

BUILD UP Webinar 2019.03.05

iBRoad – My path towards an energy efficient home



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Today's BUILD UP webinar agenda

- **Introduction** – Alexander Deliyannis, Sympraxis Team, iBRoad project coordinator
- **The context of the Building Renovation Passport; first steps towards a breakthrough?** – Maarten De Groote, Buildings Performance Institute Europe (BPIE)
- **Reflections from the market across Europe** – Alice Corovessi, Institute of Zero Energy Buildings (INZEB)
- **iBRoad's vision for the Building Renovation Passport** – Lukas Kranzl, Technical University of Vienna (TU Wien)
- **iBRoad in the field: testing the Roadmap and Logbook in European countries** – Martin Pehnt, Institute for Energy and Environmental Research Heidelberg (ifeu)
- **The relevance of iBRoad; brief testimony from Romania** – Horia Petran, INCD URBAN-INCERC
- **Questions and Answers**

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

iBRoad **My path towards an energy efficient home**

Alexander Deliyannis
Sympraxis Team

BUILD UP webinar

2019.03.05

Assume that you are a building owner...

- Are you considering renovating your building?
- Do you know where to start from?
- You wouldn't build a house without a plan; would you renovate it without one?
- Whom would you ask to prepare that plan for you?
- What kind of building information would that expert need? Do you have it readily available?
- Would you expect the expert to discuss your needs, preferences and financial ability when preparing the plan?
- Would financing the renovation be easier with such a plan?
- Who could help you implement the plan?

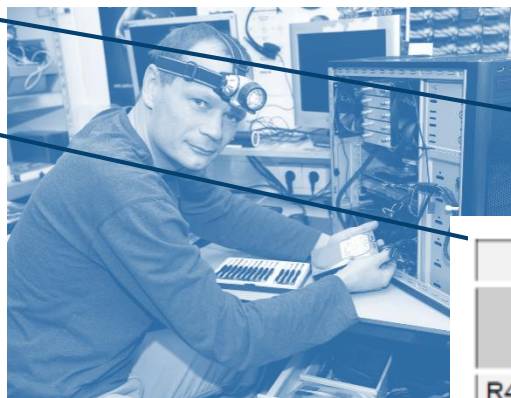
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A quick comparison of markets



- Price
- Lifespan
- Modularity
- Services
- Commodification
- Regulatory context
- Ownership

A quick comparison of markets



Legal requirements and limit values					
	Law from	NOx g/kWh	PM g/kWh	HC g/kWh	CO g/kWh
R49.00	1982	18	-	3.50	14
Euro 0	1990	14.4	-	2.40	11.2
Euro 1	1993	8.0	0.36	1.10	4.5
Euro 2	1996	7.0	0.15	1.10	4.0
Euro 3	2001	5.0	0.10	0.66	2.1
Euro 4	2006	3,5	0,02	0,46	1,5
Euro 5	2009	2,0	0,02	0,46	1,5
Euro 6	2013	0,4	0,01	0,13	1,5

Challenges

- Long lifespan, non-modularity
- Non access to finance
- Non access to finance
- Non access to finance
- Non access to finance
- Market fragmentation
- Need for education and training
- Various
- Various
- Various

Potential solutions

- Modular, upgradeable construction
- Step-by-step renovation
- 3rd party financing / ESCOs
- Energy efficient mortgage – EeMAP
- Bundling of investments
- One-Stop Shops – BetterHome DK
- BUILD UP Skills / Construction Skills
- Mass customisation – Energiesprong
- Building Renovation Passports
- Building Information Modelling (BIM)



Thank you



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The context of the Building Renovation Passport

First steps towards a breakthrough?

Maarten De Groote

Head of Research, Buildings Performance Institute Europe

My path towards an energy efficient home

Build Up webinar, 5 March 2019

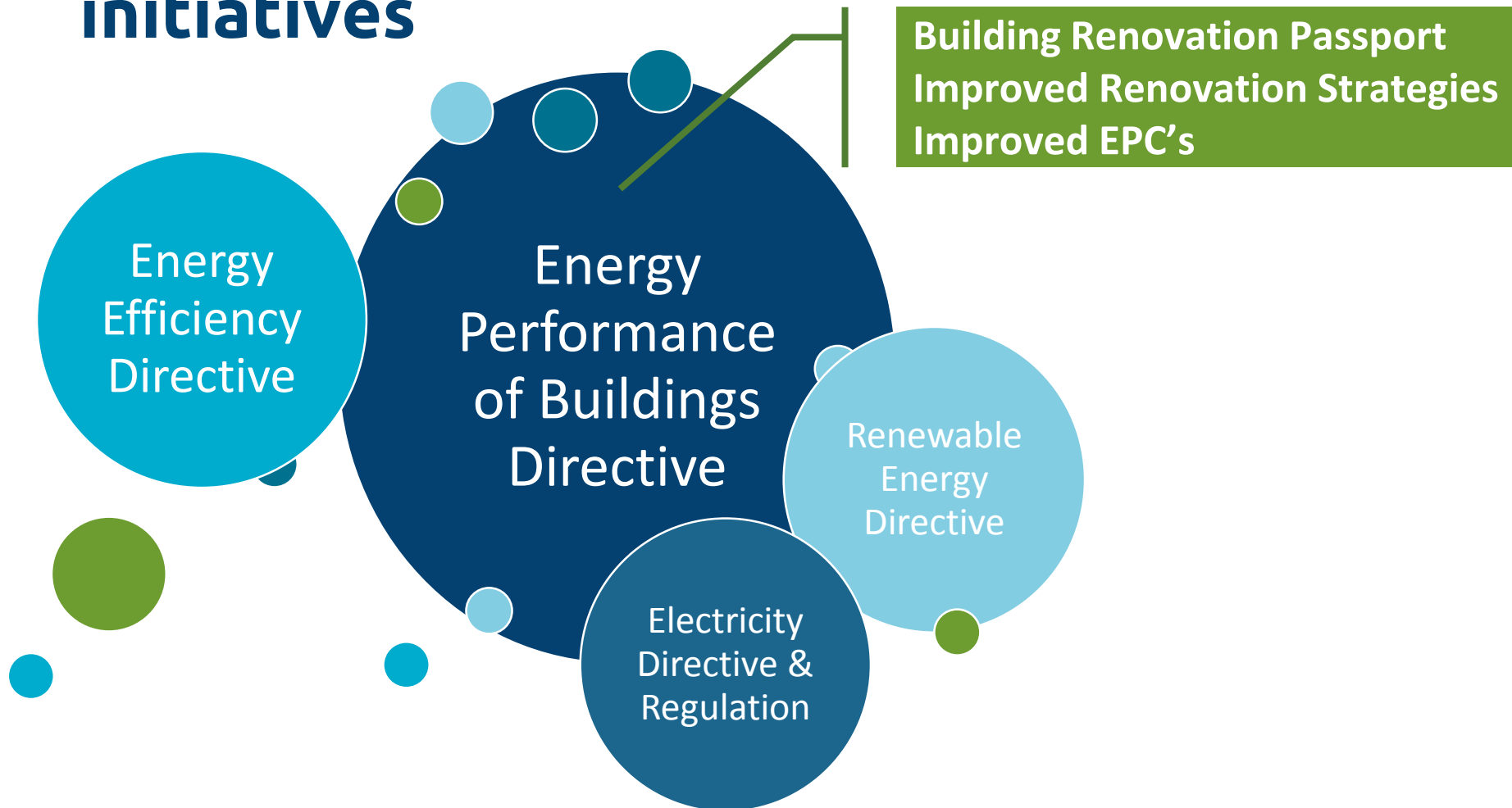
90% of our time is spent indoors

97% of EU buildings is not future proof



A high-angle, wide shot of a massive crowd of people filling a city street for a climate protest. The crowd, composed of individuals of various ages and backgrounds, stretches far into the distance. Many participants are holding handmade signs and banners. Visible messages include "FUCK THE CLIMATE", "JOIN THE GREENS", "WAKE UP TO THE FACTS YOU'RE ENDANGERED", "ENVIRONMENT OVER CONVENIENCE", "LOVE YOUR LIFE", "SAVE OUR PLANET", "GREEN SIDE", "WILL D", and "A LADY OF LITEN". Some signs also feature symbols like a recycling logo and a green leaf. The street is flanked by multi-story urban buildings with many windows. Several cars are parked or stopped along the sides of the road, partially obscured by the dense crowd. The overall atmosphere is one of a large-scale, organized public demonstration.

EU legislation, a complex interaction of initiatives



National Renovations Strategies

The essential tool for Member States to achieve impact

Milestones for 2030, 2040, 2050

Contribution to the EU energy efficiency target for 2030

Overview of the national building stock

Expected share of renovated buildings in 2020

Policies and actions to target worst performing segments of building stock

Policies and actions to stimulate cost-effective deep renovation of buildings

Including staged deep renovation, e.g. by introducing an optional scheme for building renovation passports

Actions that contribute to the alleviation of energy poverty

Policies and actions to target all public buildings

Promote smart technologies and well-connected buildings and communities

Promote skills and education in the construction and energy efficiency sectors

Estimate of expected energy savings and wider benefits, such as those related to health, safety and air quality

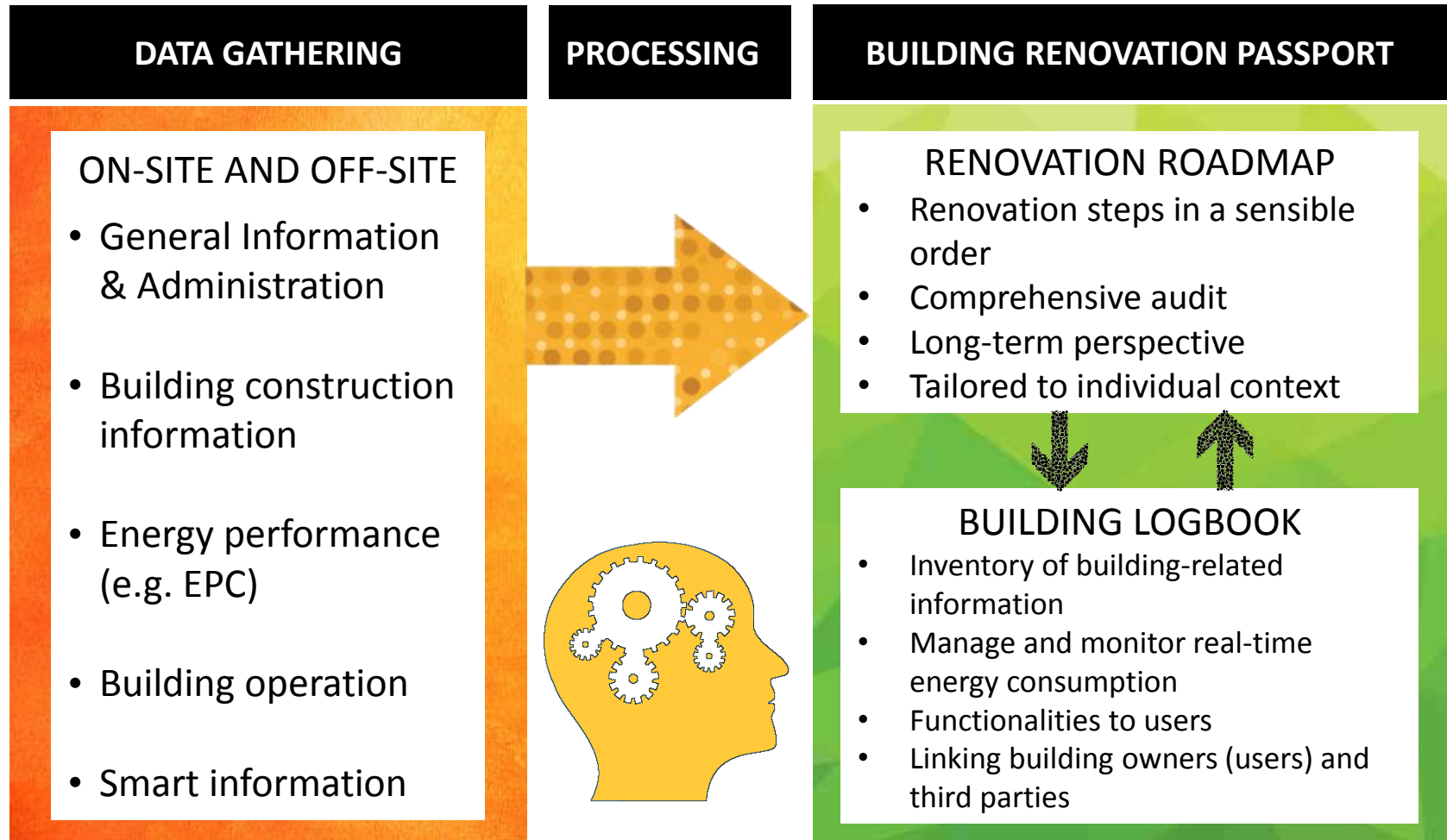
EPBD 2018 as main driver for BRP








Article 19a of the EPBD

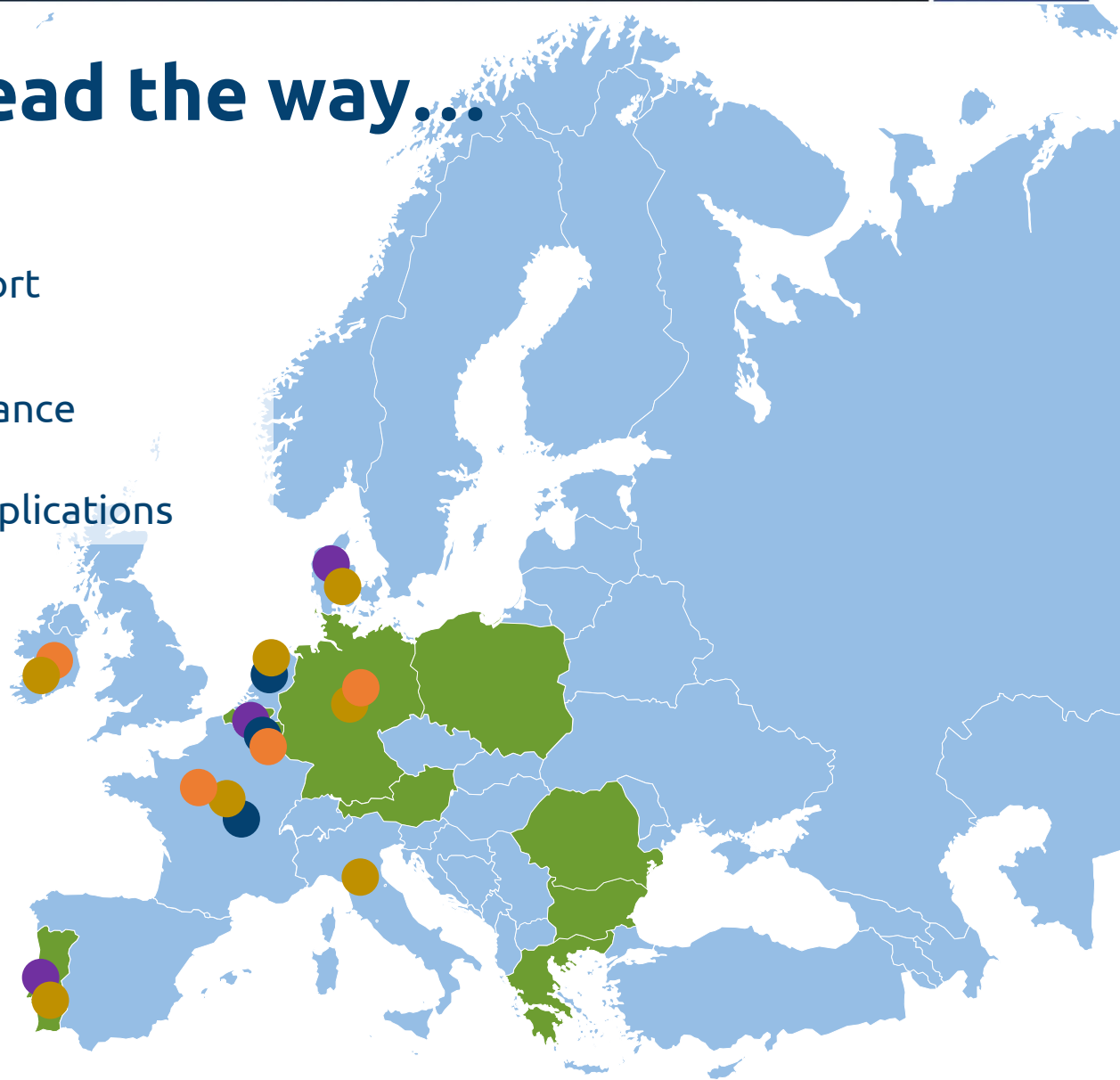
- *The Commission shall, before 2020, conclude a feasibility study, clarifying the possibilities and timeline to introduce an **optional building renovation passport***
- *Complementary to the energy performance certificates*
- *To provide a long-term, step-by-step renovation roadmap for a specific building based on quality criteria, following an energy audit, and outlining relevant measures and renovations that could improve the energy performance.*

Interest to be involved? www.epbd19a.eu

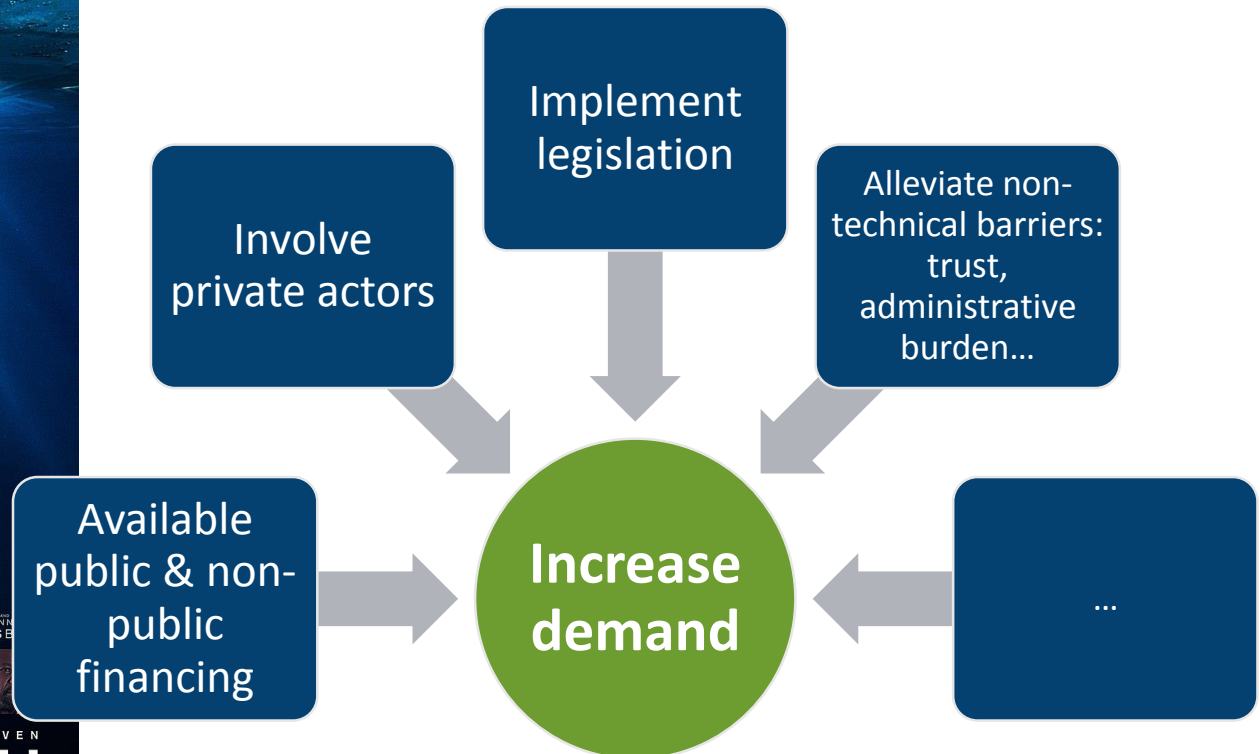
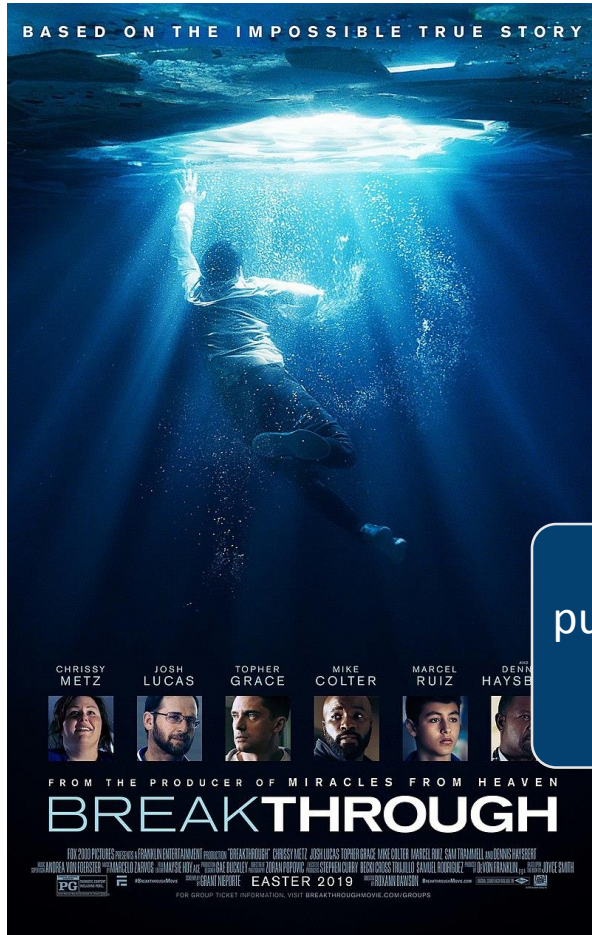


Pilot cases lead the way...

-  iBRoad country
-  Building renovation passport
-  Logbook
-  Advanced Energy Performance Certification
-  One Stop Shop & online applications



Are we on a breakthrough?



It's all about the users



- Majority of households in BG, PT and PL (>75%) finds it essential to have a plan to renovate over time to overcome problems
- Trust in the EPC's for advice on renovation measures is very low in BG (9%), but much higher in Portugal (47%)
- In Poland most building owners plan to finance the renovation with own savings (84%)
- One on two Polish households is interested in a BRP, but not willing to pay
- One on two Portuguese households is more concerned about having a warm and comfortable home than saving energy



Thank you



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REFLECTIONS FROM THE MARKET ACROSS EUROPE

Alice Corovessi

COO/CFO - INZEB

My path towards an energy efficient home

Build Up webinar, 5 March 2019

iBRoad is a **consumer-oriented project** as it strongly supports building owners in step-by-step deep renovations, removing barriers and lock-in effects.

The **adoption** and **adaptation process** of the tools to be developed within the project period, cannot be the same for all countries since special conditions exist.

THE AIMS OF THE STAKEHOLDER MEETINGS

To introduce the iBRoad project concept and tools to be developed

To identify iBRoad's replicability potential in each country as well as the interconnection with existing national tools and strategies

To discuss the potential adaptation process, the implementation barriers as well as the ways to overcome them.



In total, **114 stakeholders**, coming from:

- Public National and Local Authorities;
- Engineering and Building Associations;
- Technical Chambers and Consumer Associations;
- Building Material Industry;
- Finance Institutions;
- Academia;
- NGOs and Think Tanks, and,
- Media,

attended the meetings, providing their insights, input, ideas on how the project could can be a benefit for the building owners and tenants.





Legislative Framework

Financial Aspects

Capacity Aspects

Values for All Involved Parties



Key Findings: Values for All Involved Parties

- ✓ There is a strong need to educate end-users, possibly via a web platform outlining benefits and financial aspects of typical retrofit solutions. This can be accomplished via the tools to be developed within the iBRoad project.
- ✓ There is a need for qualitative online building renovation tools which integrate the expertise of energy consultants into the data input process.
- ✓ The iBRoad tools could enhance the quality of construction works.
- ✓ Individual building renovation roadmaps effectively coordinate the step-wise renovation measures to avoid lock-in effects.
- ✓ Step-by-step renovation helps the owner of the building to cope with the financial burden it poses.
- ✓ The renovation plan can provide information that is identical for everyone.
- ✓ Increased indoor comfort and the quality of the living environment, followed by lower energy bill and reduced emissions of greenhouse gases.

Key Findings: Financial Aspects

- ✓ Interfaces to existing funding and grant access to third parties (e.g. craftsmen) as desired will be considered success indicators.
- ✓ The preparation of documents related to building renovation passports must be financed wholly or partially from external assets.
- ✓ There is a limited willingness from customers to pay for energy consultancy inspections - people do renovations as long as there are subsidies available.
- ✓ Deep renovation –among others- means that a certain capital has to be made available. Who and under which conditions will provide this financing is a critical issue.
- ✓ Sustainable and ecological building materials should be included with price ranges.
- ✓ Promote the iBRoad instruments to the banks that develop and implement energy loan programs.

Key Findings: Capacity Aspects

- ☒ The value of professional expertise should be emphasised, so as to tackle the current practice of DIY renovations.
- ☒ Keeping always in mind the building owners or users and their individual needs.
- ☒ Supporting building owners with clear and approachable guidance is necessary. The logbook and renovation roadmap should be as simple as can be to ensure success and positive impact.
- ☒ It is important to monitor if all parties can collaborate on the adoption and adaptation of such tools.
- ☒ Renovation advice should be technology neutral; it is essential to keep the necessary information clear and simple for everyone.



Download the full report at:



<https://ibroad-project.eu/results/reports/>

MEMBERS AREA

<https://ibroad-project.eu/members-area/>



if you are already member click [Login](#) or else click [Register](#)

Login

Register



Thank you



iBRoad

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iBRoad's vision for the BRP

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Lukas Kranzl, Iná Maia

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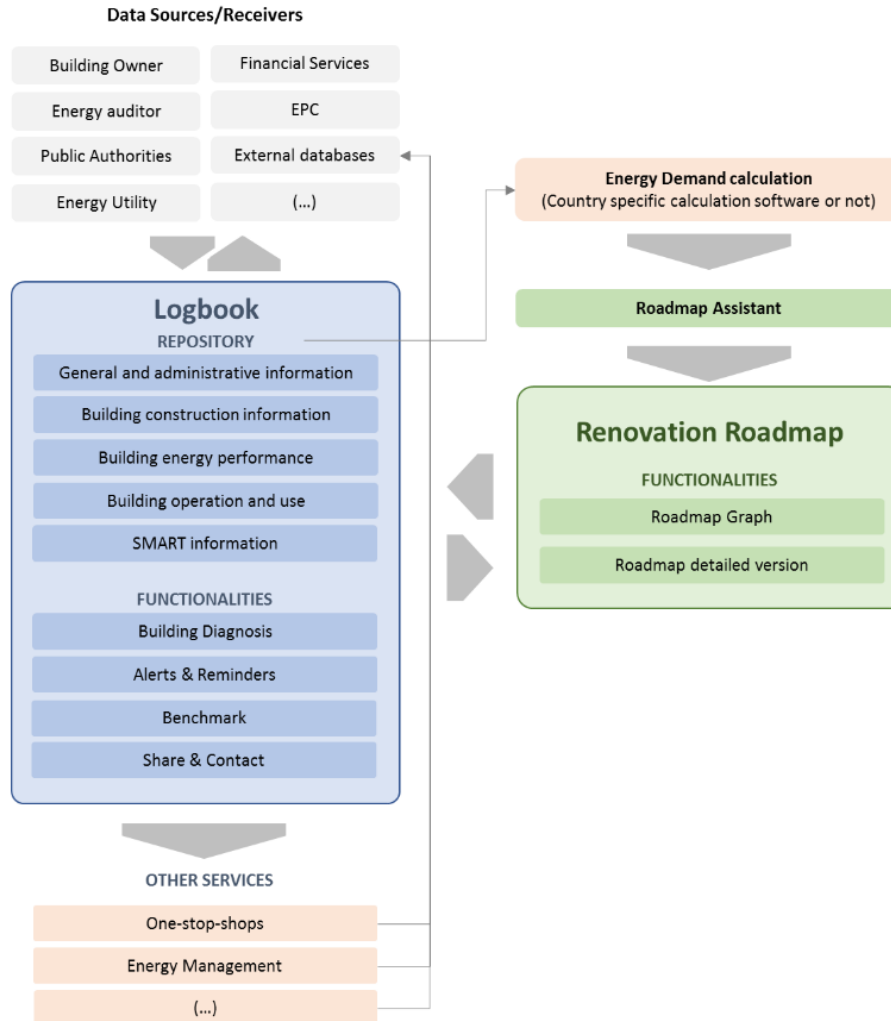
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Objectives and expectations for the iBRoad concept

- Support long-term planning of building renovation
- Allow storage and update of building related data
- Increases awareness about past, actual and possible future building's status
- Automatic data exchange between Roadmap and Logbook
- Dynamic interaction with users

iBRoad Concept

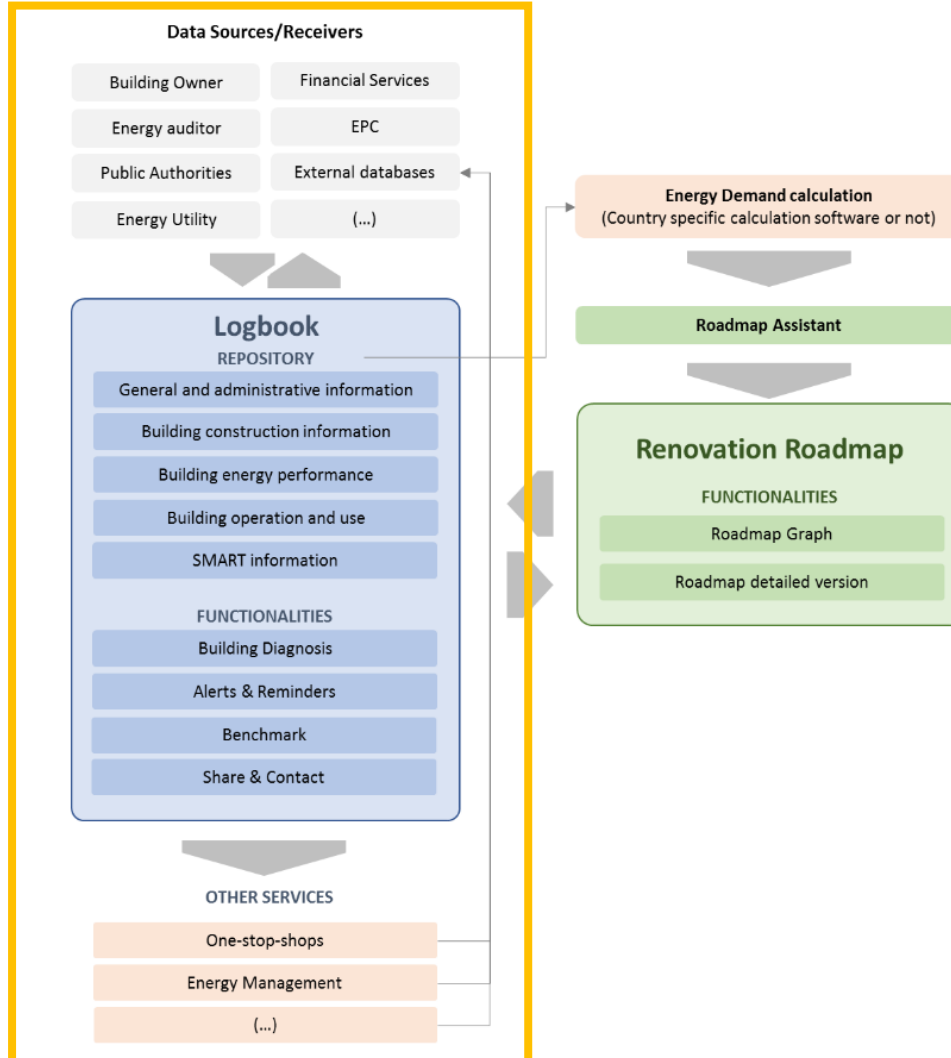
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- Data internal flow
- Data exchange with external tools
- Default database

iBRoad Concept

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- Data internal flow
- Data exchange with external tools
- Default database

• iBRoad Concept: Logbook

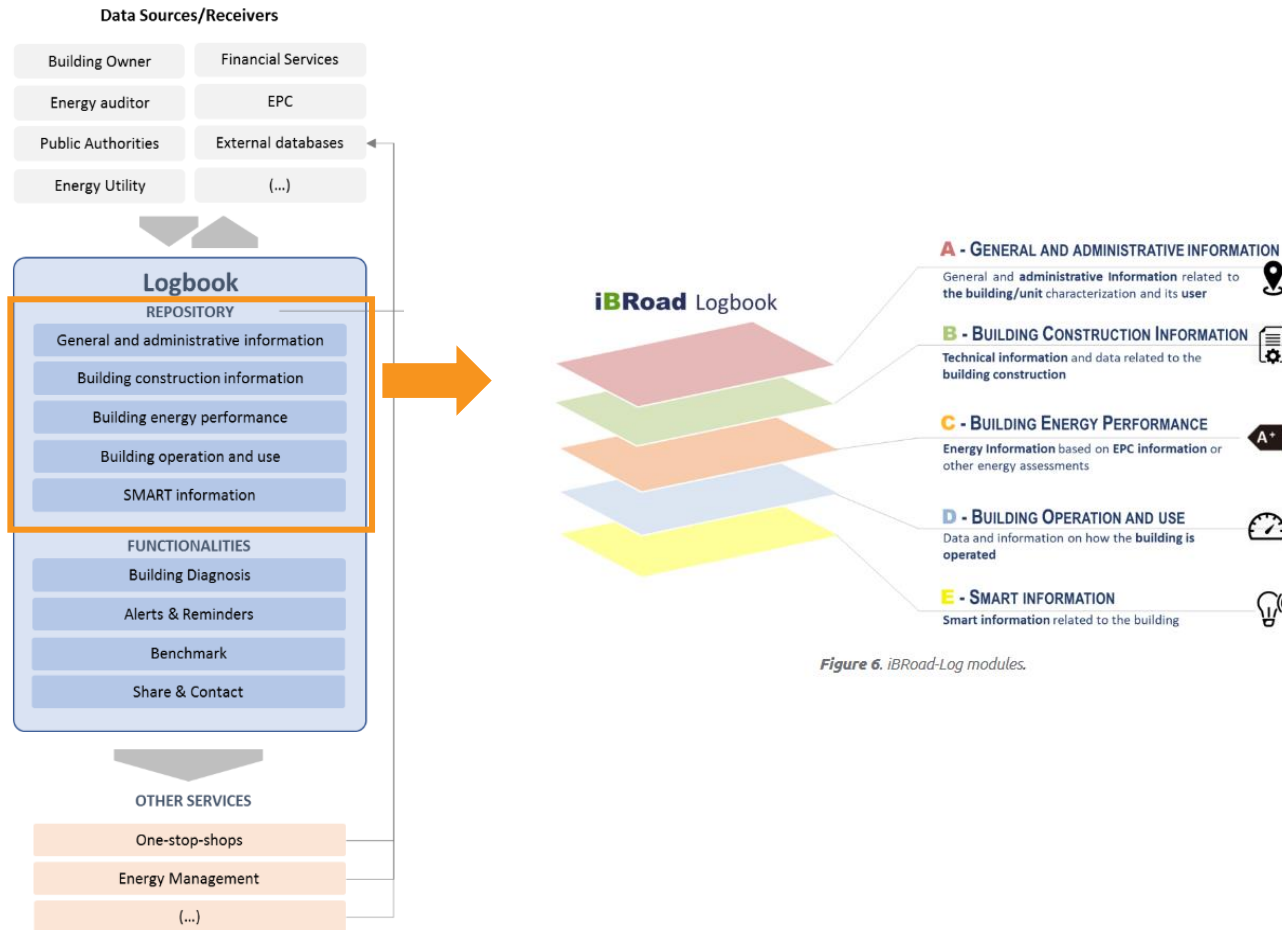
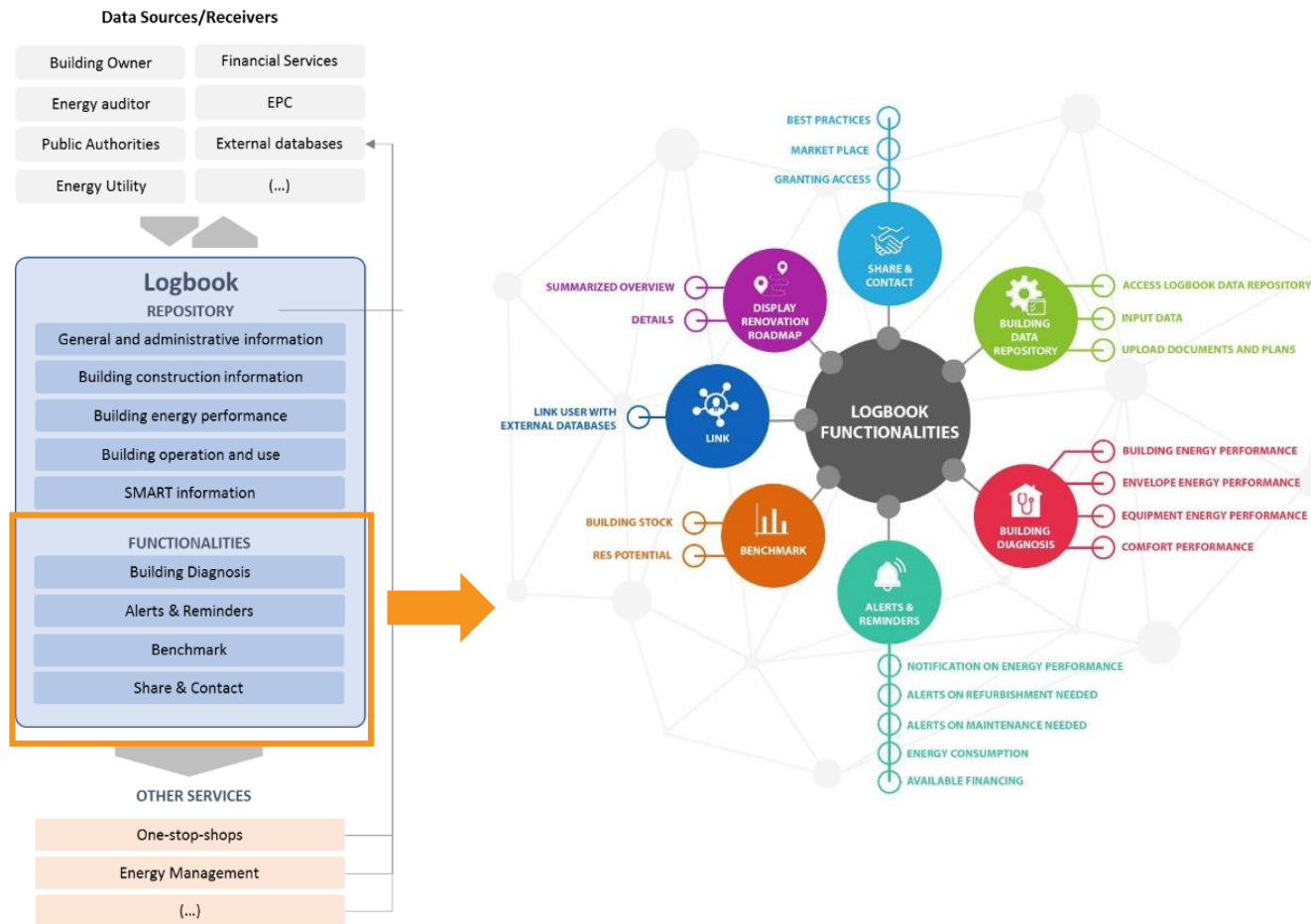


Figure 6. iBRoad-Log modules.

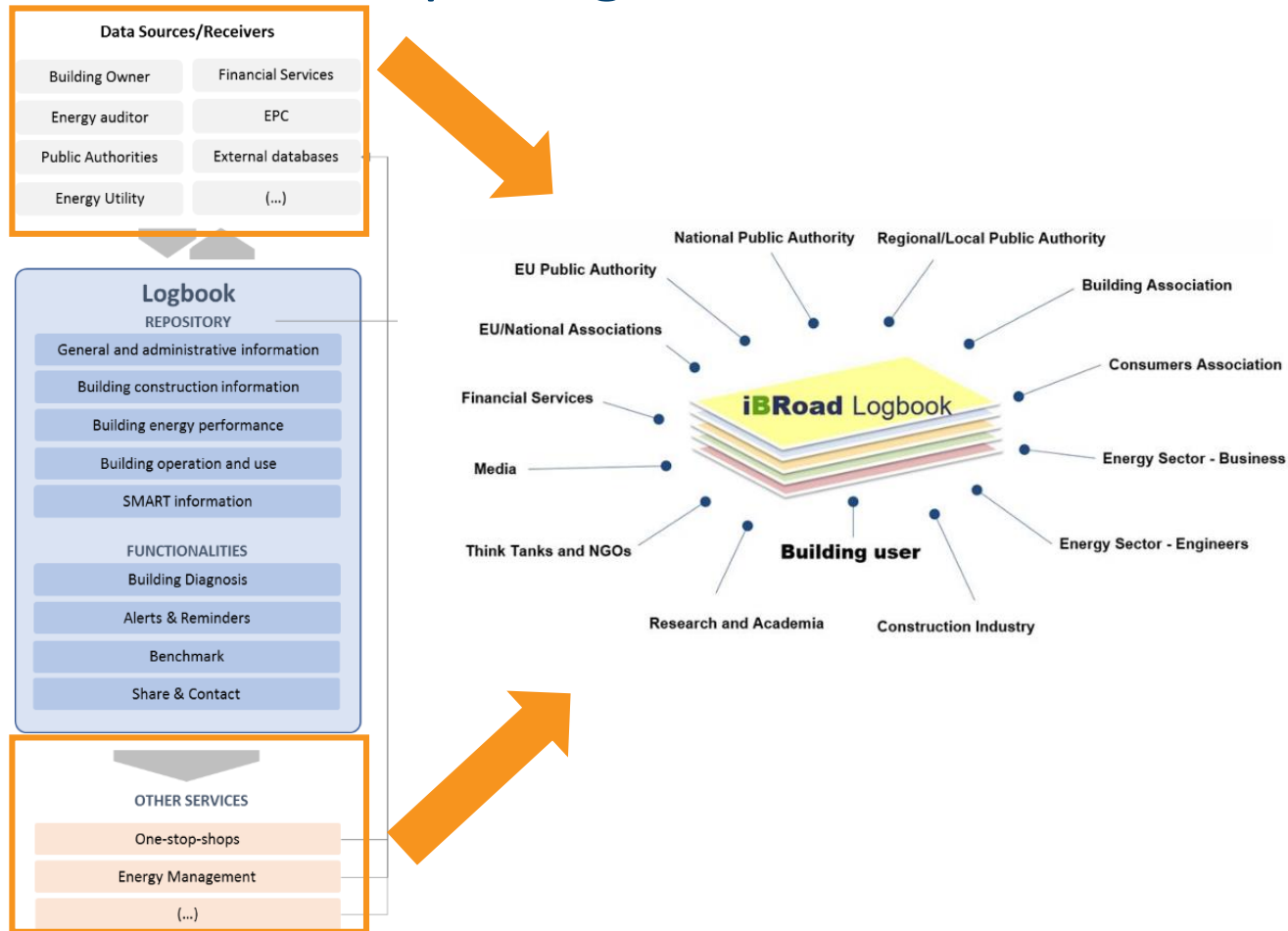
- **Repository**
- **Functionalities**
- **Input Data**
- **Output Data**

• iBRoad Concept: Logbook



- Repository
- **Functionalities**
- Input Data
- Output Data

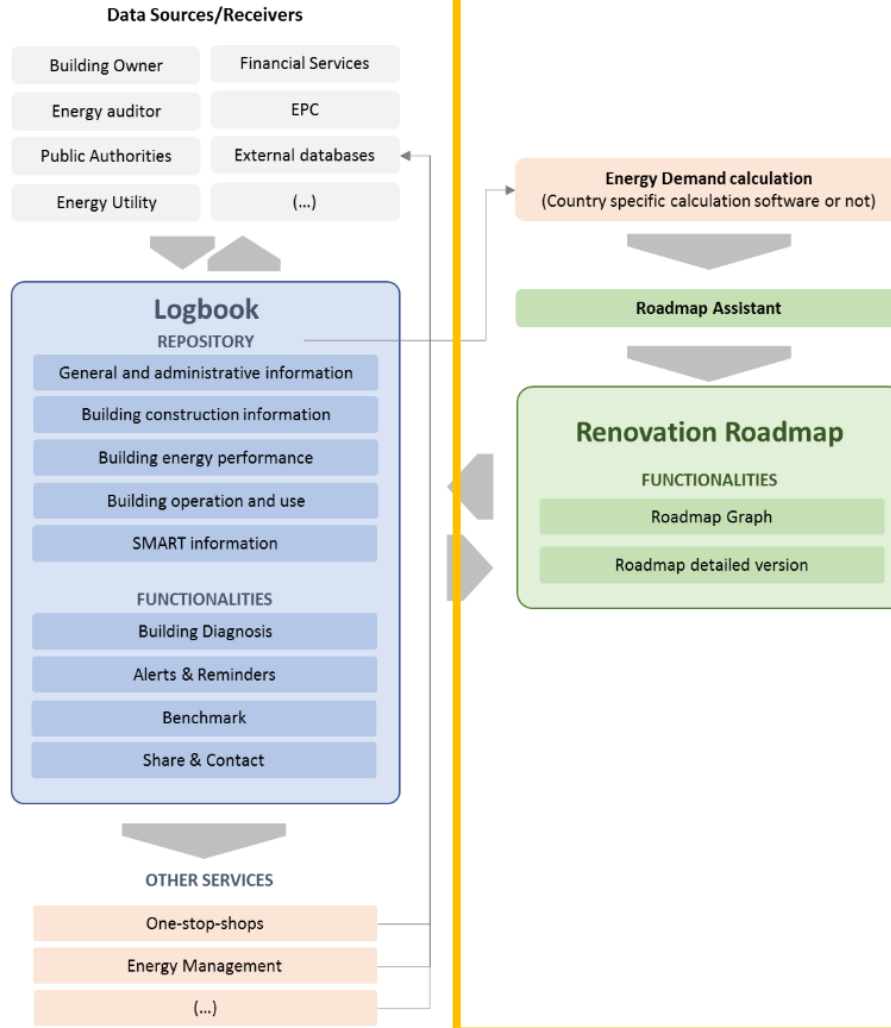
• iBRoad Concept: Logbook



- Repository
- Functionalities
- Input Data
- Output Data

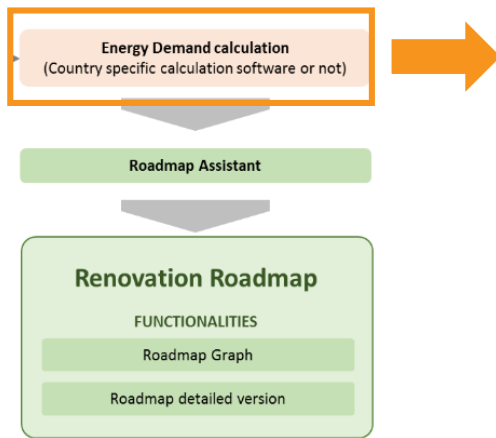
iBRoad Concept

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- Data internal flow
- Data exchange with external tools
- Default database

• iBRoad Concept: Roadmap



- Country specific calculation software

or

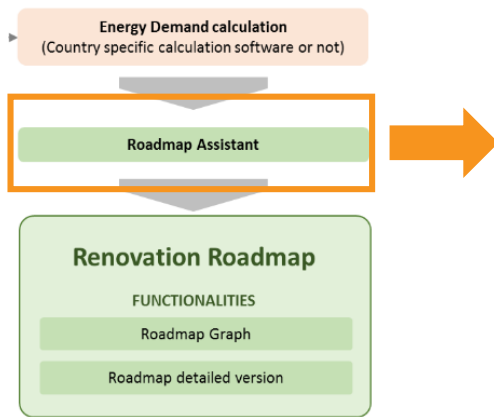
- Simplified energy demand calculation procedure

- Open source
- Python code
- Useful energy
- Final energy
- Primary energy
- CO₂ – Emissions

(Heating, Cooling and Lighting)

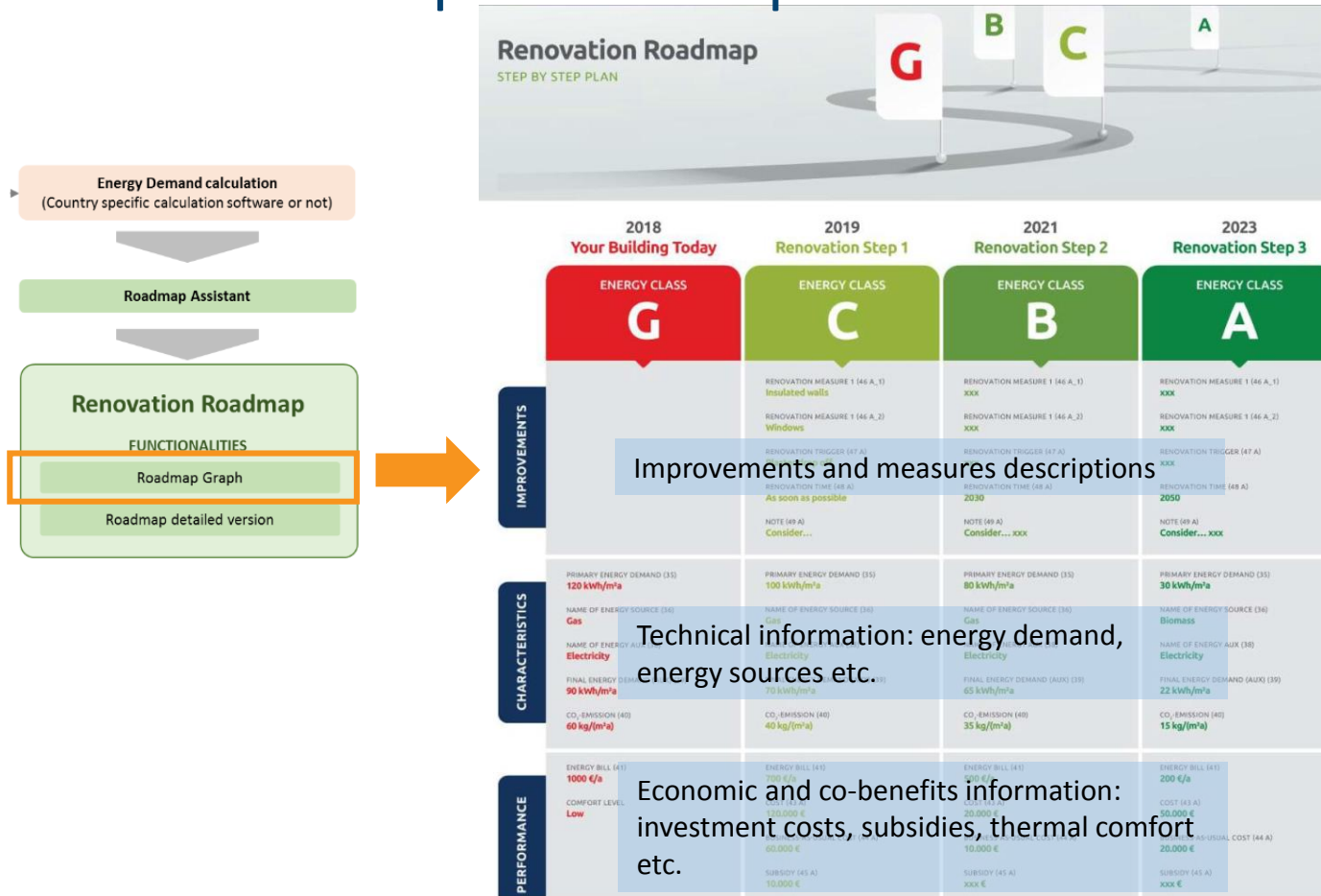
- **Energy demand calculation**
- Roadmap Assistant
- Roadmap plan
- Detailed Roadmap plan

• iBRoad Concept: Roadmap



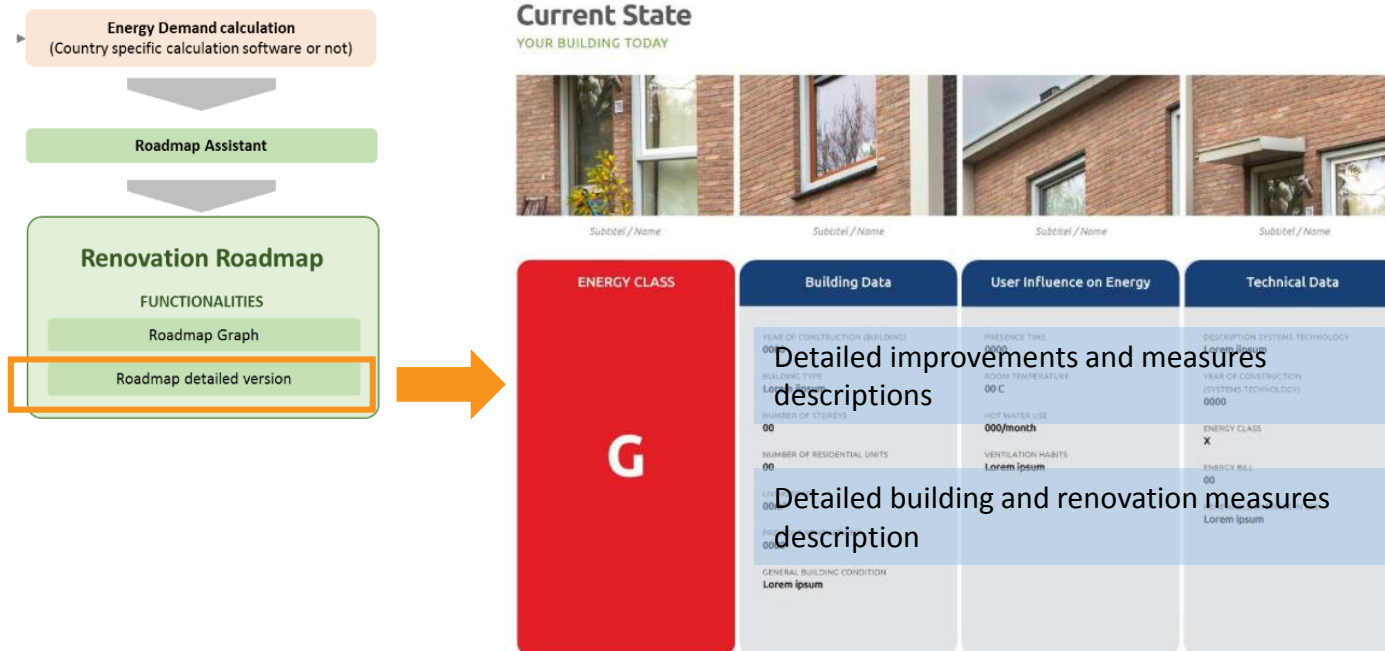
- Layouting tool
- Easy to handle
- Drop-down and free text fields
- Technical, economic and personal building data
- Energy demand calculation
- **Roadmap Assistant**
- Roadmap plan
- Detailed Roadmap plan

• iBRoad Concept: Roadmap



- Energy demand calculation
- Roadmap Assistant
- **Roadmap plan**
- Detailed Roadmap plan

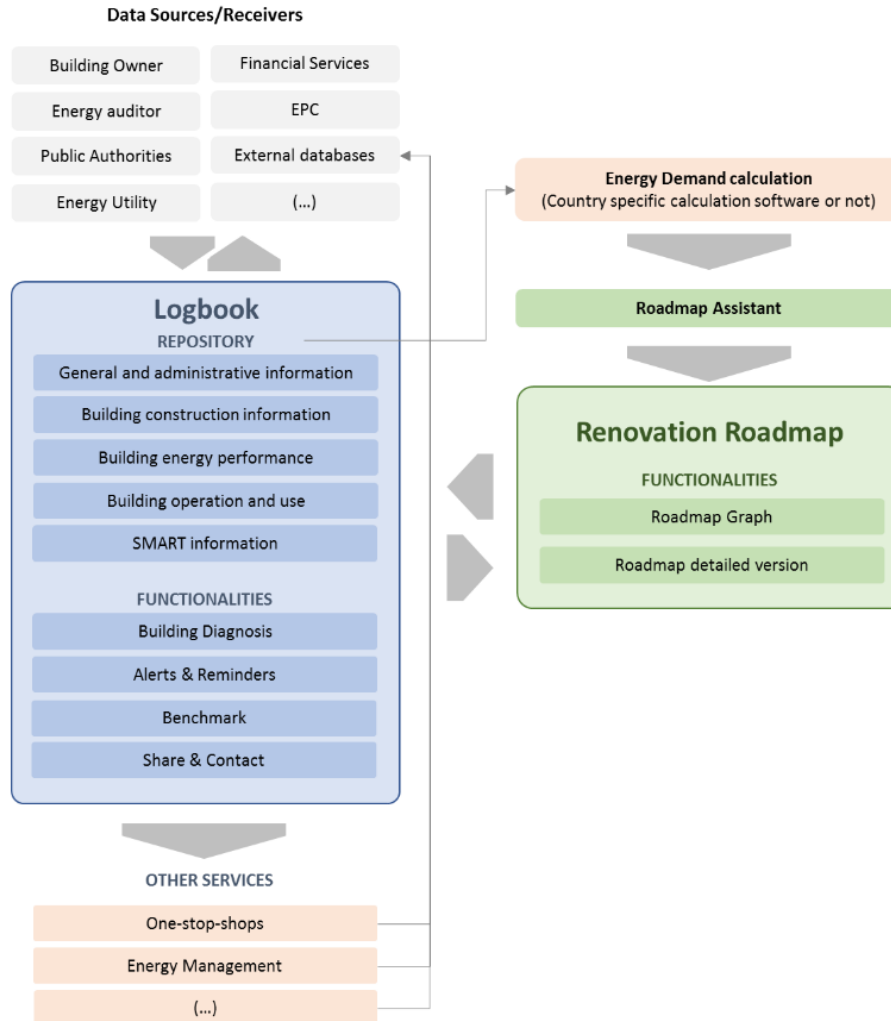
• iBRoad Concept: Roadmap



- Energy demand calculation
- Roadmap Assistant
- Roadmap plan
- **Detailed Roadmap plan**

iBRoad Concept

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- Data internal flow
- Data exchange with external tools
- Default database



Thank you



iBRoad

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iBRoad in the Field: Testing Roadmap and Logbook in European Countries

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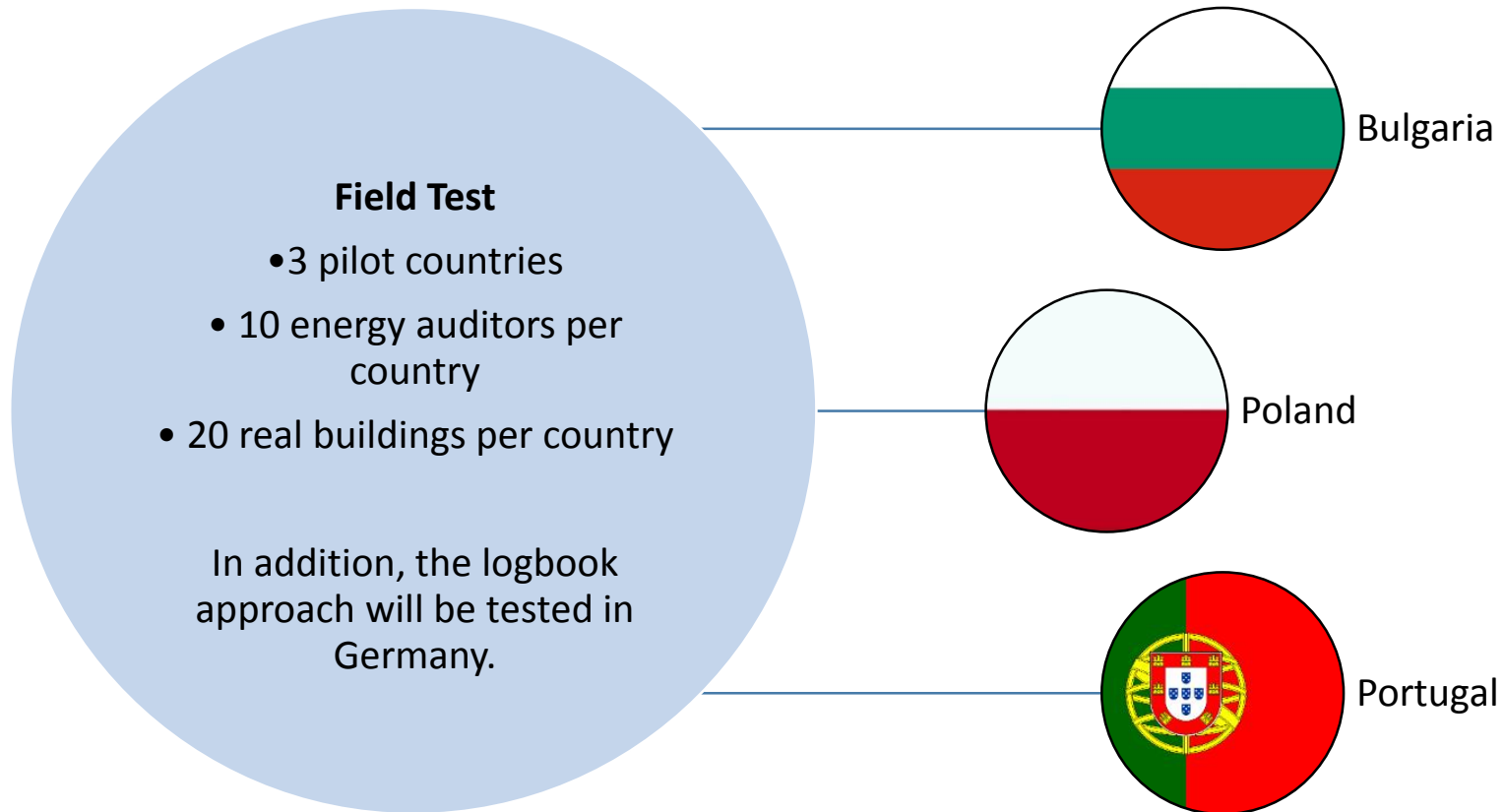
Dr. Martin Peht
ifeu – Institute for Energy
and Environmental
Research Heidelberg

BUILD UP Webinar

05.03.2019

■ Content

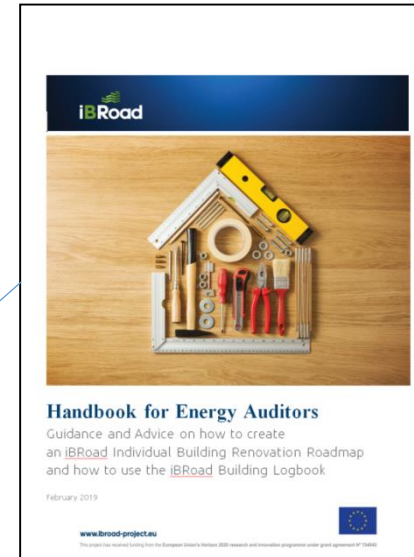
- Organisation of the Field Test
- iBRoad Roadmap
- iBRoad Logbook
- Evaluation of the Field Test



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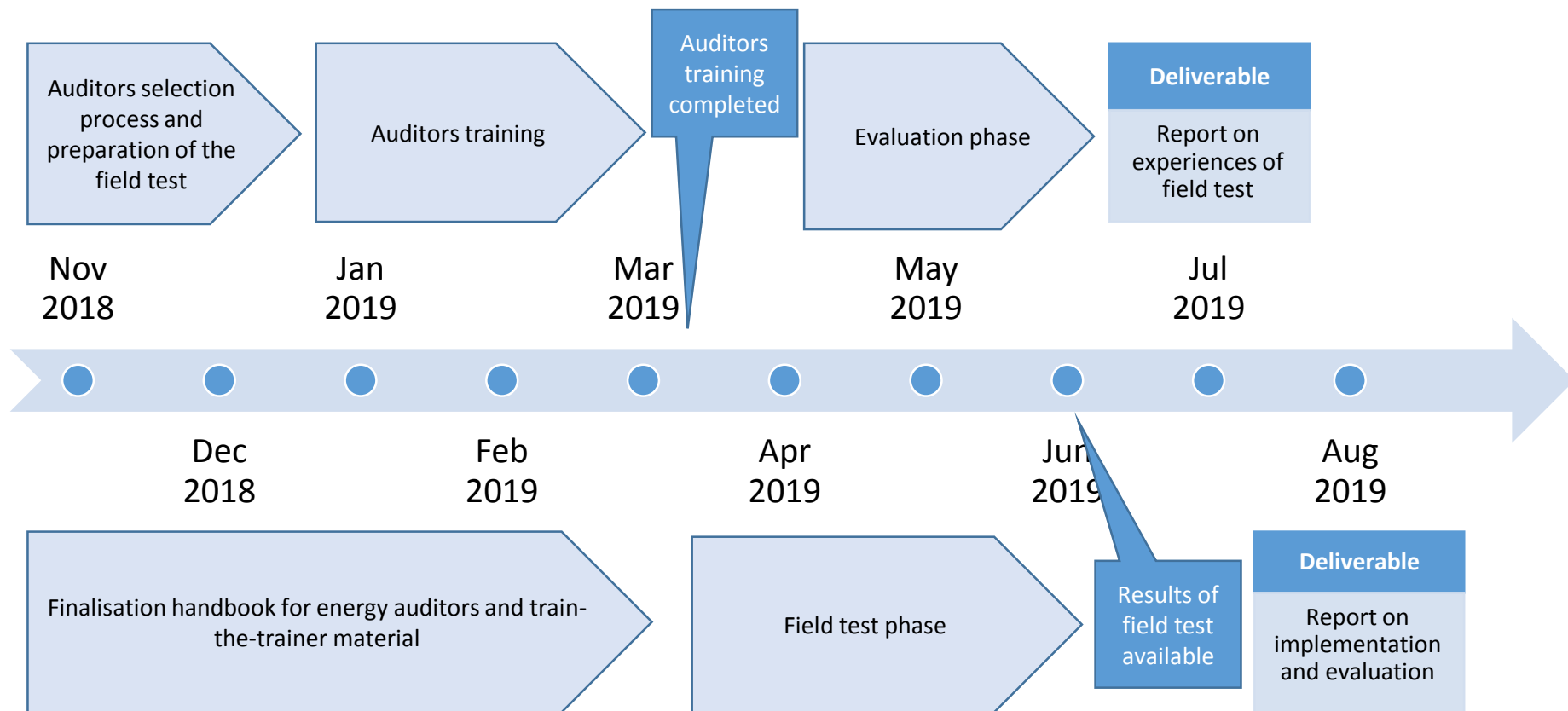
Toolkit for the field test

- Online tool Roadmap Assistant
- Online tool Logbook
- Handbook for auditors
- Video tutorial for auditors
- Telephone-hotline in the national language



Checklist







iBRoad Plan

Step by Step Plan

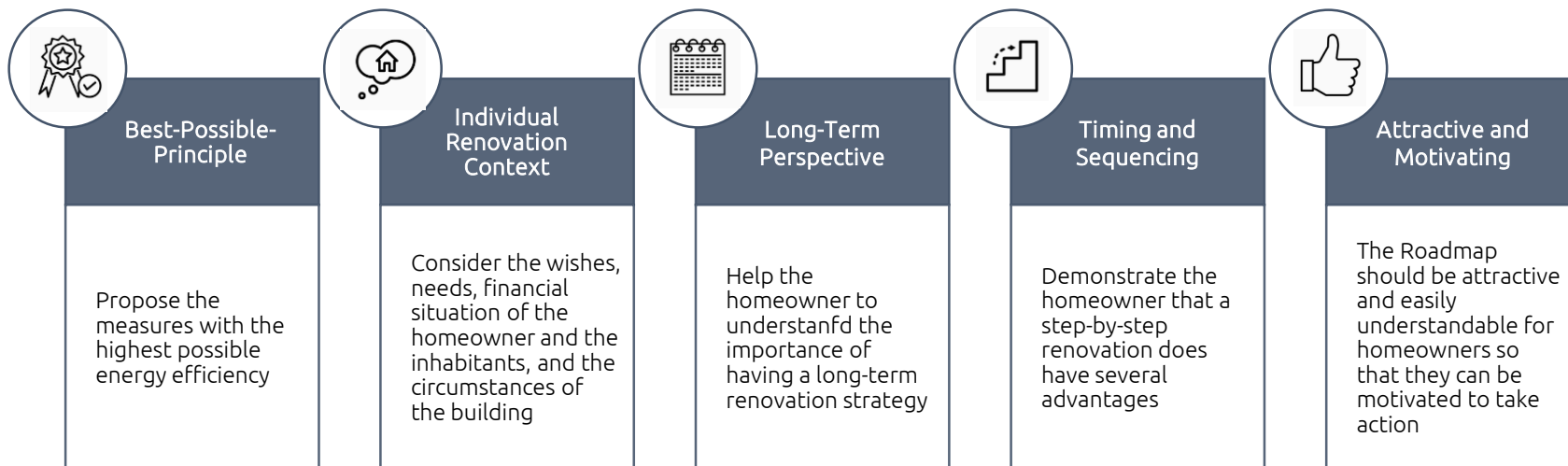
ENERGY CLASS	ENERGY CLASS	ENERGY CLASS
F	D	A
TODAY	WHEN BOILER NEEDS TO BE EXCHANGED	WHEN WINDOWS NEED TO BE EXCHANGED
YOUR BUILDING	RENOVATION STEP 1	RENOVATION STEP 2
	WHAT TO DO? • Improve the air permeability of the envelope • Optimization control system	WHAT TO DO? • Installation of a thermal insulating layer on top of concrete ground floor in contact with the ground
	INVESTMENT COSTS 456555 €	INVESTMENT COSTS 44 €
	COSTS FOR MAINTENANCE 2467 €	COSTS FOR MAINTENANCE 44 €
ENERGY BILL 159 €/a	ENERGY BILL 144 €/a	ENERGY BILL 143 €/a



iBRoad Logbook



- A - GENERAL AND ADMINISTRATIVE INFORMATION**
General and administrative information related to the building/unit characterization and its user
- B - BUILDING CONSTRUCTION INFORMATION**
Technical information and data related to the building construction
- C - BUILDING ENERGY PERFORMANCE**
Energy information based on EPC information or other energy assessments
- D - BUILDING OPERATION AND USE**
Data and information on how the building is operated
- E - SMART INFORMATION**
Smart information related to the building



Current building state

Detailed renovation step

Roadmap overview

Detailed Roadmap

iBRoad Plan Home Roadmap Detailed Roadmap Your Building Renovation Steps log out

Current State

Your Building Today

House, side 1
 House, side 2
 House, side 3
 House, side 4

ENERGY CLASS	Building Data	User Influence on Energy	Technical Data
G	Year of Construction of the Building 1994 Building Type Single family house Number of Floors 3 Number of Residential Units 250 m ² Previous Renovations	Hot Water Use Habits Several persons take a shower daily and take a bath at least once a week Ventilation Use Habits During heating period one window open for several hours per day	Renewable Energy Year of Construction of the Heating System 1994 Energy Bill 4000 €/a Living Space Area 250 m ²

User Influence

Even your behaviour influences energy use. Here are some pointers to lower your total energy use:

- Reduce room temperature: Every degree less room temperature saves around 6 % of heating energy. Usually 20 to 22 °C is sufficient in living rooms, 18 to 20 °C in the kitchen, 23 °C in the bathroom and 16 to 18 °C in the bedroom.
- Short and intensive ventilation: Third window hardly provides fresh air, but they cool walls and rooms down. Correct intensive ventilation should be provided 2 to 3 times a day for about 4 to 5 minutes, with open windows and doors in all rooms. This ensures the necessary air exchange.
- Vent reduction: If radiators chirp and do not warm up properly even though the thermostat is fully turned on, there is air in the radiator which wastes unnecessary energy. By regular venting you save heating costs and consume less CO₂.

Details of the renovation Roadmap

Renovation Step 4

ENERGY CLASS	Measure
A	Improvement Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diamummy...
	Technical Details Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diamummy...
	Renovation Costs Included Costs for Maintenance 10000 €
	Measure Substitution of the heating system by a heating pump
	Improvement Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diamummy...
	Technical Details Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diamummy...
	Renovation Costs Included Costs for Maintenance 10000 €

Previous Steps Benefits

Aesthetics	Refurbishment of the facade, thus optical improvement of the building. Improved window/door quality and heritage of the building
Health	The renovation measures reduce the amount of moisture entering your room. Reduction of indoor humidity, mold and bacteria
Noise Protection	There will be less windows with better sound insulation. Reduction of noise measures
Thermal Comfort	The temperature at the walls increases, so that they obtain a higher comfort. Reduction of draught, overheating and cold
Indoor Air Quality	Regulated ventilation improves the quality of your indoor space. High indoor air quality

Additional Benefits

Step by Step Plan

ENERGY CLASS	ENERGY CLASS	ENERGY CLASS
F	D	A
TODAY	WHEN BOILER NEEDS TO BE EXCHANGED	WHEN WINDOWS NEED TO BE EXCHANGED
YOUR BUILDING	RENOVATION STEP 1	RENOVATION STEP 2
	WHAT TO DO? • Improve the air permeability of the envelope • Optimization control system	WHAT TO DO? • Installation of a thermal insulating layer on top of concrete ground floor in contact with the ground
	INVESTMENT COSTS 450000 € COSTS FOR MAINTENANCE 2400 €	INVESTMENT COSTS 44 € COSTS FOR MAINTENANCE 44 €
ENERGY BILL 130 €/a	ENERGY BILL 140 €/a	ENERGY BILL 140 €/a



Detailed Renovation Roadmap

Step by Step Plan

	ENERGY CLASS	ENERGY CLASS	ENERGY CLASS	ENERGY CLASS	ENERGY CLASS
	G	E	D	B	A
	YOUR BUILDING	Renovation Step 1	Renovation Step 2	Renovation Step 3	Renovation Step 4
	When boiler needs to be exchanged	When boiler needs to be exchanged	When boiler needs to be exchanged	When boiler needs to be exchanged	When boiler needs to be exchanged
Measure	• Add a thermal solar system • Roof insulation	• Substitution of the old windows • Roof insulation	• Substitution of the old windows • Substitution of the heating system by a heating pump	• Substitution of the old windows • Substitution of the heating system by a heating pump	• Substitution of the old windows • Substitution of the heating system by a heating pump
Primary Energy Demand	250 kWh/m ² a	210 kWh/m ² a	180 kWh/m ² a	100 kWh/m ² a	100 kWh/m ² a
Main Energy Source	Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas
Final Energy Demand	250 kWh/m ² a	210 kWh/m ² a	180 kWh/m ² a	100 kWh/m ² a	100 kWh/m ² a
Main Source	Natural Gas	Natural Gas	Natural Gas	Natural Gas	Natural Gas
Auxiliary Energy Source	Electricity	Electricity	Electricity	Electricity	Electricity
Final auxiliary Energy Demand	15 kWh/m ² a	15 kWh/m ² a	15 kWh/m ² a	15 kWh/m ² a	15 kWh/m ² a
Auxiliary Energy Source	Electricity	Electricity	Electricity	Electricity	Electricity
Energy Bill	4000 €/a	2300 €/a	1800 €/a	1100 €/a	900 €/a
Carbon Emissions	40 kgCO ₂ /m ² a	30 kgCO ₂ /m ² a	20 kgCO ₂ /m ² a	10 kgCO ₂ /m ² a	10 kgCO ₂ /m ² a
Investment Costs for Renovation Step	450000 €	100000 €	25000 €	20000 €	20000 €
Included Costs for Maintenance	2400 €	10000 €	20000 €	40000 €	20000 €
Name of Incentives	None of incentives	None of incentives	None of incentives	None of incentives	None of incentives
Change Comfort	Increased	Increased	Increased	Increased	Increased

Building input

iBRoad Plan Your Roadmaps log out

Building Address

Street: Number: Postal Box:

Municipality: Zip Code: Country:

Building Facts

Subtitle:

Subtitle:

Subtitle:

Subtitle:

Number of Residential Units: Building Type:

Living Space Area: m² Year of Construction of the Building:

Year of Construction of the Heating System: Year of Construction of the Cooling System: Renewable Energies:

Number of Floors: Previous Renovations:

Use of the building

User Influence

Assessing the user influence is very important in producing the Renovation Roadmap. The Roadmap should always reflect the occupants needs and specific situations.

Please note that the following input fields all refer to the current building state.

Number of Inhabitants: Room Temperature during Heating Period:

Time of Occupants Presence: Hot Water Use Habits:

Ventilation Use Habits: Owner Satisfaction with Room Temperature:

Advices for efficient Use of the Building

Click on the advice to profile it into the next advice field

Reduce room temperature: Every degree less room temperature saves around 6 % of heating energy. Usually 20 to 22 °C is sufficient in living rooms, 18 to 20 °C in the kitchen, 24 °C in the bathroom and 16 to 18 °C in the bedroom.

Short and intensive ventilation: Third windows hardly provide fresh air, but they cool walls and rooms down. Correct intensive ventilation should be provided 2 to 3 times a day for about 4 to 5 minutes, with open windows and doors in all rooms. This ensures the necessary air exchange.

Keep radiators free: Prevent furniture, curtains and carpets in front of radiators so the heat can spread evenly throughout the room.

Keep blinds and curtains closed: Keep blinds and curtains closed at night to prevent heat from escaping on cold nights.

Automatic regulators: Programmable thermostats ensure more comfort and less consumption. This allows rooms to be heated to the right temperature at the right time. Some savings are possible.

Vent radiators: If radiators choke and do not warm up properly even though the thermostat is fully turned on, there is air in the radiator which wastes unnecessary energy. By regular venting you save heating costs and consume less CO₂.

Clean the radiator: Dust has an insulating effect and reduces the efficiency of the radiator.

Install insulation panels behind radiators: An insulation layer behind the radiator reduces the heat loss via the outer wall. Attention: Insulation panels enhance the risk of condensation between the panel and the wall. This can lead to mold growth, especially in wet old building walls. Therefore, check regularly whether moisture is forming between the panel and the wall. If necessary, remove the insulation panel.

Insulate windows: If you insulate draughty windows externally, you avoid CO₂. The investment in sealing tape is worth it: you save a lot of heating costs.

Costs for hot water: 12 % of the energy consumption is used just to heat water. This is clearly noticeable on your heating bill for central hot water preparation. Cold hand washing, showers instead of bathing and economy shower heads and perfumes help to save hot water.

Advices for efficient Use of the Building

Energy consumption

iBRoad Plan

Please enter the current Building State

Create current Building State

Energy Class:

Energy Source	Final Energy Demand	Energy Costs
Main Energy Source		
Natural Gas	200 kWh/m ² a	4000
Second Energy Source		
	0 kWh/m ² a	0
Third Energy Source		
	0 kWh/m ² a	0
Auxiliary Energy Source		
Electricity	30 kWh/m ² a	600
Carbon Emissions		
	40 kg/(m ² a)	250 kWh/m ² a
Primary Energy Demand		
		4600

Enter renovation step

iBRoad Plan Your Roadmaps log out

You are here / Test_Brüssel

New Renovation Step

Trigger for Renovation Step: Please select
Estimated Date for Renovation Step: Please select

Building State after Renovation

Energy Class: Please select

Energy Source	Final Energy Demand	Energy Costs per Year
Main Energy Source	0 kWh/m ² a	0 €/a
Second Energy Source	0 kWh/m ² a	0 €/a
Third Energy Source	0 kWh/m ² a	0 €/a
Auxiliary Energy Source	0 kWh/m ² a	0 €/a
Carbon Emissions	0 kg/m ² a	0.0 €/a

Economic Analysis

Name of Incentives: Incentives: 0 €

Conditions of Incentives:

Enter co-benefits

Additional benefits

Aesthetics
Improved architectural Quality and Prestige of the Building

Health
Reduction of Indoor Humidity, Mold and Toxins

Noise Protection
Reduction of Noise Intrusions

Security
Improved Protection against Burglary and Theft

Thermal Comfort
Reduction of Draught, Overheating and Cold

Indoor Air Quality
High Indoor Air Quality

Lighting
More efficient Lighting, higher amount of Daylight and better illumination.

Create Renovation step

Enter details for renovation steps

iBRoad Plan Your Roadmaps log out

You are here / 190211_Example_Handbook / Renovation Step 1

Detail of the Renovation - Renovation Step 1

Measures

Name	Actions
Add a thermal solar system	

edit this Renovation Step Create new Measure

Trigger for Renovation Step: Pending Maintenance Measures
Estimated Date for Renovation Step: When Boiler needs to be exchanged

Building State after Renovation

Energy Class: E

Primary Energy Demand: 210.0

Energy Source	Final Energy Demand	Energy Costs per Year
Main Energy Source: Natural Gas	200.0 kWh/m ² a	2000.0 €/a
Second Energy Source: Solar and Ambient Energy	15.0 kWh/m ² a	0.1 €/a
Auxiliary Energy Source: Electricity	15.0 kWh/m ² a	300.0 €/a
Carbon Emissions: 30.0 kg/m ² a	Primary Energy Demand: 210.0 kWh/m ² a	Energy Bill: 2300.1 €/a

Economic Analysis

Investment Costs for Renovation Step: 10000.0 €
Included Costs for Maintenance: 15000.0 €

Name of Incentives: KWK
Incentives: 5000.0 €

Conditions of Incentives:

Go to Overview Create next Renovation Step

Building Address

Building Facts

Current State

Your Building Today



House_side 1



House_side 2



House_side 3



House_side 4



Building Data
Year of Construction of the Building 1994
Building Type Single Family House
Number of Floors 3
Number of Residential Units 1
Living Space Area 250 m ²
Previous Renovations

User Influence on Energy
Attendance Time several persons take a shower daily and take a bath at least once a week
Hot Water Use Habits several persons take a shower daily and take a bath at least once a week
Ventilation Use Habits during heating period one window open for several hours per day

Technical Data
Renewable Energies 1994
Year of Construction of the Heating System 1994
Energy Bill 4600 €/a

User Influence

Even your behaviour influences energy use. Here are some pointers to lower your total energy use.



Reduce room temperature: Every degree less room temperature saves around 6 % of heating energy. Usually 20 to 22 °C is sufficient in living rooms, 18 to 20 °C in the kitchen, 23 °C in the bathroom and 16 to 18 °C in the bedroom.

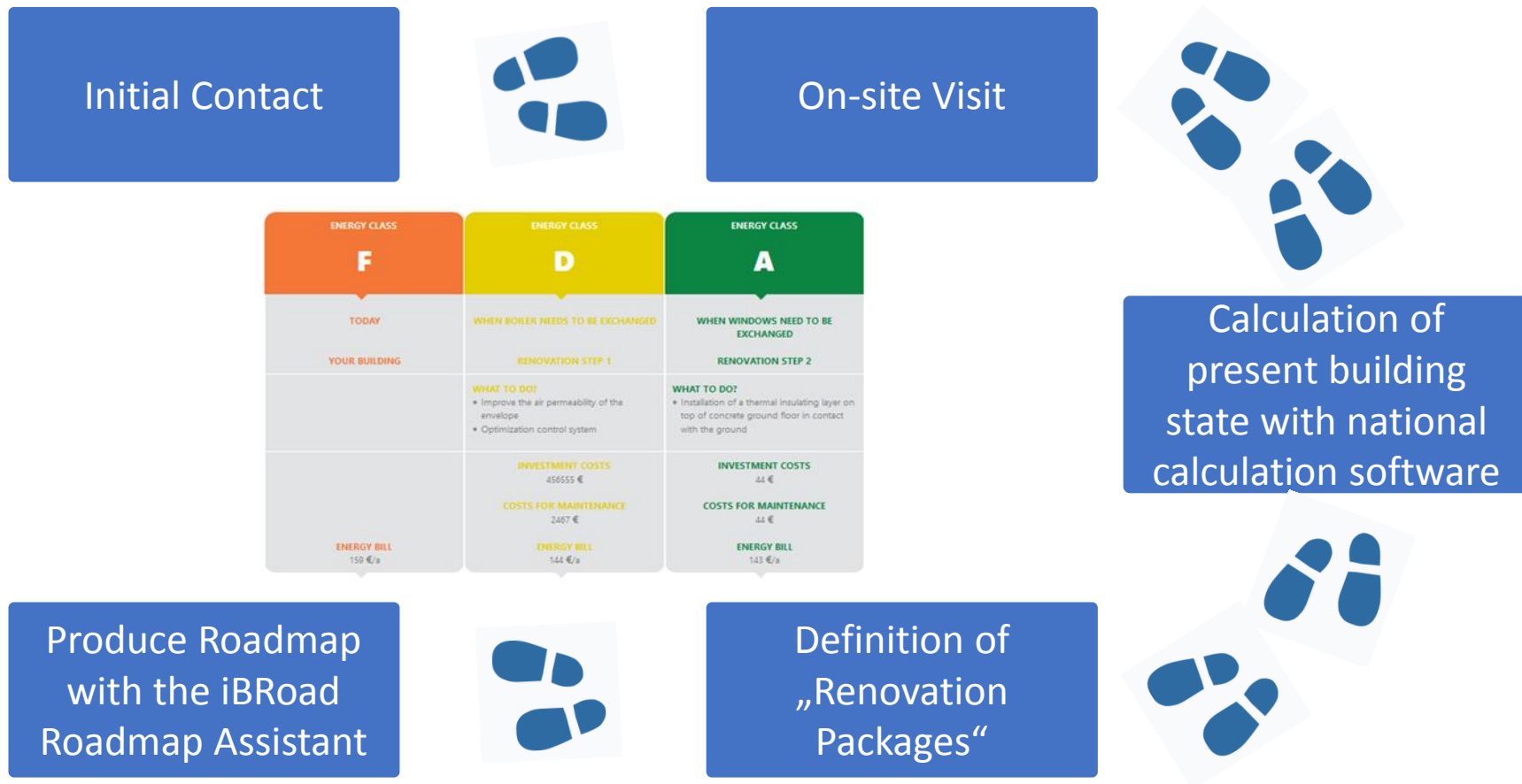


Short and intensive ventilation: Tilted windows hardly provide fresh air, but they cool walls and rooms down. Correct intensive ventilation should be provided 2 to 3 times a day for about 4 to 5 minutes, with open windows and doors in all rooms. This ensures the necessary air exchange.



Vent radiators: If radiators chortle and do not warm up properly even though the thermostat is fully turned on, there is air in the radiator which wastes unnecessary energy. By regular venting you save heating costs and consume less CO₂.

Renovation Roadmap: energy auditors carry out complete on-site audits in real buildings



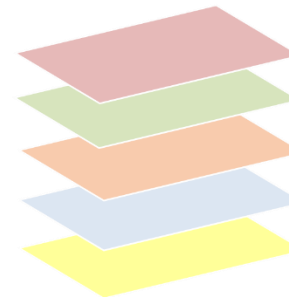


iBRoad Plan

Step by Step Plan

ENERGY CLASS	ENERGY CLASS	ENERGY CLASS
F	D	A
TODAY	WHEN BUILT NEEDS TO BE EXCHANGED	WHEN WINDOWS NEED TO BE EXCHANGED
YOUR BUILDING	RENOVATION STEP 1	RENOVATION STEP 2
	WHAT TO DO? • Improve the air permeability of the envelope • Optimization control system	WHAT TO DO? • Installation of a thermal insulating layer on top of concrete ground floor in contact with the ground
	INVESTMENT COSTS 48000 €	INVESTMENT COSTS 40 €
	COSTS FOR MAINTENANCE 1000 €	COSTS FOR MAINTENANCE 40 €
ENERGY BILL 100 €/a	ENERGY BILL 144 €/a	ENERGY BILL 100 €/a

iBRoad Logbook



A - GENERAL AND ADMINISTRATIVE INFORMATION

General and administrative information related to the building/unit characterization and its user



B - BUILDING CONSTRUCTION INFORMATION

Technical information and data related to the building construction



C - BUILDING ENERGY PERFORMANCE

Energy information based on EPC information or other energy assessments



D - BUILDING OPERATION AND USE


Data and information on how the building is operated



E - SMART INFORMATION

Smart information related to the building





Current building state – 2019-02-11

Building Operation and Use

Energy demand

Number of inhabitants

Room temperature during heating period


Room temperature during summer

Time of occupants presence

Owner satisfaction with room temperature

Energy consumption

Energy bill types

Energy bill type 1 

Energy source

Start of consumption period

End of consumption period


Consumption


Billing cost

Energy supply company

Contracted power

Tariff option

Document 1 



Current building state – 2019-02-11

Building Operation and Use

Start page

My buildings

Data Store Repository
My documents & plans

Building diagnosis

Alerts & Reminders

Roadmaps

Current building state – 2019-02-11

Smart Information

SRI - Smart Readiness Indicator Save

Other smart indicators

Number of EV charging points

Smart district indicators

Save

[← back](#)

Start page

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Billing cost

Energy supply company

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Current building state – 2019-02-11

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Energy

Number

Room temperature

Room temperature

Time of day

Owner's name

Temperature

Energy

Energy

Start of

End of

Consumption

Billing cost

Energy supply cost

Contracted power

Tariff option

Current building state – 2019-02-11

Smart Information

My documents & plans

Document 1

Description

File

+ New document


Save

Choose file

Browse

Save


back



Current building state – 2019-02-11


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Current building state – 2019-02-11

Smart Information




My documents & plans

Document 1 


Description

Save


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- Roadmaps




Building diagnosis



Overall Performance





Envelope Performance





Equipment Performance


- Start page
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- Building diagnosis
 - Overall Performance
 - Envelope Performance
 - Equipment Performance
 - Comfort Performance
 - Recommendations
- Alerts & Reminders















Current building state – 2019-02-11


Building Operation and Use

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Current building state – 2019-02-11

Smart Information




My documents & plans


Document 1 


Description

Save

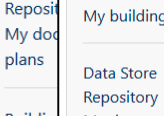


Building diagnosis



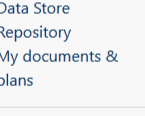


- Start page
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- Alerts & Reminders
- Roadmaps




Current building state – 2019-02-11

Smart Information

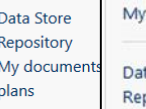


My documents & plans


Document 1 


Description

Save



Building diagnosis





Overall Performance

Energy label: C


Your energy consumption: ... kWh/m²a

Total share of renewable energy: 0%

Average consumption in **Germany**

101


kWh/m²a
(based on 1 buildings)




C

Average consumption in **Europe**

101






Current building state – 2019-02-11


Building Operation and Use

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- Building diagnosis
- Alerts & Reminders
- Roadmaps



Current building state – 2019-02-11

Smart Information

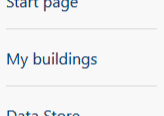



My documents & plans

Document 1


Description


Save



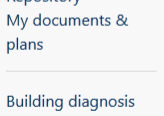


Building diagnosis





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- Roadmaps



Start page

My buildings

Data Store Repository

My documents & plans


Building diagnosis

Alerts & Reminders

Roadmaps


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Overall Performance





Envelope Performance

2019-02-11





Walls







Roof






Windows







Current building state – 2019-02-11

Building Operation and Use

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Number

Room temperature

Room temperature

Time of day

Owner's temperature

Energy

Energy

Energy

Start of

End of


Consumption

Billing cost

Energy supply cost


Contracted power

Tariff option



Current building state – 2019-02-11

Smart Information



My documents & plans

Document 1

Description

Save

Start page

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Data Store Repository



My documents & plans

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Alerts & Reminders

Roadmaps

Building diagnosis

Start page

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Building diagnosis

Alerts & Reminders

Roadmaps

Overall Performance



Envelope Performance

2019-02-11

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Roadmaps

Link roadmap to this building

Please enter the roadmap coupling code you've received from your auditor.

Roadmap coupling code

326172699063C6

back

Overall Performance

Envelope Performance

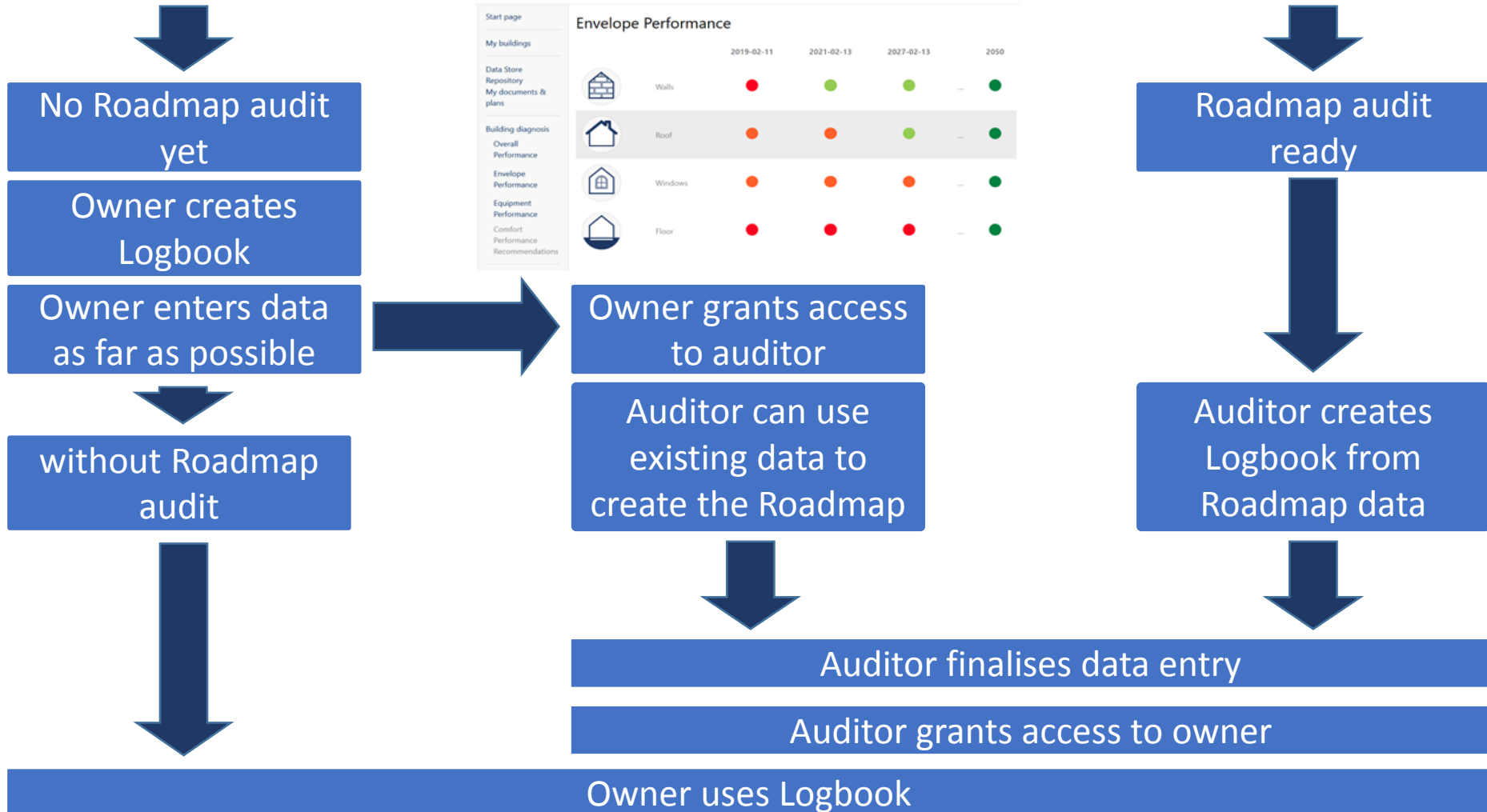
Equipment Performance

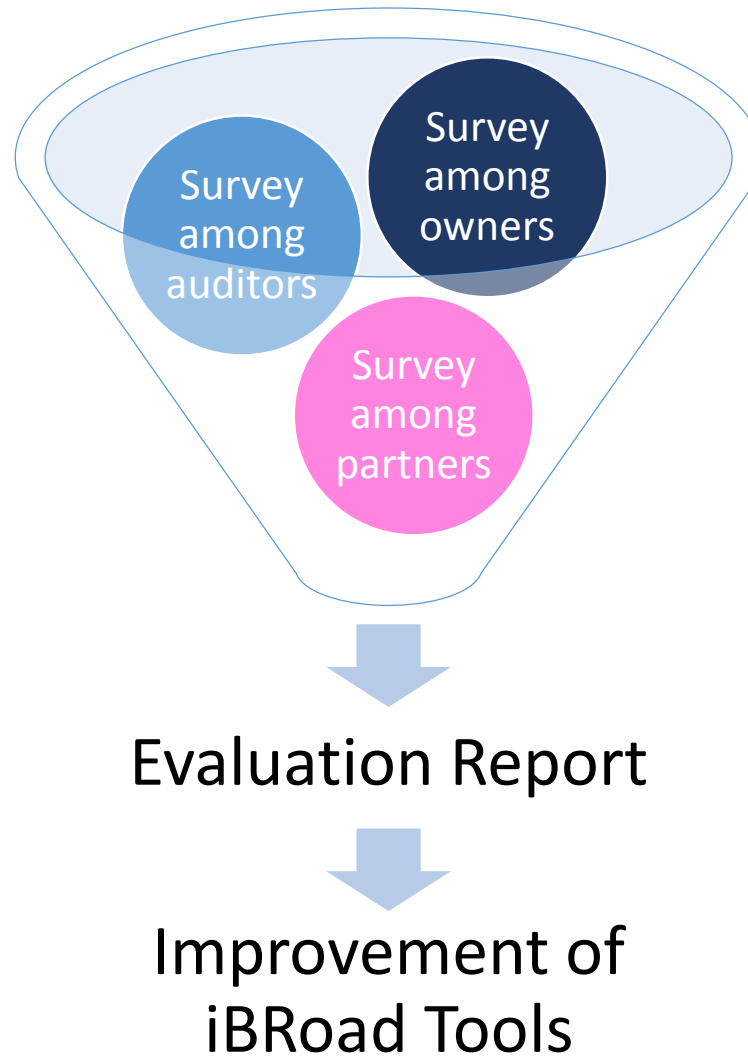
Comfort Performance

Recommendations

Alerts & Reminders

Logbook Steps: alternative ways to produce the Logbook







Thank you



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