Student Residence 42! The answer to all questions

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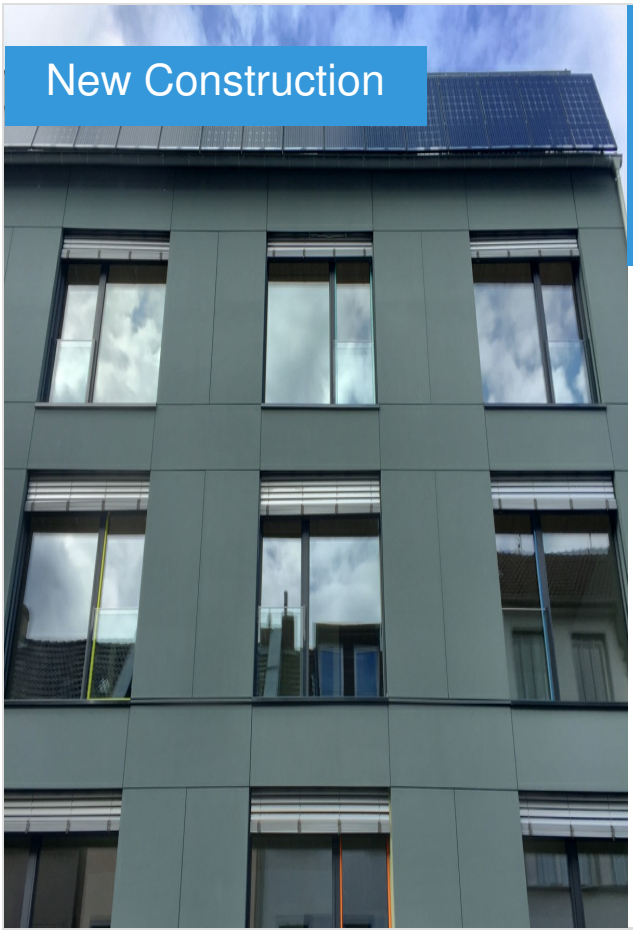

Primary energy need :

14.4 kWhpe/m².year

(Calculation method :)

ENERGY CONSUMPTION

Economical building *Building*

- *< 50* **A**
- *51 à 90* **B**
- *91 à 150* **C**
- *151 à 230* **D**
- *231 à 330* **E**
- *331 à 450* **F**
- *> 450* **G**

Energy-intensive building

Building Type : Student residence
Construction Year : 2017
Delivery year : 2017
Address 1 - street : 53115 BONN, Deutschland
Climate zone : [Dwa] Humid Continental Hot Summer, severe, dry winter

Net Floor Area : 1 215 m²

Construction/refurbishment cost : 2 630 000 €
Cost/m2 : 2164.61 €/m^2

Certifications :

Proposed by :

General information

A lighthouse project of ecological construction, centrally located in Bonn.With a construction that combines ecology and economy, the innovative project demonstrates that timber construction can be the answer to the question of how to reconcile sustainability and future viability in multi-storey housing construction.In addition to the maximum use of wood from the supporting structure to the façade to the interior, this building was completely insulated with cellulose. For the first time in a building of its kind and size. Even the fire walls were made of wood.Large rooms, sun, fresh air, bright rooms, high quality of stay with low primary energy use. Classic investor models were interpreted quite differently here: a partnership approach between investor and architect. All approaches were questioned and optimized for sustainability.The building achieves a plus energy standard (based on the passive house construction method). Through an innovative building automation, all energy services are controlled and thus the own electricity consumption is maximized.An unbelievable living comfort is achieved while at the same time minimizing primary and final energy costs.

See more details about this project

www.42-bonn.de

Data reliability

3rd part certified

Stakeholders

Stakeholders

Function : Investor

Projekt 42! GbR

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https://www.42-bonn.de

Contracting method

Lump-sum turnkey

Owner approach of sustainability

The post-war house on the inner city plot was dilapidated. The aim was to create a sustainable student accommodation, which benefits investors, users and the environment.

Architectural description

Wood as a building material should find maximum use. Large rooms, sun, fresh air, bright rooms, high quality of stay with low primary energy use. Classic investor models were interpreted quite differently here: a partnership approach between investor and architects. All approaches were scrutinized and optimized for sustainability.

Die Architekten haben den nachhaltigen Ansatz in vielen Details auf die Spitze getrieben Beispielsweise die Kellerdaemmung ebenfalls in Zellulose ausgefhrt....

If you had to do it again?

Would we go the way even more consistently and make even fewer compromises.

Building users opinion

The residents are consistently involved in the residential principle. You should learn sustainability! We are currently harvesting lettuce and vegetables from our own garden. The students have very quickly appreciated the difference in comfort. The high quality of living speaks around and the demand is very high!

Energy

Energy consumption

Primary energy need : 14,40 kWhpe/m^2.year

Primary energy need for standard building : 38,00 kWhpe/m^2.year

Calculation method :

Final Energy : 8,02 kWhfe/m^2.year

More information :

Heating: 3200 kWh / a absolutely, covered by photovoltaic = 100kWh / a per apartment.

Envelope performance

Envelope U-Value : 0,10 W.m^{-2}.K^{-1}

More information :

Wood construction with cellulose insulated

Building Compactness Coefficient : 0,23

Indicator : EN 13829 - n50 » (en 1/h-1)

Renewables & systems

Systems

Heating system :

- Heat pump

Hot water system :

- Other hot water system

Cooling system :

- Radiant ceiling

Ventilation system :

- Double flow heat exchanger

Renewable systems :

- Solar photovoltaic
- Heat Pump on geothermal probes
- Heat pump

Renewable energy production : 80,00 %

PV deckt Bedarf an Heizung und WW sowie Teile des Nutzerstroms

Environment

Water management

Toilet flushing over rainwater

Indoor Air quality

VOC Sensoren

Comfort

Calculated indoor CO2 concentration :
600

Products

Product

Highly specialized sol-silicate facade paint with photocatalytic effect.

Keimfarben

http://www.keimfarben.de

Product category :

Highly specialized sol-silicate facade paint with photocatalytic action. Photocatalytically active, reduces harmful gases (eg NOx, VOC's) and organic contaminants.

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cellulose

Isocell

http://www.isocell.at

Product category :

First building of its kind completely insulated with cellulose!

drexel und weiss

http://www.drexel-weiss.at

Product category :

Costs

Construction and exploitation costs

Renewable energy systems cost : 80 000,00 €

Total cost of the building : 3 260 000 €

Urban environment

City center, building, central, short distances to the university

Land plot area

Land plot area : 540,00 m^2

Built-up area

Built-up area : 260,00 %

Green space

Green space : 280,00

Parking spaces

70

Building Environnemental Quality

Building Environmental Quality

- indoor air quality and health
- acoustics
- comfort (visual, olfactive, thermal)
- waste management (related to activity)
- water management
- energy efficiency
- renewable energies
- maintenance
- building end of life management
- building process
- products and materials

Contest

Building candidate in the category

Energie & gemäßigtes Klima

Low Carbon

Smart Building

Abstimmung der Internet-Benutzer

Großer Preis - Nachhaltiges Bauen

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