

Object name

**CASA PASIVA POLITEHNICA****Bucuresti Romania**

Object photo



## Object description

The project consists in designing and construction of two family semi-detached houses according to the Passive House concept, adapted to the Romanian climate conditions. It is developed under the National R&D project INOVARE 2008.

In order to achieve the imposed aims it will be build semidetached houses that fulfill the PH criteria (annual consumption for heating/cooling <math><15 \text{ kWh/m}^2 \text{ year}</math>, total primary energy <math><120 \text{ kWh/m}^2 \text{ year}</math>, indoor temperature >math>>20\text{degC}</math> in winter and in summer <math><26 \text{ degC}</math>, compact form and good insulation, South orientation and shading elements, air tightness envelope, passive preheating fresh air, efficient recovery of evacuated heat air with an heat air-air exchanger, domestic hot water prepared with solar panels or heat pumps) adapted to the Romanian climate conditions.

The results are validated using Passive House Planning Package tools and finally sent to PassivHaus Institut Darmstadt for certification. The location is near Power Engineering Faculty-Universitatea POLITEHNICA Bucuresti.

## Construction:

- cellular concrete Ytong;
- insulation of 300 mm ISOVER mineral wool;
- REHAU GENE0 PHZ window frame (with spacer Swisspacer / REHAU AG);
- triple glazing low E, SAINT GOBAIN GLASS (Low Planilux / Planilux / Diamant,  $U_g$ -Value glazing:  $0.6 \text{ W/m}^2\text{K}$ );
- Entrance door: PH Haustur REHAU Brilliant Design,  $U_d$ -Value  $0.77 \text{ W/m}^2\text{K}$ .

## Fact sheet

## Single-family detached house

Treated Floor Area 140 m<sup>2</sup>/apart

Number of apartments 2

Completion date: Under construction 2011

**Energy standard [PHPP]**Heat requirement / year 11 kWh/m<sup>2</sup>aHeat load 13 W/m<sup>2</sup>Primary energy requ. 112 kWh/m<sup>2</sup>aAir-tightness ( $n_{50}$ -value) 0,31 1/h

## Building type

**U-value**Exterior wall 0,122 W/m<sup>2</sup>KRoof 0,107 W/m<sup>2</sup>KBasement floor / 0.105 W/m<sup>2</sup>K

Floor slab

Windows / average 0,80 W/m<sup>2</sup>K**Specification ventilation system****Heating installation**Construction costs Euro/m<sup>2</sup>**Building owner****Architect / Planer**

Architecture / design: Universitatea de

Arhitectura si Urbanism "Ion Mincu" Bucuresti

- [www.uauim.ro](http://www.uauim.ro)

Building service planning: Universitatea

Tehnica de Constructii Bucuresti -

[www.utcb.ro](http://www.utcb.ro)

Statics planning: Institutul de Studii si

Proiectari Energetice ISPE - [www.ispe.ro](http://www.ispe.ro)**Photo credits**

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