

COMPONENT AWARD 2016

Cost efficient ventilation for residential buildings



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2016**

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Cost efficient ventilation for residential buildings

Reason: Ventilation with heat recovery is still expensive, especially for residential buildings



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Cost efficient ventilation for residential buildings

Wanted: cost efficient solutions considering the **whole ventilation system!**

- ✓ heat recovery unit
- ✓ ducting system
- ✓ Installation and additional costs (e.g. false ceiling)
- ✓ Maintenance costs



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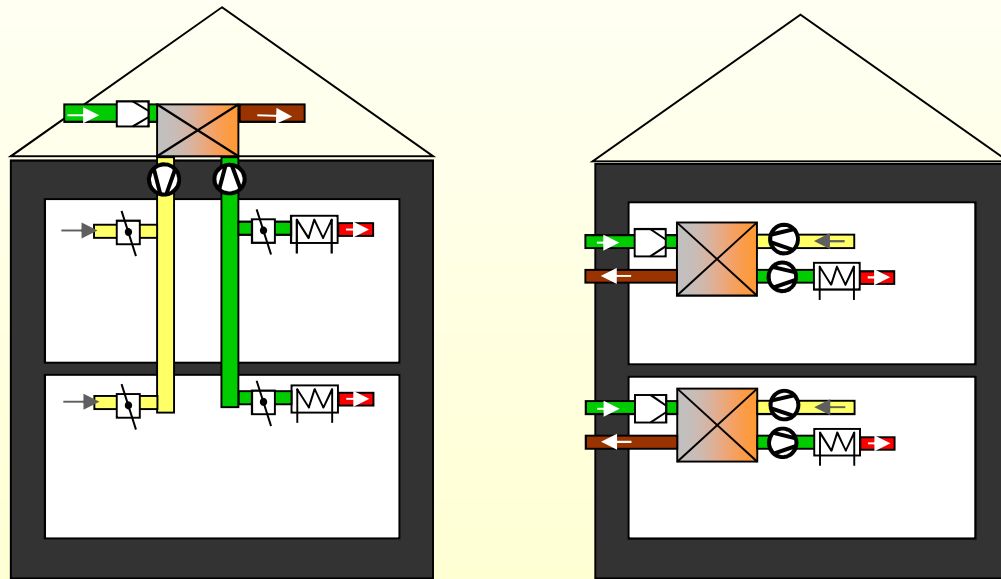
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Cost efficient ventilation for residential buildings

No preference for central or flatwise solutions!
Energy and cost efficient solutions for both types needed!



**Winner of the Award is
the best end most cost
efficient solutions!!!**

Gebäude- und Wohnungsbestand in Deutschland



Erste Ergebnisse
der Gebäude- und Wohnungszählung 2011

Example Germany:

55% of all flats located in
multi - family houses

70% of all flats located in
houses built before 1989

50% of all flats are 3 – 4 room
apartments

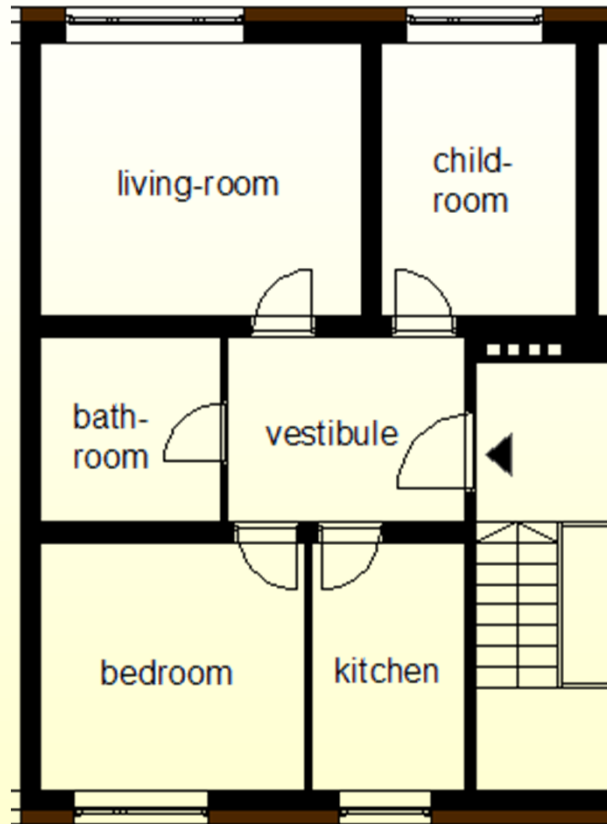


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Focus on: refurbishment of multi-family houses
3 room apartment



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FotoStudio Michels



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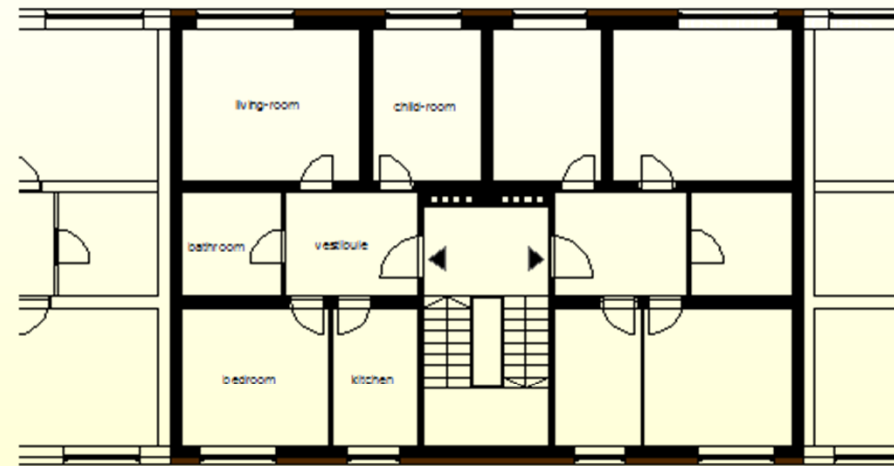
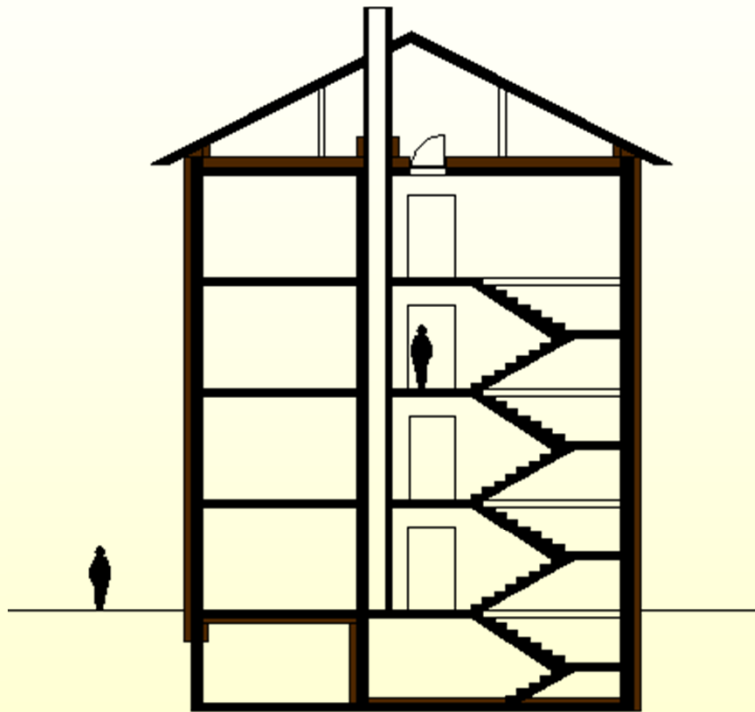
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Requirements: Certified Passive House Components

1. **Hygiene criterion**
Outside air filter at least F7, Exhaust Filter at least G4
2. **Comfort criteria**
Minimum supply air temperature: 16.5 °C @
-10°C outside air temperature
3. **Efficiency criteria**
 - a. Heat: $\eta_{HR} > 75 \%$
 - b. Electricity (1): max. 0,45 Wh/m³
 - c. Electricity (2): Standby: max 1 W
4. **Control strategy**
Min. 3 ventilation level
5. **Frost protection**

Certificate
Passive House suitable component
For cool, temperate climates, valid until 31 December 2012

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
GERMANY

Category: Heat recovery unit
Manufacturer: Paul Wärmerückgewinnung GmbH
08141 Reinsdorf, GERMANY
Product name: novus 300

Certified for air flow rates of
121 - 231 m³/h

This certificate was awarded based on the following criteria:

consumption	(94% bei 144 m ³ /h)
Airtightness	Interior and exterior air leakage rates less than 3% of nominal air flow rate
Balancing and adjustability	Air flow balancing possible: yes Automated air flow balancing: yes
Indoor air quality	Outdoor air filter F7 Extract air filter G4
Frostprotection	Frost protection for the heat exchanger with continuous fresh air supply down to

Electric power

ISO 9001

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Quality assurance

Planning reliability

User information

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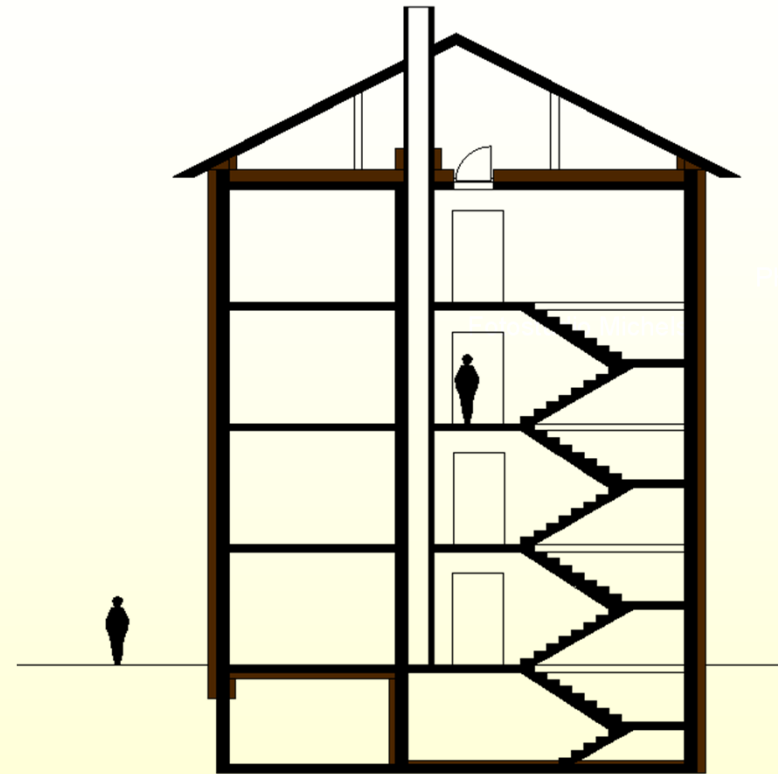
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Additional requirements:

1. **Air flow rate**
90 – 120 m³/h/ 8 dwellings
2. **Noise protection**
Max. 30 dB(A) in functional rooms and 25 dB(A) in living rooms
3. **Summer ventilation concept**



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GAG Ludwigshafen
Ihr Immobilienunternehmen

BASF Wohnen + Bauen



beside economical aspects, also practical aspects will be taken into account, which will be task of an independent Jury



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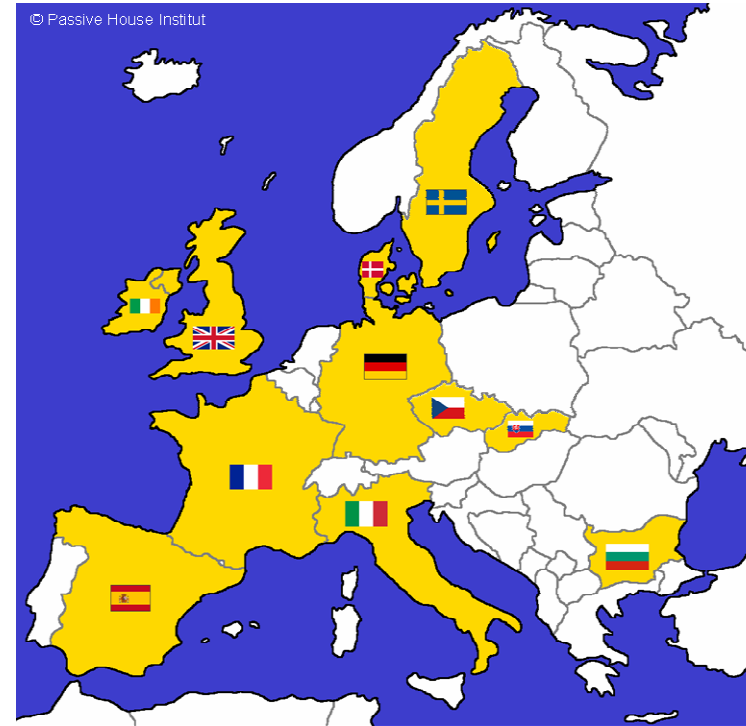
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**Thank you
for your attention**

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