

EuroPHit

**Outlines for training modules
for
tradespeople**

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The EuroPHit Project

EuroPHit

EnerPHit standard as the goal,
Passive House principles as the basis!

The EuroPHit project applies knowledge on deep energy retrofits to the oft-overlooked yet critical area of step by step refurbishments



Gymnasium Baesweiler, Germany; Photograph © Rongen Architekten



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Step by step towards the goal... Training modules for designers

How to set correctly up an overall refurbishment plan?

Building stock

• How and when to include implement RES?

step

• How to avoid humidity problems?

by

• How to design connection details of different retrofit stages?

step

• Concepts for step-by-step refurbishment approaches

retrofit

• High efficiency retrofit principles

**EnerPHit
+ RES**





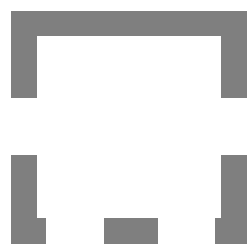
- 1. General principles**
- 2. Window to wall connection**
- 3. Wall to roof connection**
- 4. Interior insulation**
- 5. Heating and DHW systems**
- 6. Ventilation**

New material for tradespeople will be translated into the languages of the pilot site teams.



General principles

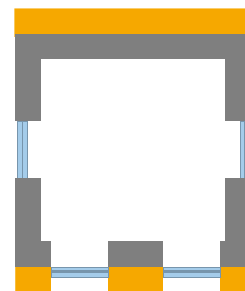
Example: **Component by component** approach



Original state



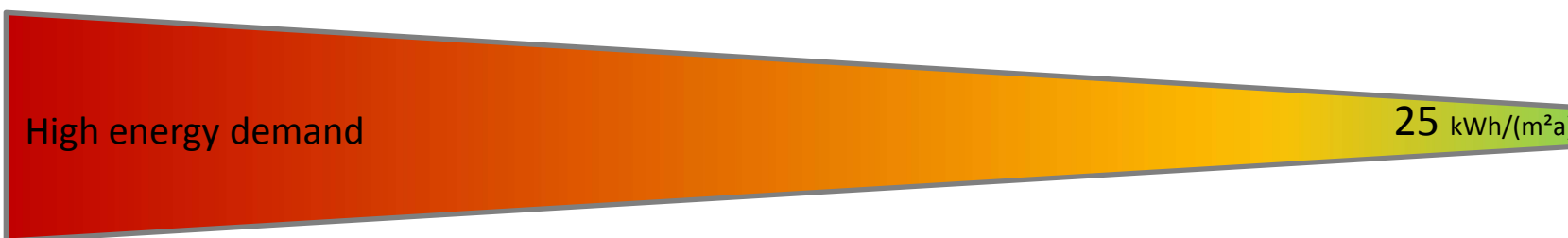
North facade



South facade
Windows
Ventilation
Airtightness



East and West facade
Heating system
RES



Window to wall connection

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Install

- ✓ A mounting frame for the later window fixing
- ✓ A temporary frame

Fill the shutter box with mineral wool

Cover the reveal with cement



Photograph © Architekturbüro Haase



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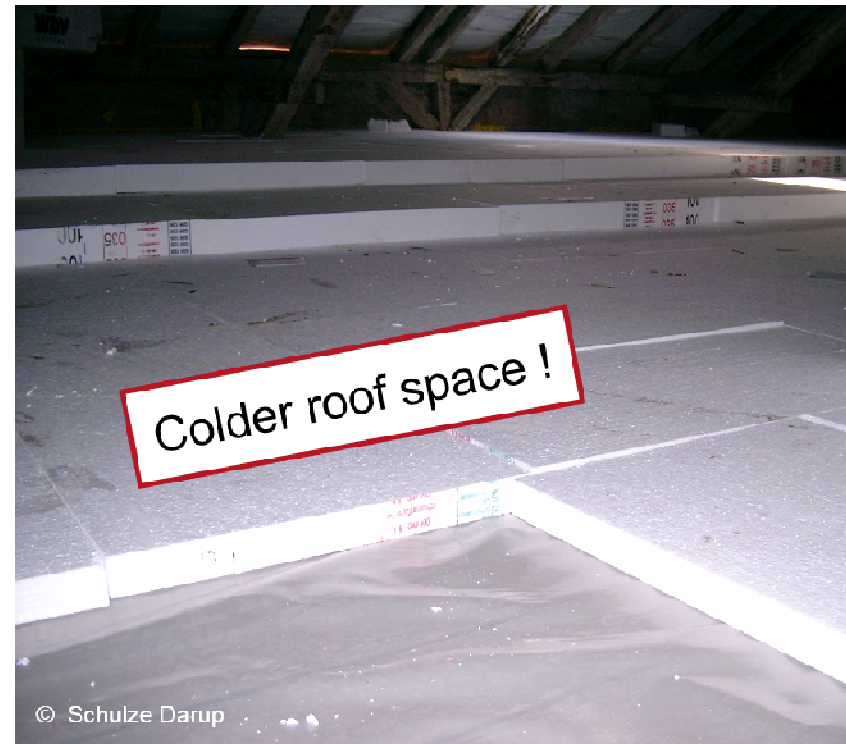
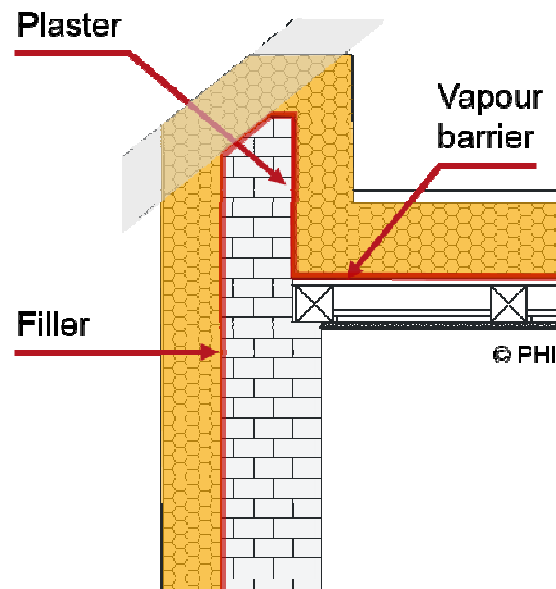


Wall to roof connection

Easy and affordable solution

- First install a vapour barrier
- Lay insulation pannels
- OSB or floor screed with

$$S_{d \text{ floor}} < S_{d \text{ vapour barrier}}$$



- Ventilate (ventilation tiles)
- Limit thermal bridges



Interior insulation – case study

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- ✓ Cut off **the rotten abutments**
- ✓ Mount a **steel strut** in the middle of each beam
- ✓ Wrap the new abutments in **insulation** before putting the beams back into place

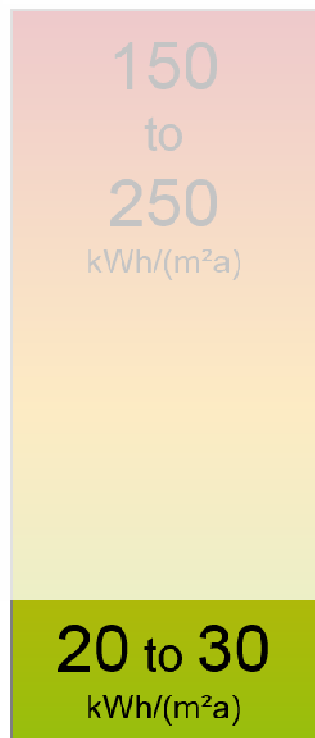


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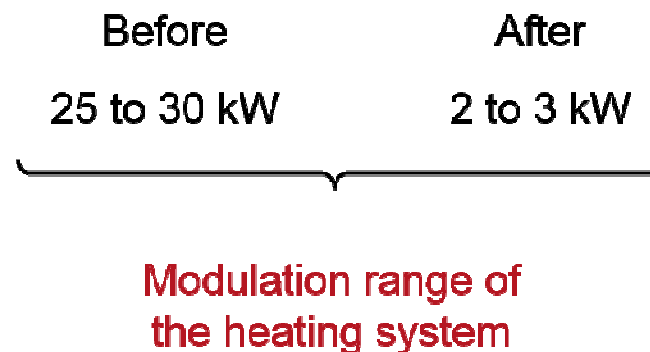
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Heating demand



Heating load

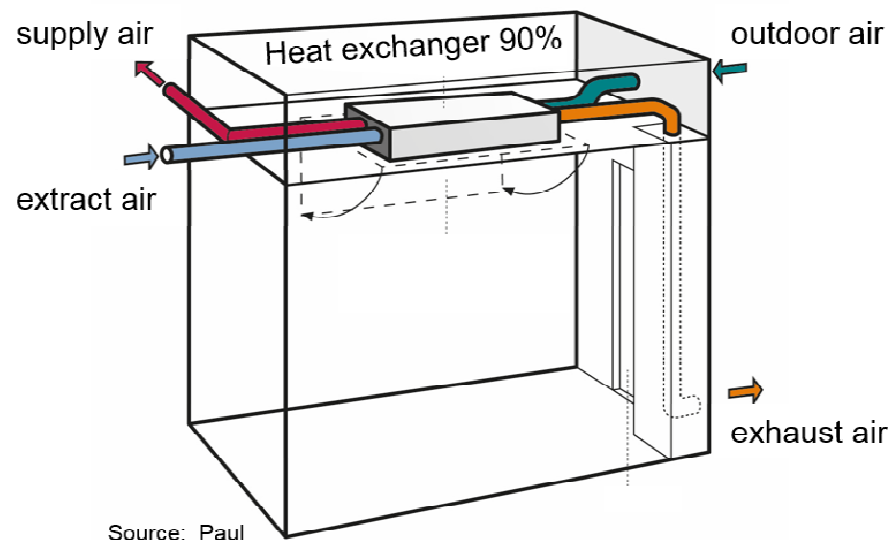


Ventilation

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- Opening for filter replacement underneath the suspended ceiling
- Installation height \approx 20-25 cm
- Narrow-edged duct connectors



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Workshop modules

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Specialisation Building Envelope		Specialisation Building Services	
Day 1	1.1 Passive House Basics	Day 1	
	1.2 Economic efficiency of the Passive House		
	1.3 Airtightness		
	1.4 Construction process / Quality assurance		
Day 2	Specialisation Building Envelope 2.1.1 Thermal insulation 2.1.2 Thermal bridges 2.1.3 Windows	Day 2	Specialisation Building Services 2.2.1 Ventilation 2.2.2 Ventilation - Special features of existing buildings
	2.1.4 <i>Special aspects of step-by-step retrofit</i>		2.1.3 <i>Special aspects of step-by-step retrofit</i>
Day 3	Specialisation Building Envelope 3.1.1 Existing buildings 3.1.2 Basic principles: Ventilation 3.1.3 Basic principles: Heat supply	Day 3	Specialisation Building Services 3.2.1 Heat Supply 3.2.2 Basic principles: Thermal insulation 3.2.3 Basic principles: Thermal bridges 3.2.4 Basic principles: Windows
	3.3 Excursion / Practical Experience		

Final Examination Building Envelope

Final Examination Building Services

Certified Passive House Tradesperson

(All Certified Passive House Tradespeople are listed on www.passivehouse-trades.org)



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Certified Passive House Tradesperson

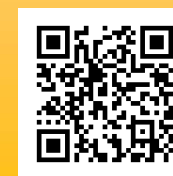


**High quality is key in
energy-efficient construction**

programme tailored to

- builders
- tradespeople
- construction workers

www.passivehouse-trades.org



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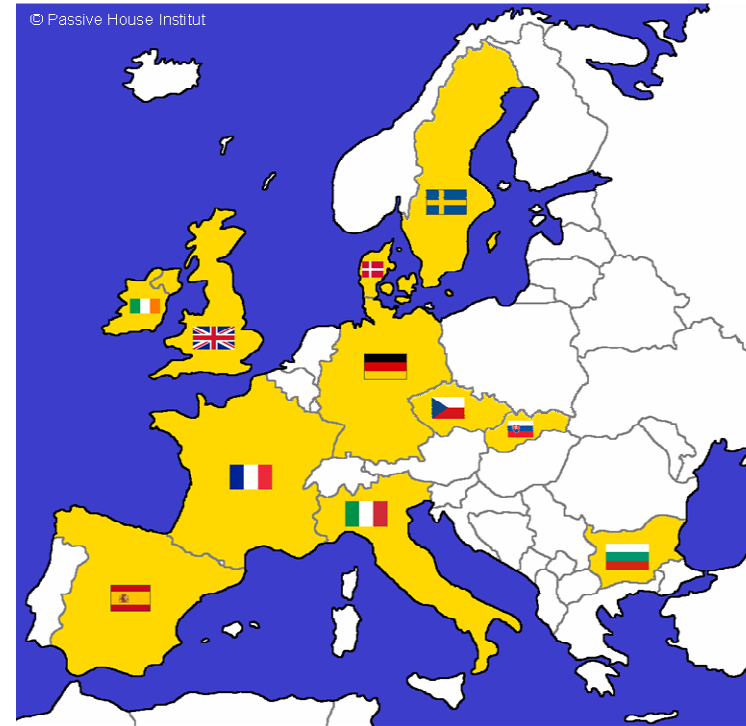
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