracts energy from the water, which then turns to ice. This storage system is replenished throughout the year with the help of roof-mounted absorbers and an additional waste water heat pump. The waste water heat pump also serves to minimise the performance gap (difference between theoretical and actual user-based energy demands). Although ice storage systems and waste water heat pumps have been around for some time, the combined use of the two systems has never been demonstrated. The energy concept is therefore listed as a "demonstration project" by the Swiss Energy Department.

Assumed energy demand	Approx. 635 MWh/a
Heating requirements	Approx. 360 KW
Volume of ice storage system	1,400 m ³ , total of 4 units
Energy datum surface	House A: 6,313 m ² House B: 6,532 m ² House C: 6,568 m ²
Heat transmitting building envelope index	House A: 0.99 House B: 0.97 House C: 1.06
U-values	
Windows	U _w = 0.80 W/(m ² K) – windows / U _g = 0.60 W/(m ² K) – glass
Floor to unheated	0.16 W/(m ² K)
Walls to exterior	0.18 W/(m ² K)
Roof to exterior	0.11 W/(m ² K)
Energy supply	
Heating supply	Heating: Multistage brine water heat pump monovalent with ice storage system and solar air absorbers for regeneration of ice storage system Hot water: Multistage high-temperature brine water heat pump monovalent with grey water waste heat utilisation or ice storage system (as with heating)
Solar collectors	Roof-mounted. Used exclusively for warming the primary circulation of the heat pumps. House A + B: 81 collectors à 2.34 m ² each House C: 88 collectors à 2.34 m ²
Ventilation	Yes

Energy calculation	
Heating requirements	House A: 15.8 kWh/m ² a (actual) / 26.9 kWh/m ² a (SIA 380/1) House B: 16.1 kWh/m ² a (actual) / 26.7 kWh/m ² a (SIA 380/1) House C: 19.2 kWh/m ² a (actual) / 28.1 kWh/m ² a (SIA 380/1)
Hot water requirements	29.1 kWh/m ² a
Rated energy index	House A: 26.3 kWh/m ² a House B: 26.8 kWh/m ² a House C: 33.8 kWh/m ² a
Further	extensive roof greening
Certifications	Minergie ECO label, SIA-Efficiency Path Energy (SIA 2040)

Minergie

Minergie is a registered quality label for new and refurbished buildings. This label is mutually supported by the Swiss Confederation, the Swiss cantons along with trade and industry and protected against unlicensed use. It focuses on the residential and working comfort of building users. This comfort is achieved through high-grade building insulation. A requirement for all Minergie labels is a controlled mechanical ventilation. Minergie buildings also are characterised by a very low demand for energy and a use of as high as possible percentage of renewable energies. Minergie sets standards for quality control in planning, construction and building use. The three already common building standards Minergie, Minergie-P and Minergie-A ensure that the highest quality and efficiency levels are achieved already during the planning process. In addition, the ECO suffix also considers health and construction ecology aspects.

SIA-Efficiency Path Energy (Effizienzpfad Energie (SIA 2040))

By 2050 the population of Switzerland is set to use two thirds less energy than today, the emissions of greenhouse gasses are even set to be reduced by a quarter below today's levels. The SIA-Efficiency Path Energy (SIA 2040) provides the basis for the realisation of the target of the 2000-Watt society in the building sector. The SIA-Efficiency Path Energy is characterised by an optimised energetic approach: besides considering operating energy it also takes into account the grey energy and location determined mobility. A decisive innovation was achieved by also managing to establish target values for greenhouse gas emissions.

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