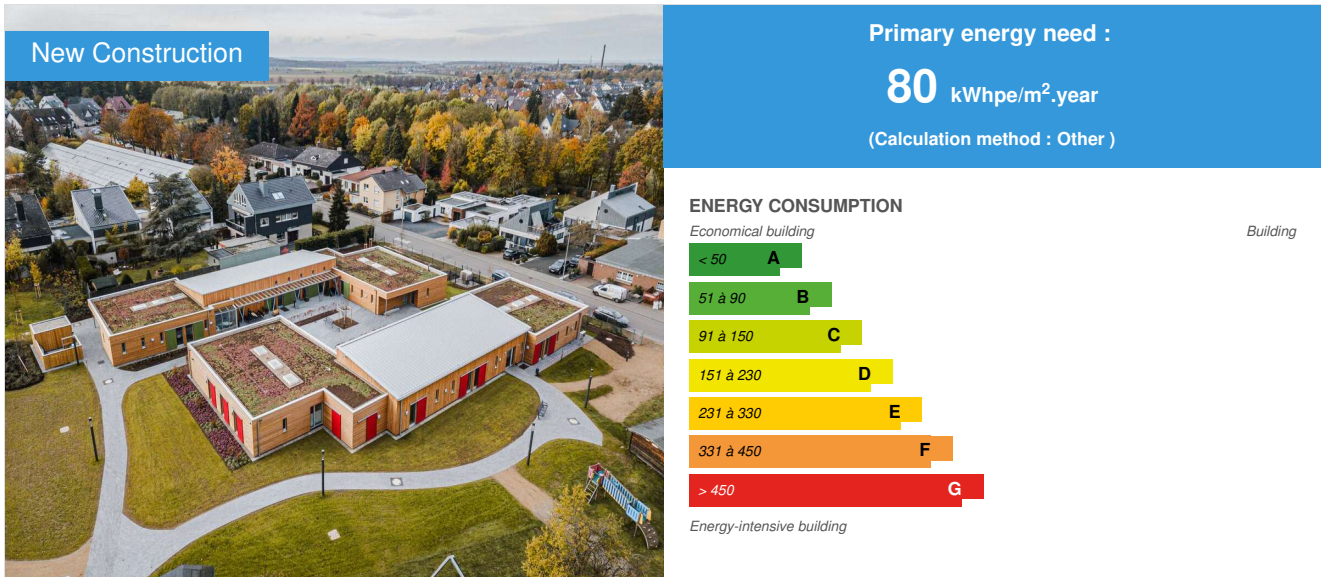


## LVR Boarding school, Euskirchen

by Marc Mevißen / 2021-04-06 09:47:23 / Deutschland / 2819 / DE



**Building Type** : School, college, university

**Construction Year** : 2018

**Delivery year** : 2018

**Address 1 - street** : Augembroicher Straße 49 D - 53879 EUSKIRCHEN (NORDRHEIN-WESTFALEN), Deutschland

**Climate zone** : [Cfb] Marine Mild Winter, warm summer, no dry season.

**Net Floor Area** : 443 m<sup>2</sup> Other

**Construction/refurbishment cost** : 6 906 370 €

**Cost/m2** : 15590 €/m<sup>2</sup>

**Certifications** :



### General information

For the Landschaftsverband Rheinland (LVR), a total of four boarding school residential buildings for 8 pupils each with the special focus on "hearing and communication" were built. The single-storey buildings without basements are built in partially prefabricated timber frame construction. Each of the four residential buildings has four single and two double rooms. Ecological, resource-saving building materials and energy-saving construction methods were the basis for planning and execution. Both the new boarding school buildings and the associated outdoor area with its diverse play areas in the open spaces are barrier-free. For capacity reasons, two of the existing group houses, which were gradually dismantled until the completion of the entire construction project, had to remain in operation. Thus, the new boarding school buildings were realised in two main construction phases during ongoing operation.

[See more details about this project](#)

## Data reliability

Assessor

## Photo credit

Marc Mevißen

## Stakeholders

### Contractor

**Name** : RoA Rongen Architekten PartG mbB

**Contact** : Ludwig Rongen, info@roa.eu, Propsteigasse 2 41849 Wassenberg

<https://www.rongenarchitekten.com>

### Construction Manager

**Name** : Siemons & Hermann

### Stakeholders

**Function** : Others

Schwinn Ingenieure

**Function** : Others

Ingenieurbüro Knabben + Korbitza

### Owner approach of sustainability

-Ecological, resource-saving building materials and energy-saving construction method

-Green flat roofs

### Architectural description

On the property at Augenbroicherstrasse 49, 48 children were accommodated in 6 existing bungalows from the 1960s. Due to serious structural defects in the existing buildings, the LVR decided to demolish the old boarding school bungalows and replace them with new buildings. The four passive house boarding school residential buildings were built using a partially prefabricated timber frame construction and each have room for 8 residents in four single and two double rooms. Ecological, resource-saving building materials and energy-saving construction methods were the basis for planning and execution. Wood, a renewable and thus resource-saving main building material, was chosen. In addition, only ecologically safe and recyclable building materials were used. Both the new boarding school buildings and the associated outdoor area with its diverse play areas in the open spaces are barrier-free. For capacity reasons, two of the existing group houses, which were gradually dismantled until the completion of the entire construction project, had to remain in operation. Thus, the new boarding school buildings were realised in two main construction phases during ongoing operation.

## Energy

### Energy consumption

**Primary energy need** : 80,00 kWhpe/m<sup>2</sup>.year

**Primary energy need for standard building** : 95,00 kWhpe/m<sup>2</sup>.year

**Calculation method** : Other

**More information** :

Heating demand 14 kWh / (m2a) calculated according to PHPPPE demand (non-renewable primary energy) 80 kWh / (m2a) for heating, hot water, auxiliary and household electricity calculated according to PHPPPER demand (renewable primary energy) 83 kWh / (m2a) for heating, Hot water, auxiliary and household electricity calculated according to PHPP

### Envelope performance

**Envelope U-Value** : 0,13 W.m<sup>-2</sup>.K<sup>-1</sup>

#### More information :

External wall timber frame construction: Fermacell GFP 10mm insulation WLG 040 60mmFermacell GFP 13mm OSB board 18mmFachdämmung WLG 040 280mmDWD board 16mmU-value = 0.133 W / (m2K) basement ceiling / floor slab Floor slab: flooring anhydrite screed on system slab WLG 300mm -Value = 0.103 W / (m2K) roof flat roof: system structure green roof with sealing 160mm insulation 280mm cross-laminated timber ceiling 140mmU-value = 0.081 W / (m²K) monopitch roof: metal cladding insulation WLG 032 430mm cross-laminated timber ceiling 120mmU-value = 0.081 W / (m²K) U-value = 0.081 W / (m²K) U-value = 0.081 W / (m²K) / (m2K) Window frame wood-aluminum window IV 78 passive, IV 78 passive wood-aluminum window Uf value = 0.72 W / (m²K) U w value = 0.85 W / (m2K) Glazing triple thermal insulation glazing U g- Value = 0.6 W / (m2K) g value = 53% entrance door wood-aluminum-glass system U d-value = 0.85 W / (m2K)

Air Tightness Value : 0,48

## Renewables & systems

### Systems

#### Heating system :

- Geothermal heat pump

#### Hot water system :

- Gas boiler

#### Cooling system :

- Solar cooling
- No cooling system

#### Ventilation system :

- compensated Air Handling Unit
- Double flow heat exchanger

#### Renewable systems :

- Heat Pump on geothermal probes

PER demand (renewable primary energy): 83 kWh / (m2a) on heating system, hot water, household electricity and auxiliary electricity, calculated according to PHPP

## Costs

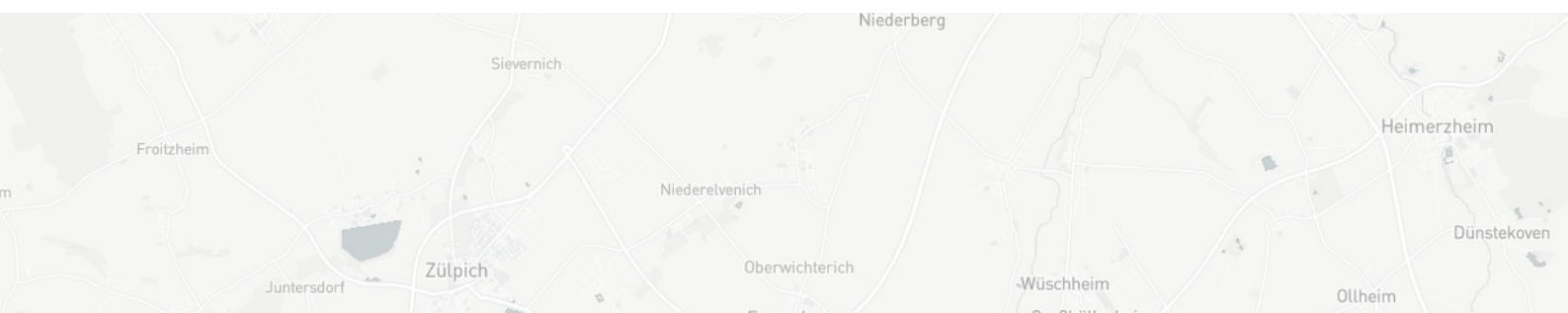
### Construction and exploitation costs

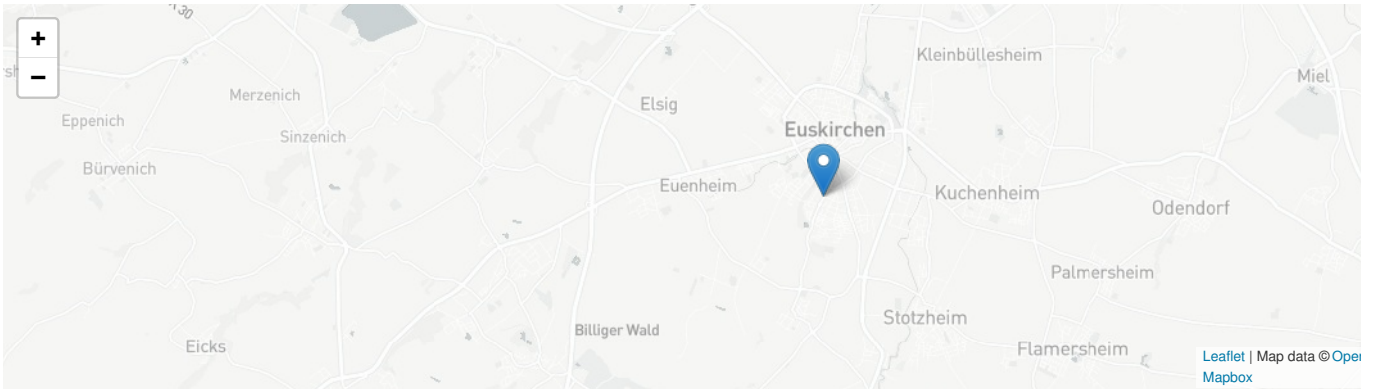
Total cost of the building : 10 374 617 €

## Contest

### Reasons for participating in the competition(s)

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