

Explorer Hotel Kitzbühel

Tirol, Austria

Hotel

New Build

PHI Database ID#: 5025

Certification Goal:



Status: **Certified**

Size: 3485 M2 TFA with 100 Guest Rooms

Description: Located 20 minutes from the ski paradise of Kitzbühel, this Explorer Hotel is a net-zero building powered by 100% renewable energy sources.

Climate Zone: Cold-Temperate

Team:

Architect/Designer:

Renn Architekten, Fischen
<https://renn-architekten.com/>

Building Services:

TB Pro-Plan GmbH (HKLS),
TB Rendl Planungs GmbH (Elektro)
<https://www.pro-plan.at/>

Building Physics:

Herz & Lang GmbH
<https://www.herz-lang.de/de/>

Statics

ZT DI Carlo Chiavistrelli GmbH, HANEL
Ingenieure (St. Johann)
<https://www.ib-hanel.at/>



"High Five" is the motto for the Explorer Hotel Kitzbühel in St. Johann (Tyrol). This Passive House hotel was the fifth to open in the Alps in 2016. The Explorer Hotels are climate-neutral buildings or net zero-emission buildings, i.e. 0% emissions with 100% comfort. They offer the highest building standard thanks to Passive House construction and extremely low follow-up maintenance costs. Both heat and electricity are obtained from 100% renewable energy sources.



The heat requirement is largely covered by "passive" sources such as solar radiation and waste heat from people and technical equipment. Thanks to the new battery storage technology and efficient use, the degree of self-use of the PV electricity has been significantly increased. With this concept, in contrast to comparable hotels, 70% total energy savings and 85% heating energy savings can be achieved. The result is a positive perception of space coupled with low energy consumption.

Thermal Envelope

Exterior Wall:

Shingle facade

Internal plaster, reinforced concrete (200 mm), mineral fiber insulation (120 + 160 mm), timber substructure (24 mm), shingle facade
U-value = 0.123 W/(m²K)

Basement Floor/Slab:

Underground parking ceiling

Flooring, screed (40 mm), impact sound insulation (35 mm), reinforced concrete ceiling (250 mm), mineral wool insulation board (160 mm), cementitious non-combustible wood wool multi-layer board (115 mm), rendering system
U-value = 0.147 W/(m²K)

Roof:

Plasterboard (15 mm), static air layer (30 mm), OSB (18 mm), insulation between rafters (160 + 260 mm), roof boarding (18 mm)
U-value = 0.092 W/(m²K)

Frame:

Trocal, 88+

PVC-window, thermal bridge-free installation
U_w-value = 0.74 W/(m²K)

Glazing:

Triple thermal protection glazing

U_g-value = 0.53 W/(m²K)

g-value = 56 %

Mechanical Systems:

Ventilation:

Rosenberg GmbH, Airbox T60-13R, Airbox T60-2013
Central comfort ventilation system with heat recovery (heat availability level about 82%)

Heating:

Renewable district heating (local biomass - combined heat and power station), heat distribution via radiators as well as panel heating and cooling

Domestic Hot Water:

Renewable district heating (local biomass - combined heat and power station)

Onsite Renewable Energy:

Large photovoltaic system, battery storage device with intelligent energy management system

PHPP Values

Climate:

Cold

Airtightness:

n₅₀ = 0.4/h

Annual Heating Demand:

15 kWh/(m²a)

Heating Load:

17 W/m²

PE Demand:

172 kWh/(m²a) on heating installation, domestic hot water, household electricity and auxiliary electricity calculated according to PHPP



The hotel features modern rooms with plenty of storage space and a panoramic window view. A Finnish sauna, steam bath, infrared cabin, relaxation room, and fitness area are also located on the property. Four public electric vehicle charging stations are available in the underground car park.



Excellent insulation means the building requires very little heating energy. Energy-efficient appliances and lighting systems mean utility bills stay low. LEDs, energy-saving light bulbs, and motion detectors are used throughout the building, extending environmental savings and stewardship. Guests are able to plan a sustainable holiday and feel completely at ease in a comfortable, efficient Passive House building.