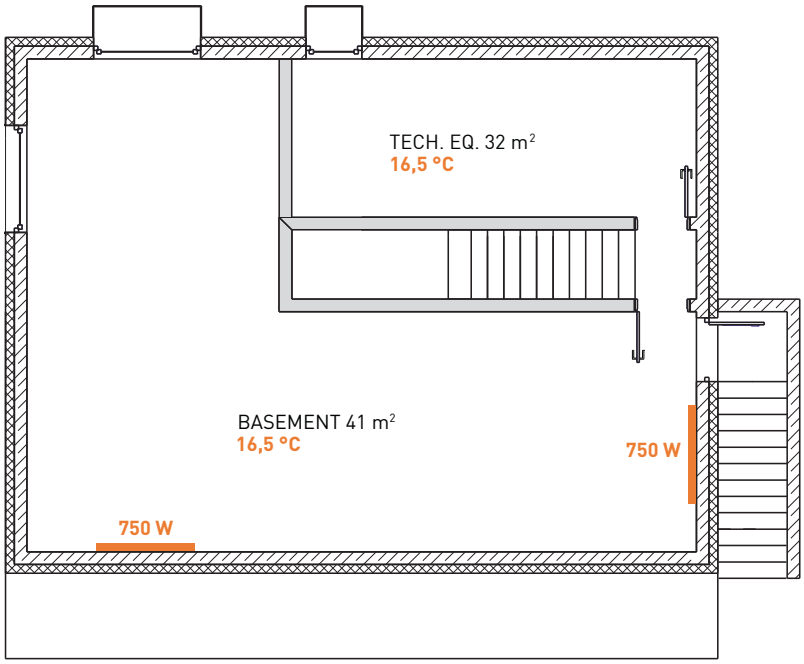
CASE STUDY

ETHERMA ZERO EMISSION HOME

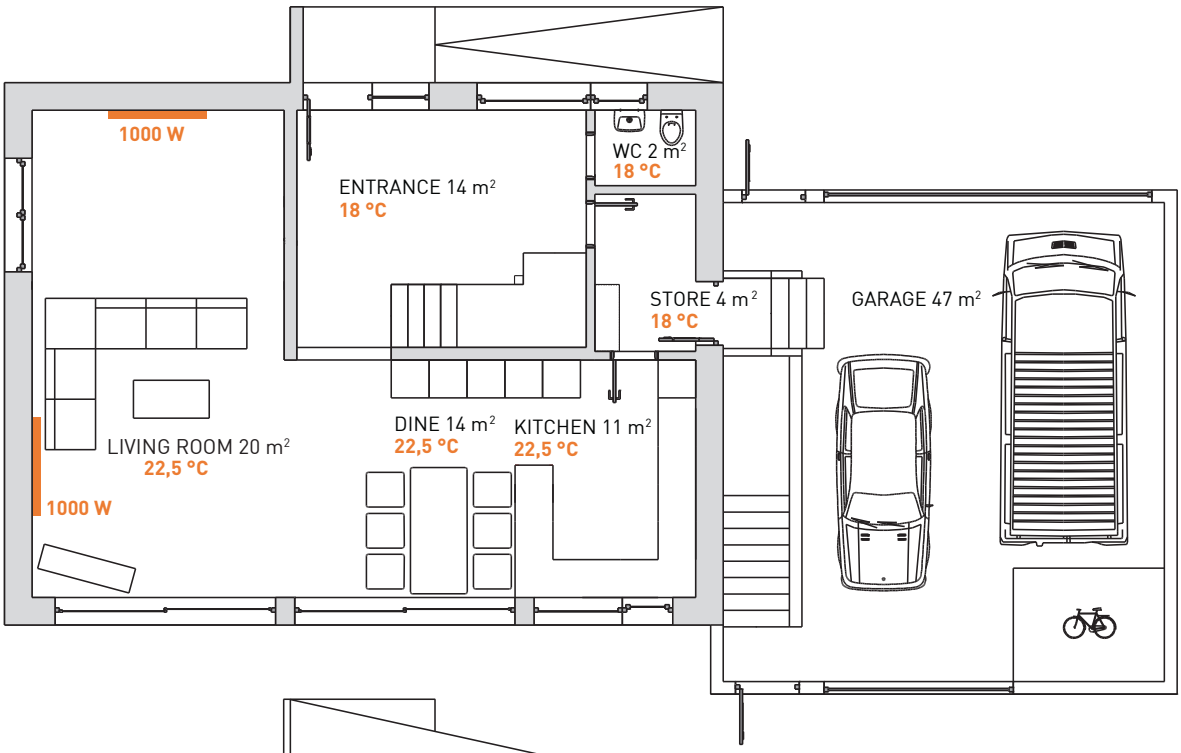
PRIVATE HOME BADEN-WÜRTTEMBERG

40 YEARS ETHERMA° INGENIOUS HEATING

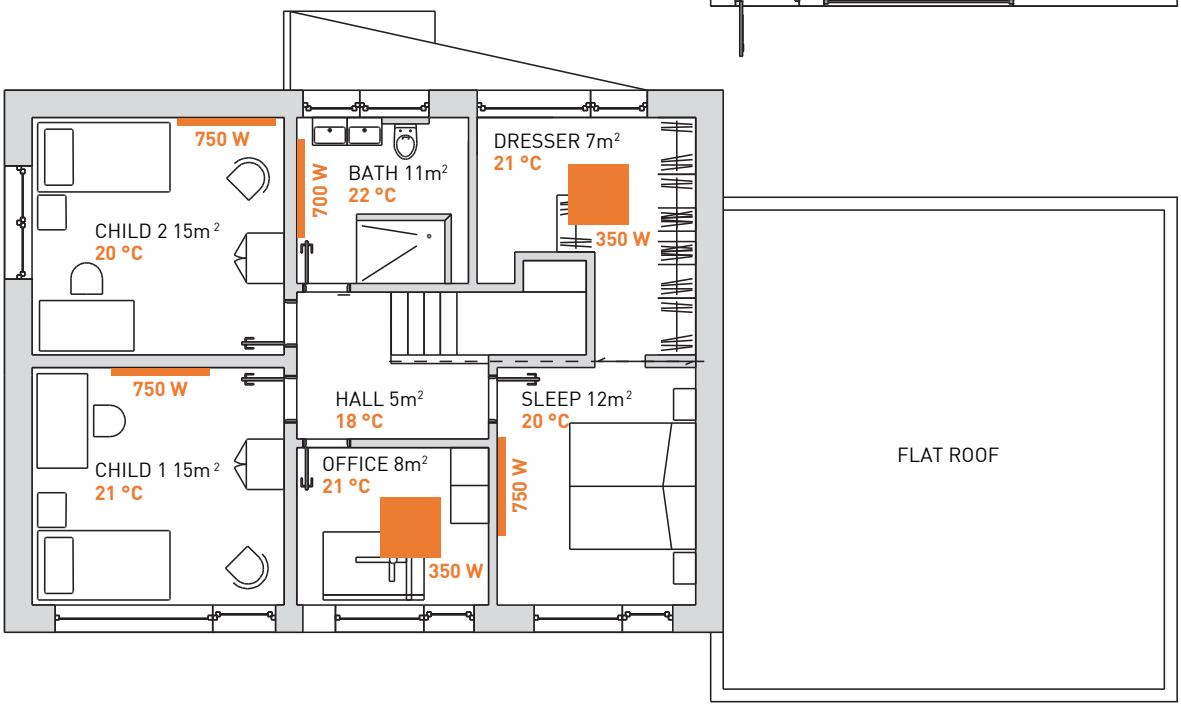
UG


TECH. EQ. 32 m²
16,5 °C
BASEMENT 41 m²
16,5 °C
750 W
750 W

GF


1000 W
ENTRANCE 14 m²
18 °C
WC 2 m²
18 °C
STORE 4 m²
18 °C
GARAGE 47 m²
LIVING ROOM 20 m²
22,5 °C
1000 W
DINE 14 m²
22,5 °C
KITCHEN 11 m²
22,5 °C

1F


750 W
CHILD 2 15m²
20 °C
700 W
BATH 11m²
22 °C
DRESSER 7m²
21 °C
350 W
750 W
HALL 5m²
18 °C
SLEEP 12m²
20 °C
CHILD 1 15m²
21 °C
OFFICE 8m²
21 °C
750 W
350 W
FLAT ROOF

The ZERO EMISSION HOME is a reality. Located in the middle of Germany, in Baden-Württemberg, this home is heated solely with infrared heating systems and what's more, it produces more power than it consumes. In 2017, a young family from Gammertingen fulfilled their dream of owning their own home – they have called this 221m² space their own ever since. Energy sustainability and self-sufficiency played a major role in the young family's planning process. It was therefore clear from the very start that they would generate their own electricity using a photovoltaic system on the roof. This electricity is used for heating, among other things – because the entire house is heated with infrared heating from ETHERMA. Combining this with a battery storage system and our Smart Home solution brings together all of the building blocks for a ZERO EMISSION HOME. "With a ZERO EMISSION HOME, we can actively contribute to protecting our environment while reducing our own costs at the same time. An efficient, modern heating system is the key to this", says the homeowner. Modern buildings have an extremely low heat requirement, and traditional heating solutions are often oversized in this setting. An ideal combination was developed together with the ETHERMA Technical Team, who have more than 40 years of experience to draw on. Electric heating systems can be used in a variety of ways – depending on the requirements, they can be installed in the form of underfloor heating or as wall- or ceiling-mounted infrared heating systems. Their main features include easy installation, low investment costs, or maintenance requirement and extended lifespans.

ECO-POWER AND PHOTOVOLTAIC SYSTEMS MAKE CO_2-FREE HEATING POSSIBLE

Since the young family moved in, they have kept precise records of their energy consumption. Over the course of the 2020 accounting year, the following picture emerged: the photovoltaic system produced approximately **10,675 kWh** of electricity, whereas their own consumption was **4,933 kWh** – so they fed more into the mains grid **(5,742 kWh)** than they consumed themselves. The power consumption for the entire house was **10,012 kWh** – of which **6,114 kWh** was for heating & hot water and **3,898 kWh** for use around the house. Since demand for heating electricity is acyclic, eco-power must be purchased in winter, while in summer, electricity can be fed into the mains grid.

FAREWELL TO "ELECTRICITY IS SO EXPENSIVE"

If you subtract the electricity that you feed into the mains from that which you purchase, your total monthly electricity cost is an unbelievable **€ 98.18.-** for household use, hot water and heating.

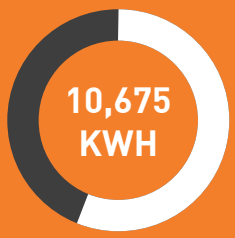
Heating with electricity is no longer an expensive proposition. The future of heating is well and truly with us, and the ZERO EMISSION HOME is a reality.

PROJECT DETAILS

+ Built in 2017
+ LIVING AREA 147m² + 74m² = 221m²
+ PLZ 72501, Gammertingen, Baden-Württemberg
+ 741 m above sea level
+ 10 LAVA® infrared heating systems with a total output of 7.2 kW installed

ELECTRICITY CONSUMPTION

Electricity from photovoltaic system: 4,933 kWh
Electricity purchase: 5,079 kWh



PHOTOVOLTAIC YIELD

Self-consumption: 4,933 kWh
Mains power supply: 5,742 kWh

CONSUMPTION

Heating & hot water: 6,114 kWh
Household electricity: 3,898 kWh

COST CALCULATION*

	ELECTRICITY 2021
ELECTRICITY PURCHASE excluding bonuses 5,079 kWh @ average 31.89 cents/kWh	€ 1,619.69
PHOTOVOLTAIC FEED 5.742 kWh @ average 7.69 cents/kWh	- € 441.56
TOTAL COSTS electricity, heat, light, household, hot water	€ 1,178.13

€ 98.18
per month

*Actual consumption values for full year 2020 and average electricity costs, and/or feed-in costs in Germany, basis 2021

ETHERMA ePLANNER 2.0

Easy planning for electric underfloor and infrared heating systems – you are just a few clicks away from a ready-made heating concept at www.etherma.com/eplanner

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