

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°754045

## **iBRoad project update**

February 2020

**Alexander Deliyannis**  
**Sympraxis Team**

**iBRoad webinar**  
**2020/02/27**

# The iBRoad “pitch”

## A concept for the Building Renovation Passport

Renovating a building can be complex, especially if done in several steps, as most house renovations in Europe. To help home owners, iBRoad has worked on the Building Renovation Passport concept, specifically developing and testing an Individual Building Renovation Roadmap, which provides a customised long-term (5-20 years) renovation plan. This is further supported by a Logbook –a repository of building information such as blueprints, works implemented, energy consumption and production, etc.



# The iBRoad “pitch”

## A concept for the Building Renovation Passport

Renovating a building can be complex, especially if done in several steps, as most house renovations in Europe. To help home owners, iBRoad has worked on the Building Renovation Passport concept, specifically developing and testing an Individual Building Renovation Roadmap, which provides a customised long-term (5-20 years) renovation plan. This is further supported by a Logbook –a repository of building information such as blueprints, works implemented, energy consumption and production, etc.

## ... and more

In order for the Building Renovation Passport to achieve its full potential impact in practice, surrounding policy instruments are essential. These include economic, regulatory and information instruments supporting a synergistic approach.

# Building renovation can be a challenge



# A plan can help

## DEEP AND QUALITATIVE RENOVATION

### HOLISTIC RENOVATION PROCESS

### BUILDING RENOVATION ROADMAP



Source: Energiesprong

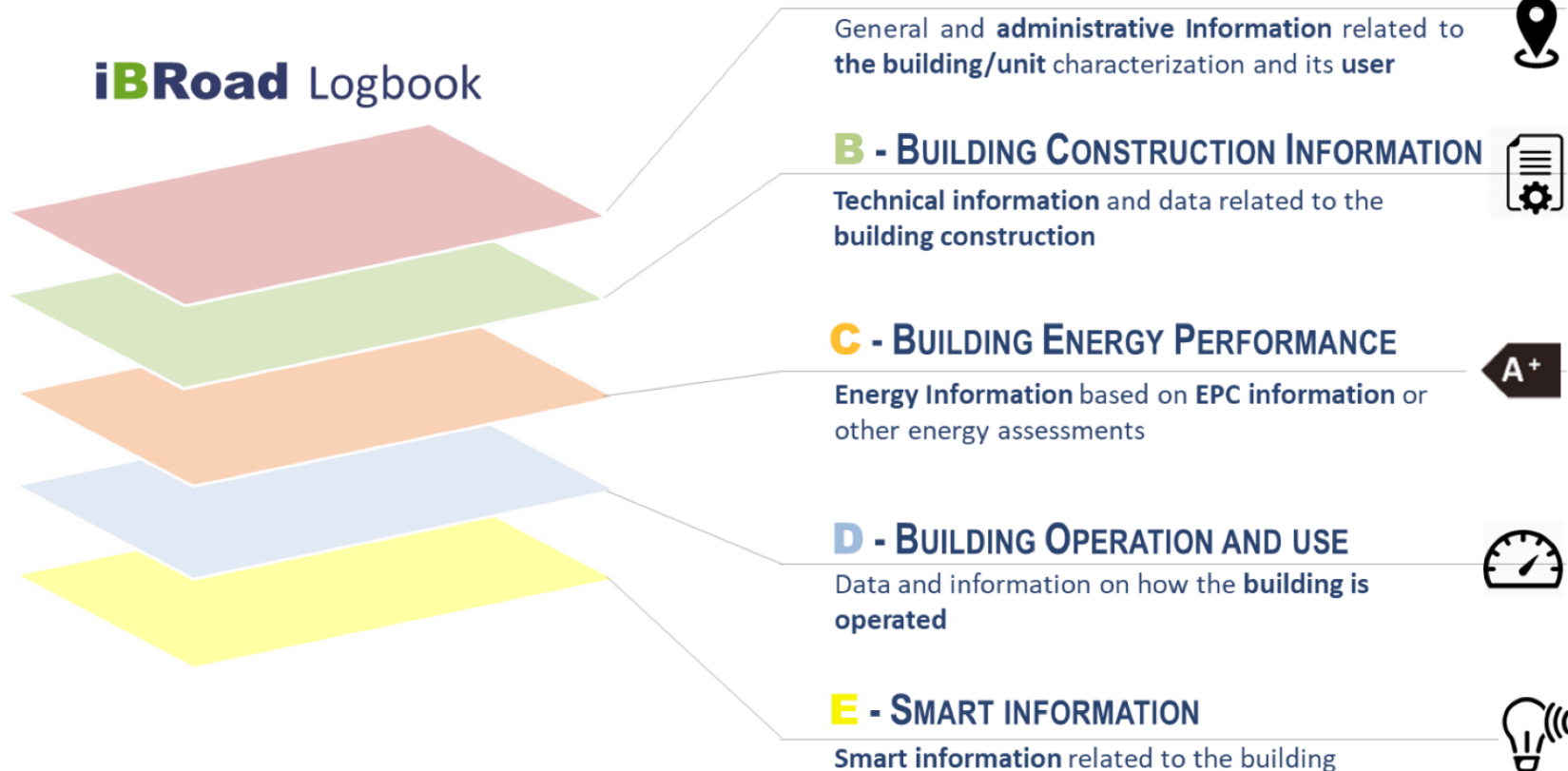
Detailed Renovation Roadmap

Step by Step Plan

	ENERGY CLASS <b>G</b>	ENERGY CLASS <b>E</b>	ENERGY CLASS <b>D</b>	ENERGY CLASS <b>B</b>	ENERGY CLASS <b>A</b>
	Year building Moment of delivery	Renovation Step 1 When boiler needs to be replaced	Renovation Step 2 2020 - 2020	Renovation Step 3 2020 - 2025	Renovation Step 4 2025 - 2040
Measures		Measures • Add a thermal solar system	Measures • External Wall insulation	Measures • Substitution of the old windows • Heat insulation	Measures • Installation of a heat recovery unit • Substitution of the heating system by a heat pump
Energy	<b>Primary Energy Demand</b> 250 kWh/m <sup>2</sup> a <b>Main Energy Source</b> Natural Gas <b>Final Energy Demand</b> Main Source 200 kWh/m <sup>2</sup> a	<b>Primary Energy Demand</b> 210 kWh/m <sup>2</sup> a <b>Main Energy Source</b> Natural Gas <b>Final Energy Demand</b> Main Source 200 kWh/m <sup>2</sup> a	<b>Primary Energy Demand</b> 160 kWh/m <sup>2</sup> a <b>Main Energy Source</b> Natural Gas <b>Final Energy Demand</b> Main Source 100 kWh/m <sup>2</sup> a	<b>Primary Energy Demand</b> 100 kWh/m <sup>2</sup> a <b>Main Energy Source</b> Natural Gas <b>Final Energy Demand</b> Main Source 80 kWh/m <sup>2</sup> a	<b>Primary Energy Demand</b> 100 kWh/m <sup>2</sup> a <b>Main Energy Source</b> Electricity <b>Final Energy Demand</b> Main Source 80 kWh/m <sup>2</sup> a
CO <sub>2</sub>	<b>Final Energy Demand</b> second Source 0 kWh/m <sup>2</sup> a <b>Auxiliary Energy Source</b> Electricity <b>Final auxiliary Energy Demand</b> Energy R0 1000 kWh <b>Carbon Emissions</b> 40 kg/m <sup>2</sup> a	<b>Final Energy Demand</b> second Source 10 kWh/m <sup>2</sup> a <b>Auxiliary Energy Source</b> Electricity <b>Final auxiliary Energy Demand</b> Energy R0 1000 kWh <b>Carbon Emissions</b> 30 kg/m <sup>2</sup> a	<b>Final Energy Demand</b> second Source 10 kWh/m <sup>2</sup> a <b>Auxiliary Energy Source</b> Electricity <b>Final auxiliary Energy Demand</b> Energy R0 1000 kWh <b>Carbon Emissions</b> 20 kg/m <sup>2</sup> a	<b>Final Energy Demand</b> second Source 10 kWh/m <sup>2</sup> a <b>Auxiliary Energy Source</b> Electricity <b>Final auxiliary Energy Demand</b> Energy R0 1000 kWh <b>Carbon Emissions</b> 10 kg/m <sup>2</sup> a	<b>Final Energy Demand</b> second Source 10 kWh/m <sup>2</sup> a <b>Auxiliary Energy Source</b> Electricity <b>Final auxiliary Energy Demand</b> Energy R0 1000 kWh <b>Carbon Emissions</b> 10 kg/m <sup>2</sup> a
Costs		<b>Investment Costs for Renovation Step</b> 10000 € <b>Included Costs for Maintenance</b> 10000 €	<b>Investment Costs for Renovation Step</b> 2500 € <b>Included Costs for Maintenance</b> 20000 €	<b>Investment Costs for Renovation Step</b> 20000 € <b>Included Costs for Maintenance</b> 40000 €	<b>Investment Costs for Renovation Step</b> 20000 € <b>Included Costs for Maintenance</b> 40000 €
Subsidies		<b>Name of incentives</b> KfW <b>Incentives</b> 50000 €	<b>Name of incentives</b> KfW <b>Incentives</b> 0 €	<b>Name of incentives</b> KfW <b>Incentives</b> 10000 €	<b>Name of incentives</b> KfW <b>Incentives</b> 0 €
Energy Changes		Changed Comforts	Changed Comforts	Changed Comforts	Changed Comforts

Source: iBRoad

## So can a reference



Source: iBRoad project report "The logbook data quest" <https://ibroad-project.eu/news/the-logbook-data-quest/>



## INFORMATION AT INDIVIDUAL BUILDING LEVEL

### EXISTING ENERGY PERFORMANCE CERTIFICATE (EPC)

#### ON-SITE GATHERED INFORMATION

- Energy audit
- Building professionals, e.g. construction plan, info installations, BIM, etc.
- Building owner or tenant
- Public authorities

#### AUTOMATED DATA

- Smart meters
- Monitoring systems, e.g. RES, heating, CO<sub>2</sub> meters, etc.

## BUILDING RENOVATION PASSPORT

### RENOVATION ROADMAP

- Comprehensive audit
- Systematic renovation in a sensible order and packages
- Considers individual context
- Long-term perspective

### LOGBOOK

- Inventory of building-related information
- Functionalities for users
- Beyond energy
- Linking building owners and users to third parties

# Directive (EU) 2018/844, Article 2a

## Long-term renovation strategy

*1. Each Member State shall establish a long-term renovation strategy to support the renovation of the national stock of residential and non-residential buildings, both public and private, into a highly energy efficient and decarbonised building stock by 2050, facilitating the cost-effective transformation of existing buildings into nearly zero-energy buildings. Each long-term renovation strategy shall be submitted in accordance with the applicable planning and reporting obligations and shall encompass:*

*[...] (c) policies and actions to stimulate cost-effective deep renovation of buildings, including **staged deep renovation**, and to support targeted cost-effective measures and renovation for example by introducing an optional scheme for **building renovation passports**; [...]*



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- **83%** of respondents think they can reduce their household's energy consumption through renovation measures
- **92%** thinks that energy efficiency will be an important aspect when deciding to purchase a home
- Only **9%** would trust the Energy Performance Certificate for advice about potential renovation measures

## BULGARIA




- To finance the renovation, **84%** planned to use money that they had saved up
- **44%** of respondents in Poland are interested in a building passport or logbook for their home or the home they would buy but would not be willing to pay
- **71%** have completed a renovation in the past five years

## POLAND





Individual Building Renovation Roadmaps




### Understanding potential user needs

A survey analysis of the markets for Individual Building Renovation Roadmaps in Bulgaria, Poland and Portugal

March 2018

[www.ibroad-project.eu](http://www.ibroad-project.eu)

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- **51%** are more concerned about having a warm and comfortable home than saving energy
- **47%** would go to the Energy Performance Certificate for advice about renovation measures
- **49%** think that potential buyers should be allowed to access the logbook with all relevant information about the building

## PORTUGAL






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Individual Building Renovation Roadmaps




## The logbook data quest

Setting up indicators and other requirements for a renovation passport

ADENE – Agência para a Energia  
July 2018

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Individual Building Renovation Roadmaps




## The iBRoad Concept in practice

Report on suggested elements, content and layout of the iBRoad tools

ADENE – Agência para a Energia  
November 2018

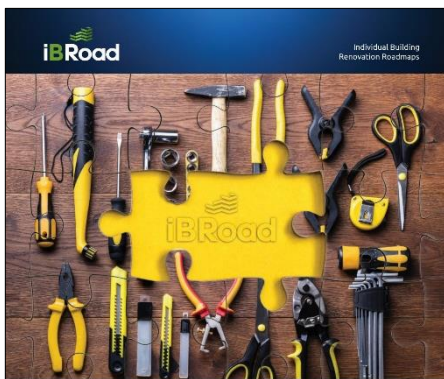
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**The iBRoad tools structure**  
How to integrate techno-economic assessment, individual building renovation roadmap and logbook components in iBRoad

TU Wien – Technische Universität Wien  
November 2018

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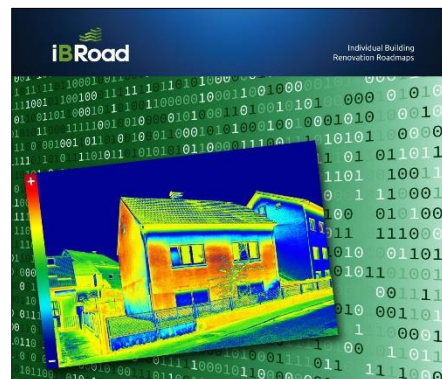



**Quantifying home renovation**  
Report and database for techno-economic default assessment of renovation measures

TU Wien – Technische Universität Wien  
November 2018

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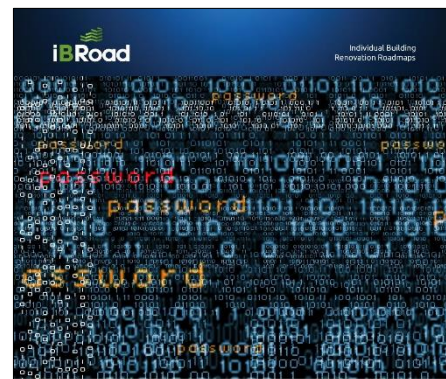



**Simple energy demand calculation tool**  
Open source programme code of techno-economic default assessment of renovation measures

TU Wien – Technische Universität Wien  
November 2018

[www.ibroad-project.eu](http://www.ibroad-project.eu)

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**Database structure and programming core of the roadmap and logbook**

Blue Planet Academy & Consulting  
November 2018

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Individual Building  
Renovation Roadmaps



## iBRoad Stakeholders Meetings

Key Notes and Findings of 1st physical events round

INZEB  
September 2018

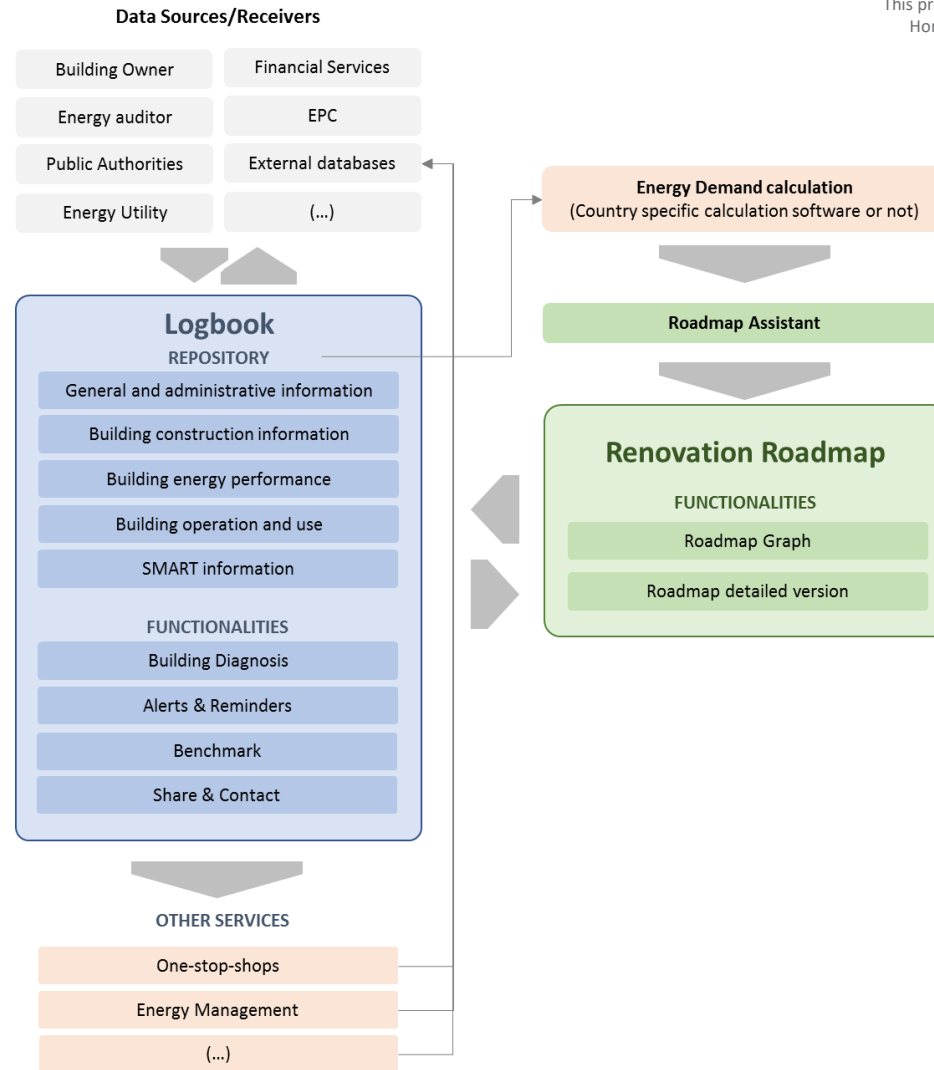
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# Main concept

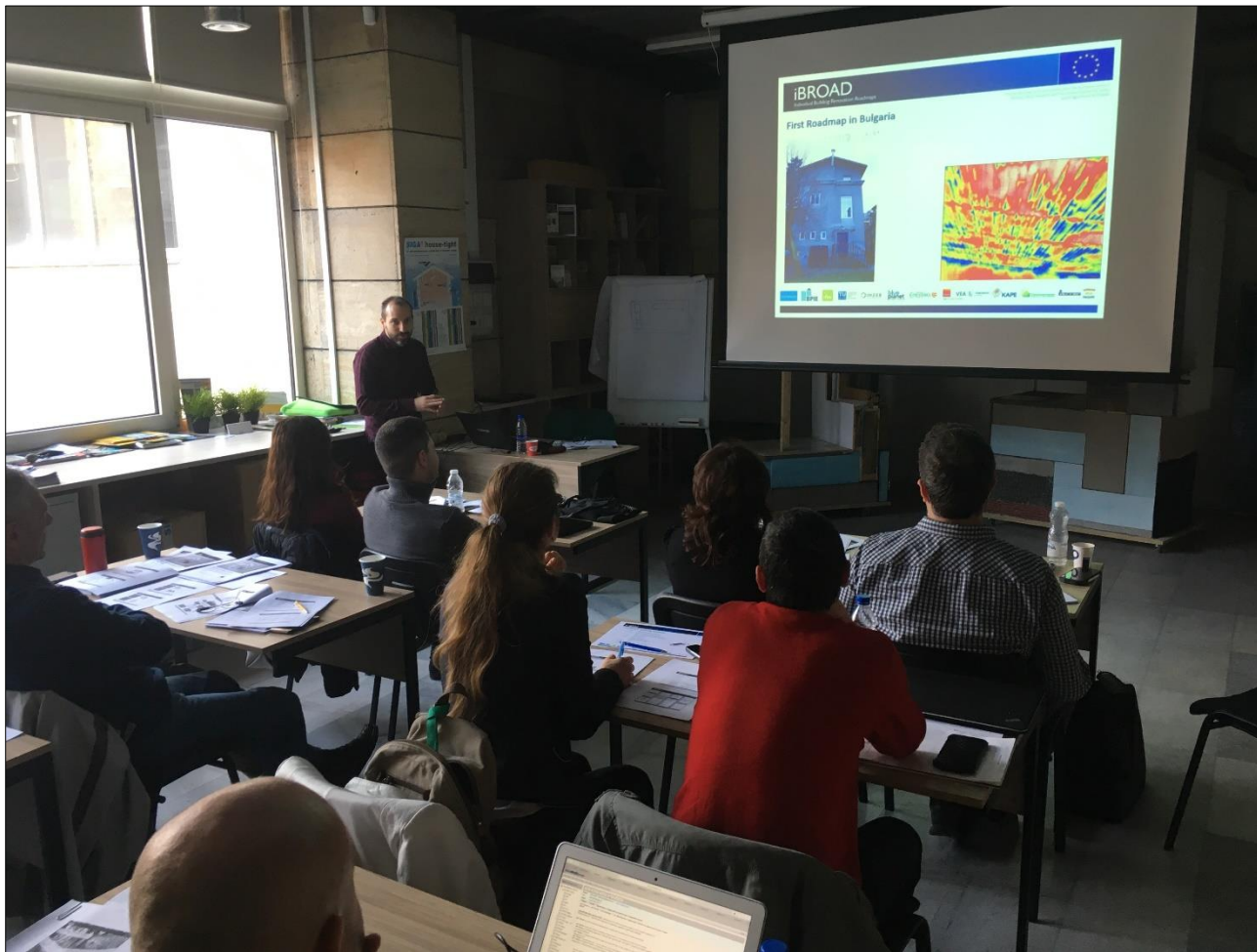




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Individual Building Renovation Roadmaps



## Handbook for Energy Auditors


Guidance and advice on how to create an iBRoad Individual Building Renovation Roadmap and how to use the iBRoad Building Logbook

ifeu – Institut für Energie- und Umweltforschung Heidelberg  
February 2019


[www.ibroad-project.eu](http://www.ibroad-project.eu)

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Individual Building Renovation Roadmaps




## iBRoad training toolkit

Guidance for auditors in the iBRoad pilot countries

ifeu – Institut für Energie- und Umweltforschung Heidelberg  
March 2019

[www.ibroad-project.eu](http://www.ibroad-project.eu)

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Individual Building Renovation Roadmaps



## The iBRoad field test experience


Bulgaria, Poland, Portugal, Germany

ifeu – Institute for Energy and Environmental Research  
August 2019


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Individual Building Renovation Roadmaps




## Test-driving the Individual Building Renovation Roadmap and Logbook

Evaluation of the pilot implementation of iBRoad

ifeu – Institute for Energy and Environmental Research  
August 2019

[www.ibroad-project.eu](http://www.ibroad-project.eu)

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Individual Building Renovation Roadmaps



## How can Member States implement iBRoad?


Barriers and drivers for countries willing to explore the feasibility and replicability of iBRoad

BPiE – Buildings Performance Institute Europe  
June 2019


[www.ibroad-project.eu](http://www.ibroad-project.eu)

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Individual Building Renovation Roadmaps




## Stepwise and structured

Surrounding policy instruments to support the iBRoad approach for building renovation take-off

ifeu – Institute for Energy and Environmental Research  
September 2019

[www.ibroad-project.eu](http://www.ibroad-project.eu)

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Home » Results » Reports

## Reports



2019-10-30

### Quantifying home renovation

This iBRoad output provides a default database supporting a generic techno-economic assessment of renovation measures. The default database consists of a...

[Read More](#)



2019-10-29

### iBRoad develops code on energy demand calculation

The iBRoad project has made available an open-source programme for the techno-economic assessment of renovation measures and alternative renovation pathways of a building...

[Read More](#)



2019-04-15

### The iBRoad training toolkit

The iBRoad Renovation Roadmap and Logbook are subjected to field testing in the pilot countries, Bulgaria, Poland and Portugal. By...

[Read More](#)

SEARCH

#### QUICK ACCESS

[At a glance](#)

[Info material](#)

[Expected Results](#)

#### IBROAD ON TWITTER

New renovation rules will require existing homes to be twice as energy efficient as current standards in Ireland  
[energyindemand.com/2019/10/04...](https://energyindemand.com/2019/10/04...) via [@wordpressdotcom](#)

About a month ago from iBRoad  
RenovPassport's Twitter via Twitter Web Client

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## After this webinar

- ✓ Please visit [www.ibroad-project.eu](http://www.ibroad-project.eu)
- ✓ To be informed about iBRoad developments, subscribe to our **News Alerts**.
- ✓ To learn more on the topics that interest you, download our **reports**.
- ✓ The iBRoad **final conference** will take place in 6 May in Brussels. Further information will follow via our website and News Alerts.
- ✓ If you have proposals for iBRoad to be presented further, or are considering the potential implementation of building renovation passports (roadmaps and/or logbooks) in your country or area, **get in touch** with us via [contact@ibroad-project.eu](mailto:contact@ibroad-project.eu) or the contact form on the website.



# iBRoad

Individual Building Renovation Roadmaps

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## Thank you



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