

---

**EuroPHit**

---

## **EuroPHit**

*Retrofitting for the energy revolution,  
one step at a time*

Tallinn, 22.09.2014

Passive House Institute, Germany  
Oliver Ottinger, Berthold Kaufmann



Co-funded by the Intelligent Energy Europe  
Programme of the European Union

[www.europhit.eu](http://www.europhit.eu)



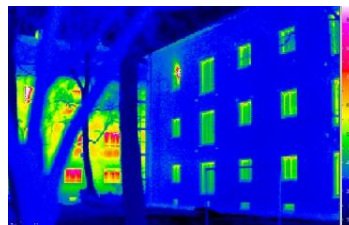
---

## **Agenda**

---

**EuroPHit**

1. EuroPHit project background
2. Energy retrofits
3. Case studies and Observers
4. Financing



Co-funded by the Intelligent Energy Europe  
Programme of the European Union

[www.europhit.eu](http://www.europhit.eu)



## 1. EuroPHit project background



Co-funded by the Intelligent Energy Europe Programme of the European Union

[www.euophit.eu](http://www.euophit.eu)



**Reduce consumption!**

**EuroPHit**

*how do we get there?*

**High efficiency**

**EU 2020 objective:**

All new/refurbished buildings as NZEBs (Nearly Zero Energy Buildings)

**Low efficiency**



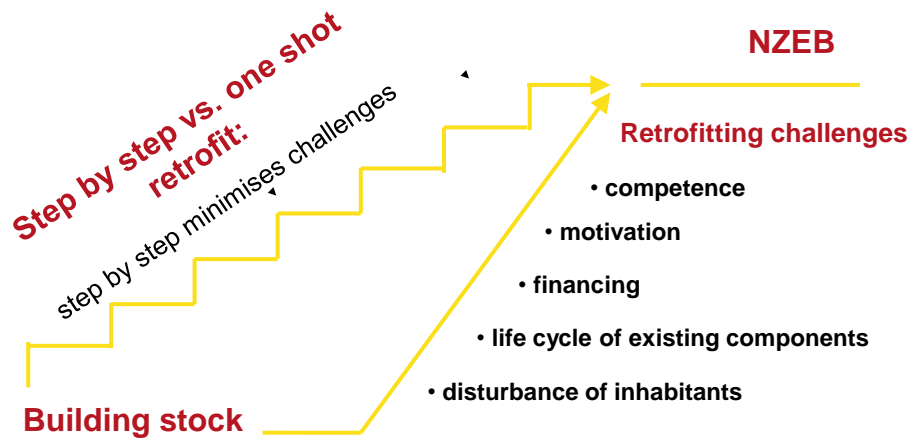
Co-funded by the Intelligent Energy Europe Programme of the European Union

[www.euophit.eu](http://www.euophit.eu)



Reducing barriers

EuroPHit



Co-funded by the Intelligent Energy Europe  
Programme of the European Union

[www.europhit.eu](http://www.europhit.eu)



EuroPHit

## 2. Energy retrofits



Co-funded by the Intelligent Energy Europe  
Programme of the European Union

[www.europhit.eu](http://www.europhit.eu)



## IF you do it, do it right!!

**EuroPHit**

Quality renovation...achieved with the Passive House principles



Listed office building, Germany; Photos © Architect Planungsbüro Gruppe 7 GmbH & Co. KG



Elementary school, Czech Republic; Photos © Atrea s.r.o.

Goal:  
< 25 kWh/m<sup>2</sup>



Co-funded by the Intelligent Energy Europe Programme of the European Union

[www.europhit.eu](http://www.europhit.eu)

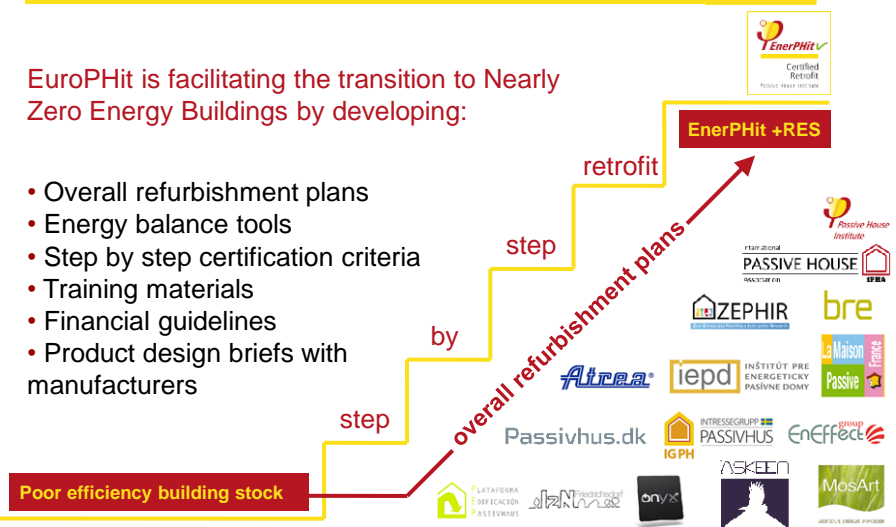


## Improving the performance of step by step retrofits

**EuroPHit**

EuroPHit is facilitating the transition to Nearly Zero Energy Buildings by developing:

- Overall refurbishment plans
- Energy balance tools
- Step by step certification criteria
- Training materials
- Financial guidelines
- Product design briefs with manufacturers



Co-funded by the Intelligent Energy Europe Programme of the European Union

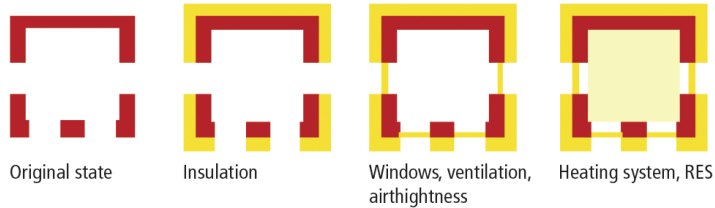
[www.europhit.eu](http://www.europhit.eu)



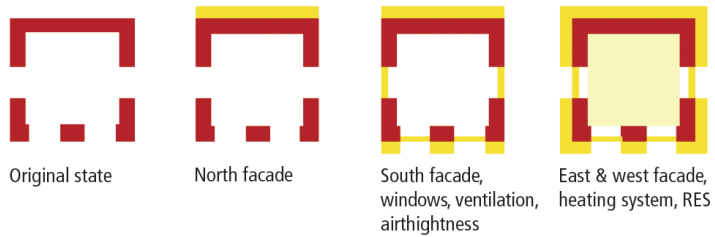
## Many ways to go step by step

**EuroPHit**

Example: component by component approach



Example: one facade at a time



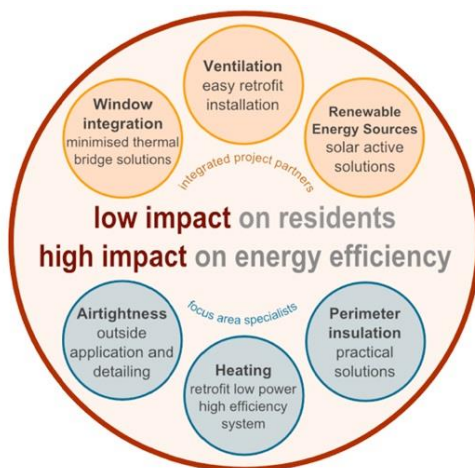
Co-funded by the Intelligent Energy Europe Programme of the European Union

[www.europhit.eu](http://www.europhit.eu)



## Products for step by step refurbishment

**EuroPHit**



### The right products

EuroPHit supports manufacturers in designing products that aid step by step renovation

### Calling for

- Ideas for product suited to step by step retrofitting
- Manufacturers interested in working with EuroPHit on products

**We want to hear from you!**



Co-funded by the Intelligent Energy Europe Programme of the European Union

[www.europhit.eu](http://www.europhit.eu)



### 3. Case studies and Observers Projects



Co-funded by the Intelligent Energy Europe  
Programme of the European Union

[www.europhit.eu](http://www.europhit.eu)



### Concrete examples: Case studies and Observers



- CS01 ● Home for the Elderly, County Dublin
- CS02 ● Secondary School, Galway
- CS03 ● Hotel, Valcanover
- CS05 ● Social Housing, Courcelles
- CS06 ● Social Housing, Liévin
- CS15 ● Family Home, Tournon-sur-Rhone
- CS08 ● Therapy Centre, Asturias
- CS16 ● Single Family Home, Santander
- CS10, CS11 ● Two Schools, Gabrovo
- CS12 ● Family Home, Svartbäcksvägen
- CS13 ● Rehab Workshop, Naestved
- CS14 ● Council Apart. Block, Portsmouth



Co-funded by the Intelligent Energy Europe  
Programme of the European Union

[www.europhit.eu](http://www.europhit.eu)



## Observers projects

**EuroPHit**

### Call for observers projects

- Do you have an old building in need of retrofitting?
- Do you want to retrofit with a view to energy efficiency?
- Want to get involved in EuroPHit?



Even if you are only planning to make a single upgrade on the way to a step by step renovation, EuroPHit could help you.

**We are interested in your experiences!  
Contact us to get involved!**



Co-funded by the Intelligent Energy Europe  
Programme of the European Union

[www.europhit.eu](http://www.europhit.eu)

**EuroPHit**

## 5. Financing



Co-funded by the Intelligent Energy Europe  
Programme of the European Union

[www.europhit.eu](http://www.europhit.eu)



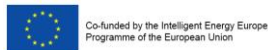
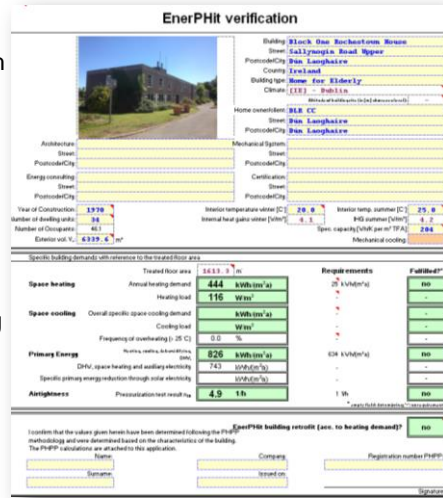
## PHPP – Planning tool for retrofits

## EuroPHit

Passive House Planning Package  
Each case study will be analysed with a new version of PHPP allowing parallel calculation of variants.



Insulation, improving airtightness, eliminating thermal bridges, replacing windows etc. will be evaluated based on resulting energy savings and profitability.



Co-funded by the Intelligent Energy Europe Programme of the European Union

[www.europhit.eu](http://www.europhit.eu)

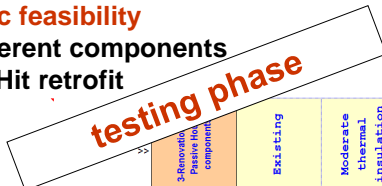


## PHPP V9 – what is to come next?

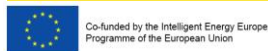
## EuroPHit

### Parametric studies & economic feasibility

- direct comparison of different components
- long term plan for EnerPHit retrofit



Results	Units	Renovation with Passive House components			
		3. Renovation Passive Hous component	Existing	Moderate thermal insulation	Renovation with Passive House components
Annual heating demand	kWh/(m²a)	13.6	137.3	25.4	13.6
Heating Load	W/m²	10.0	57.9	15.3	10.0
Overall specific space cooling demand	kWh/(m²a)				
Cooling load	W/m²				
Frequency of overheating	%	1.3	0.3	1.0	1.3
Total primary energy demand	kWh/(m²a)	60.1	205.2	73.5	60.1
Certifiable as Passive House?	yes / no	yes	no	no	yes



Co-funded by the Intelligent Energy Europe Programme of the European Union

[www.europhit.eu](http://www.europhit.eu)





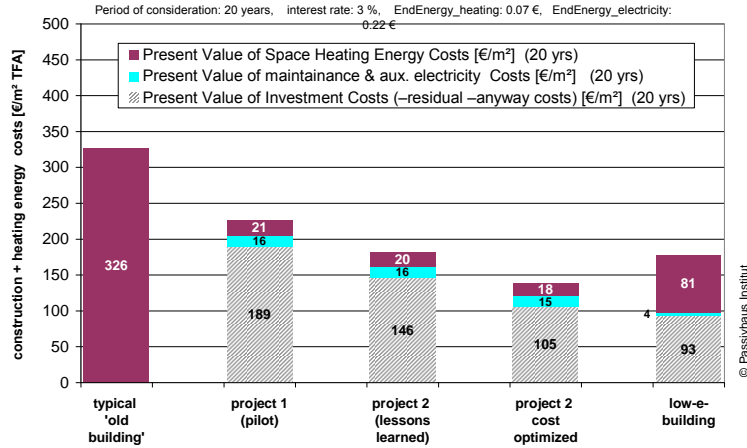
**LCA (Life cycle cost analysis):  
Comparison of renovation projects / variants**

**EuroPHit**

cash value of **energy consumption costs** (for 20 years (endenergy: 0.07 €/kWh))

cash value of **maintainance** (costs for 20 years)

cash value of **ee-investment minus 'anyway' costs minus residual value** (20 years)



Co-funded by the Intelligent Energy Europe Programme of the European Union

[www.europhit.eu](http://www.europhit.eu)



source: IEA Task 37 und AKKP 42 (Ökonomie) [www.passiv.de](http://www.passiv.de)

**Proper financing**

**EuroPHit**

**Energy retrofits pay off!!!**

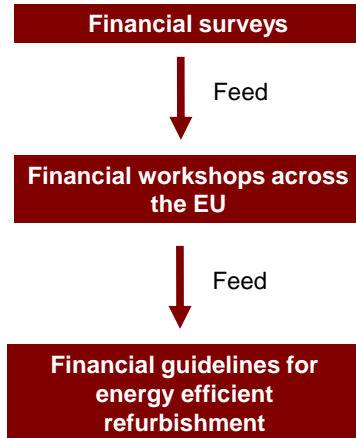
...still, finding appropriate financing for the investment needed is key.



Photo © Images Money, TaxRebate.org.uk

EuroPHit is providing financial institutes with the information they need to offer appropriate financial products for step by step retrofits

Help guide EuroPHit's work today by completing the **online financial survey** for construction project managers, surveyors, financiers, and other stakeholders



Co-funded by the Intelligent Energy Europe Programme of the European Union

[www.europhit.eu](http://www.europhit.eu)



## Getting involved

**EuroPHit**

### Join the EuroPHit network free of charge!

- become part of a pool of competence on energy retrofitting
- access to the EuroPHit Forum
- be kept up to date on project progress and key project outcomes

### Or help out by

- filling out a financial survey
- joining with an observer project
- letting us know about product ideas and manufacturer interest



Co-funded by the Intelligent Energy Europe Programme of the European Union

[www.europhit.eu](http://www.europhit.eu)



## 19<sup>TH</sup> INTERNATIONAL PASSIVE HOUSE CONFERENCE 2015

Leipzig | Germany

**17 - 18 April 2015**

with exhibition and framework programme



Single family house in Leipzig © BHB GmbH Dresden



Including special sessions on step by step retrofits, EuroPHit project results, and more!

[www.passivehouseconference.org](http://www.passivehouseconference.org)

With step by step retrofit projects, EnerPHit refurbishes and Passive House buildings taking part throughout the 11 partner countries and beyond!

[www.passivehouse-database.org](http://www.passivehouse-database.org)



**PASSIVE HOUSE RESIDENTS WORLDWIDE OPEN THEIR HOMES:**

**International Passive House Days** 7-9 November 2014

*Visit Passive House buildings or showcase your own project!*

**Doing more with less:**

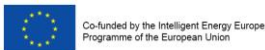
- » Superior comfort
- » Minimal heating and cooling costs
- » For new builds and retrofits alike

**Experience Passive House buildings first hand!**

- Visits and guided tours offered across the globe
- Architects show how it's done
- Residents share their experiences

Please see [www.passivehouse-international.org](http://www.passivehouse-international.org) for further information. Participating buildings will be listed as of September 2014 on [www.passivehouse-database.org](http://www.passivehouse-database.org)

International PASSIVE HOUSE Association IPHA



[www.europhit.eu](http://www.europhit.eu)



**EuroPHit**

**Thank you  
for your attention**

[www.europhit.eu](http://www.europhit.eu)



contact: [Oliver.Ottinger@passiv.de](mailto:Oliver.Ottinger@passiv.de)

