18.10.2024

ComActivate
Enabling community action for energy sufficiency

ComActivate Workshop on Renovation Passports from iBRoad to iBRoad2EPC

Peter Mellwig

ifeu - Institute for Environmental and Energy Research Heidelberg

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor CINEA can be held responsible for them.

ComActivate
Enabling community action for energy sufficiency

Content

iBRoad

iBRoad2EPC

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor CINEA can be held responsible for them.

ComActivate
Enabling community action for energy sufficiency

Content

iBRoad

iBRoad2EPC

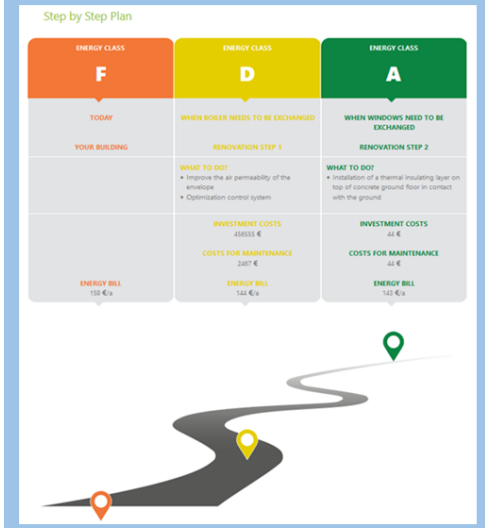
Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor CINEA can be held responsible for them.

Two parts of iBRoad

iBRoad

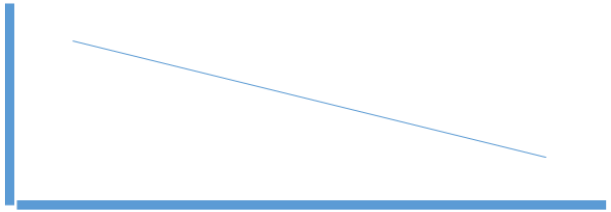
Renovation Passport
iBRoad Plan



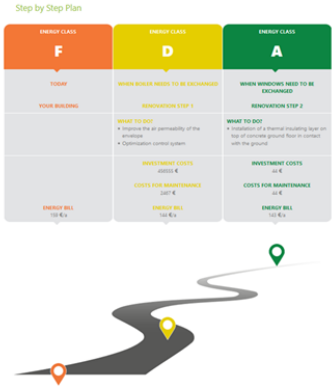
Digital building logbook
iBRoad Logbook

Renovation Roadmap – Why?

1. Climate targets are ambitious. Yet building components have long life spans.



2. Today most renovations are stepwise. Still they need to lead to a carbon neutral building stock.



Renovation Roadmap – Why?

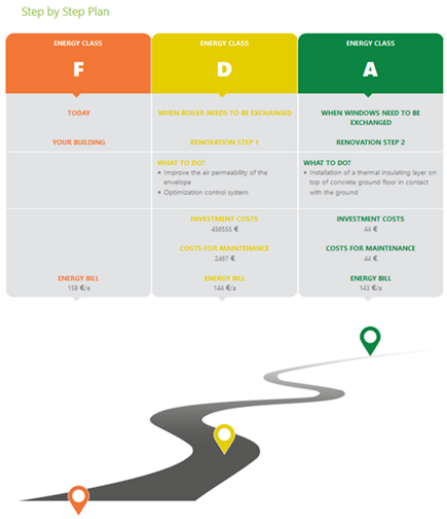
3

it takes an overarching plan to combine single renovation steps to a deep renovation

4

a long-term plan can consider the occations („trigger points“) in the homeowners´ lives

What is the Renovation Roadmap?



iBRoad Roadmap:
diagnosis tool on buildings performance and individual stepwise renovation plan for building owners

Features:

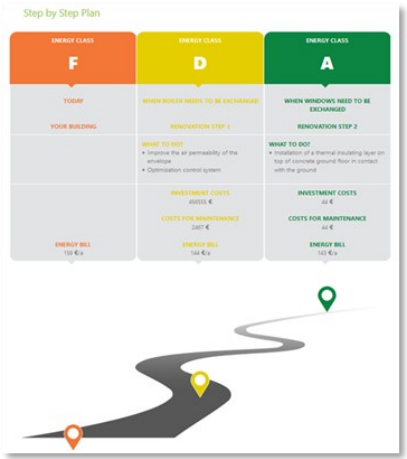
- long-term renovation strategy
- developed individually together with the owner
- targeted measures from the beginning finally lead to deep renovation

ComActivate
Enabling community action for energy sufficiency

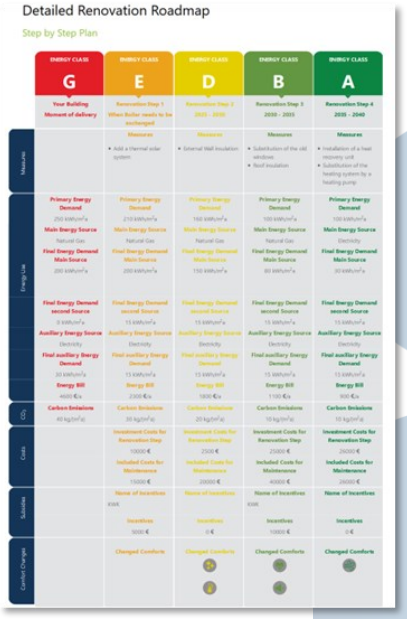
Pages of the Renovation Roadmap

Current building state

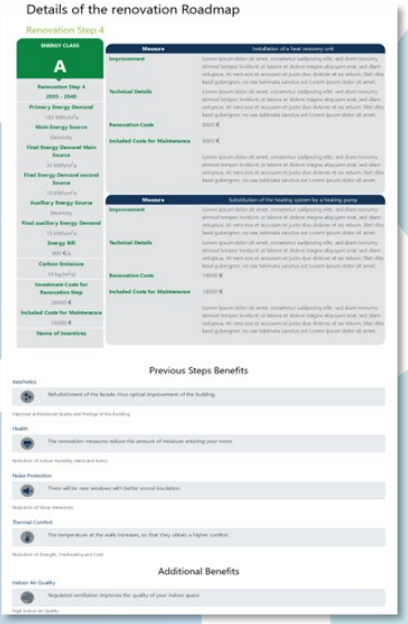
Roadmap overview



Detailed Roadmap



Detailed renovation step



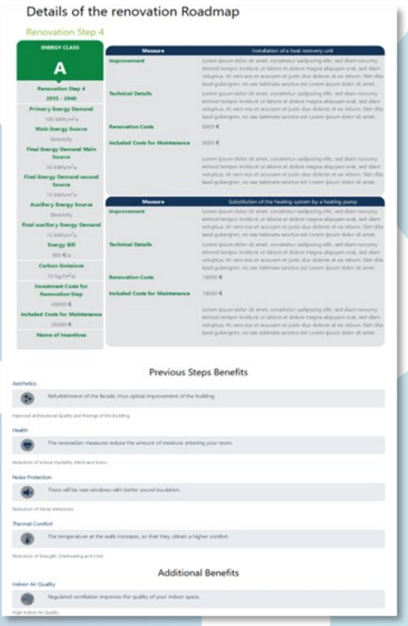
Detailed Renovation Roadmap

Step by Step Plan

ComActivate
Enabling community action for energy sufficiency

	ENERGY CLASS G	ENERGY CLASS E	ENERGY CLASS D	ENERGY CLASS B	ENERGY CLASS A
	Your Building Moment of delivery	Renovation Step 1 When Boiler needs to be exchanged	Renovation Step 2 2025 - 2030	Renovation Step 3 2030 - 2035	Renovation Step 4 2035 - 2040
Measures		Measures • Add a thermal solar system	Measures • External Wall insulation	Measures • Substitution of the old windows • Roof insulation	Measures • Installation of a heat recovery unit • Substitution of the heating system by a heating pump
Energy Use	Primary Energy Demand 250 kWh/m²a	Primary Energy Demand 210 kWh/m²a	Primary Energy Demand 160 kWh/m²a	Primary Energy Demand 100 kWh/m²a	Primary Energy Demand 100 kWh/m²a
	Main Energy Source Natural Gas	Main Energy Source Natural Gas	Main Energy Source Natural Gas	Main Energy Source Natural Gas	Main Energy Source Electricity
	Final Energy Demand Main Source 200 kWh/m²a	Final Energy Demand Main Source 200 kWh/m²a	Final Energy Demand Main Source 150 kWh/m²a	Final Energy Demand Main Source 80 kWh/m²a	Final Energy Demand Main Source 30 kWh/m²a
	Final Energy Demand second Source 0 kWh/m²a	Final Energy Demand second Source 15 kWh/m²a	Final Energy Demand second Source 15 kWh/m²a	Final Energy Demand second Source 15 kWh/m²a	Final Energy Demand second Source 15 kWh/m²a
	Auxiliary Energy Source Electricity	Auxiliary Energy Source Electricity	Auxiliary Energy Source Electricity	Auxiliary Energy Source Electricity	Auxiliary Energy Source Electricity
	Final auxiliary Energy Demand 30 kWh/m²a	Final auxiliary Energy Demand 15 kWh/m²a	Final auxiliary Energy Demand 15 kWh/m²a	Final auxiliary Energy Demand 15 kWh/m²a	Final auxiliary Energy Demand 15 kWh/m²a

Detailed renovation step



Pages of the Renovation Roadmap

Current building state

Roadmap

Detailed

Detailed

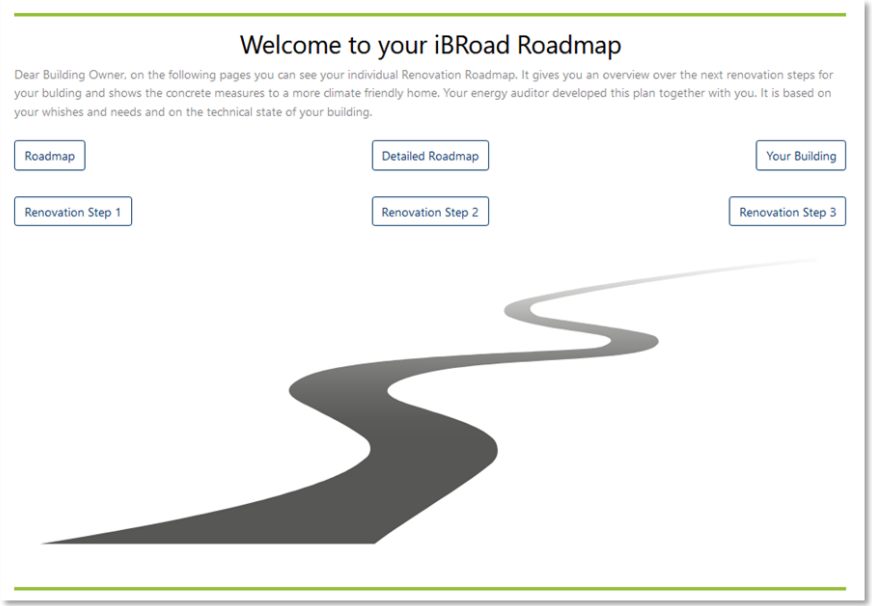
Measure	Roof insulation
Renovation Costs	25000 €
Included Costs for Maintenance	18000 €
Note	If the roof is insulated, it must be taken into account in a later outside wall insulation. The roof overhang must be designed so that the future wall insulation is sufficiently covered (thickness of the insulation plus sufficient overhang). Potentially, the underside of the roof overhang shall be provided with a temporary covering. New downpipe connections on the ground should already consider the extent of the future wall insulation.
Incentives Information only relating to this Measure	Funding
Specific Incentive Bonus	6000 €

Roadmap Assistant in general

iBRoad Roadmap Assistant

The iBRoad Roadmap Assistant is not publicly available because

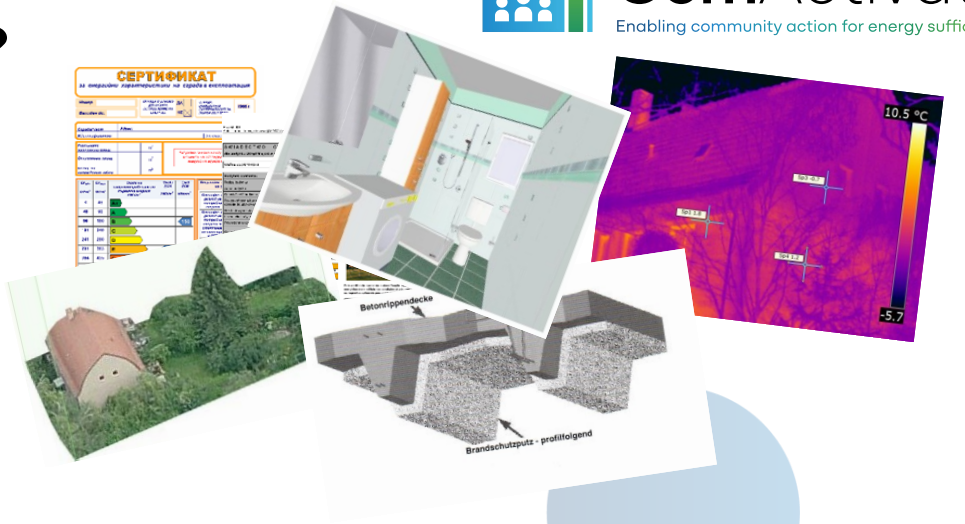
- it is a tool for energy auditors
- it needs to be adapted to specific Member State requirements.



iBRoad Logbook – why?

1. A lot of information about the buildings already exist (EPC data, energy audit) – but where?

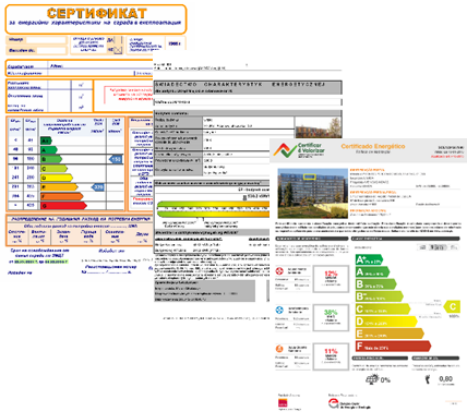
2. Most renovations are stepwise and refer to a long period of time. How can they be remembered?



iBRoad Logbook – why?

3

Simple presentation of the efficiency of the individual building and its components



4

Simple forward planning for homeowners

What is the iBRoad Logbook?

iBRoad Logbook:
digital repository for all building related information

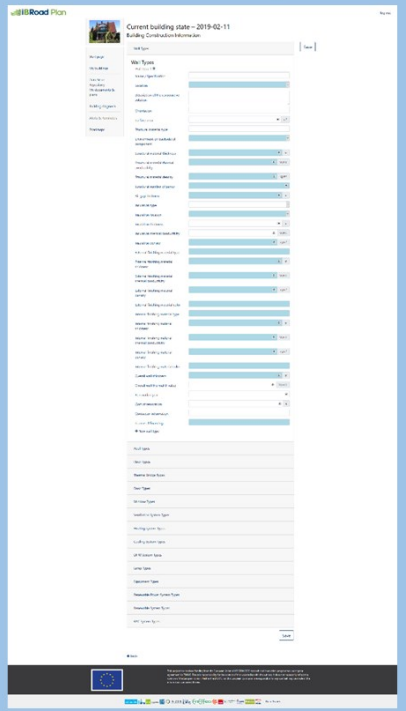
Features:

- Save complete data set of each builing state
- Track all changes to the building
- Connection to the iBRoad Roadmap

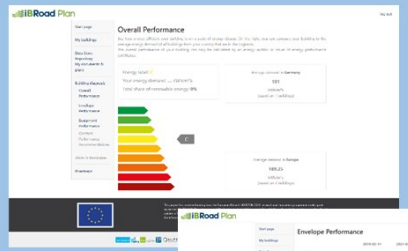
iBRoad Logbook

ComActivate
Enabling community action for energy sufficiency

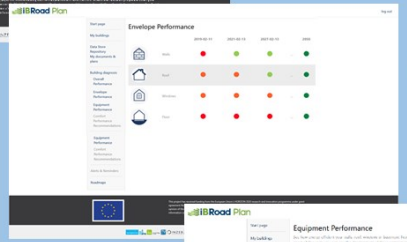
Data storage

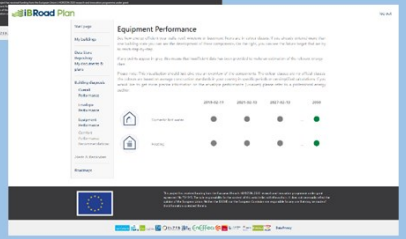


Building performance



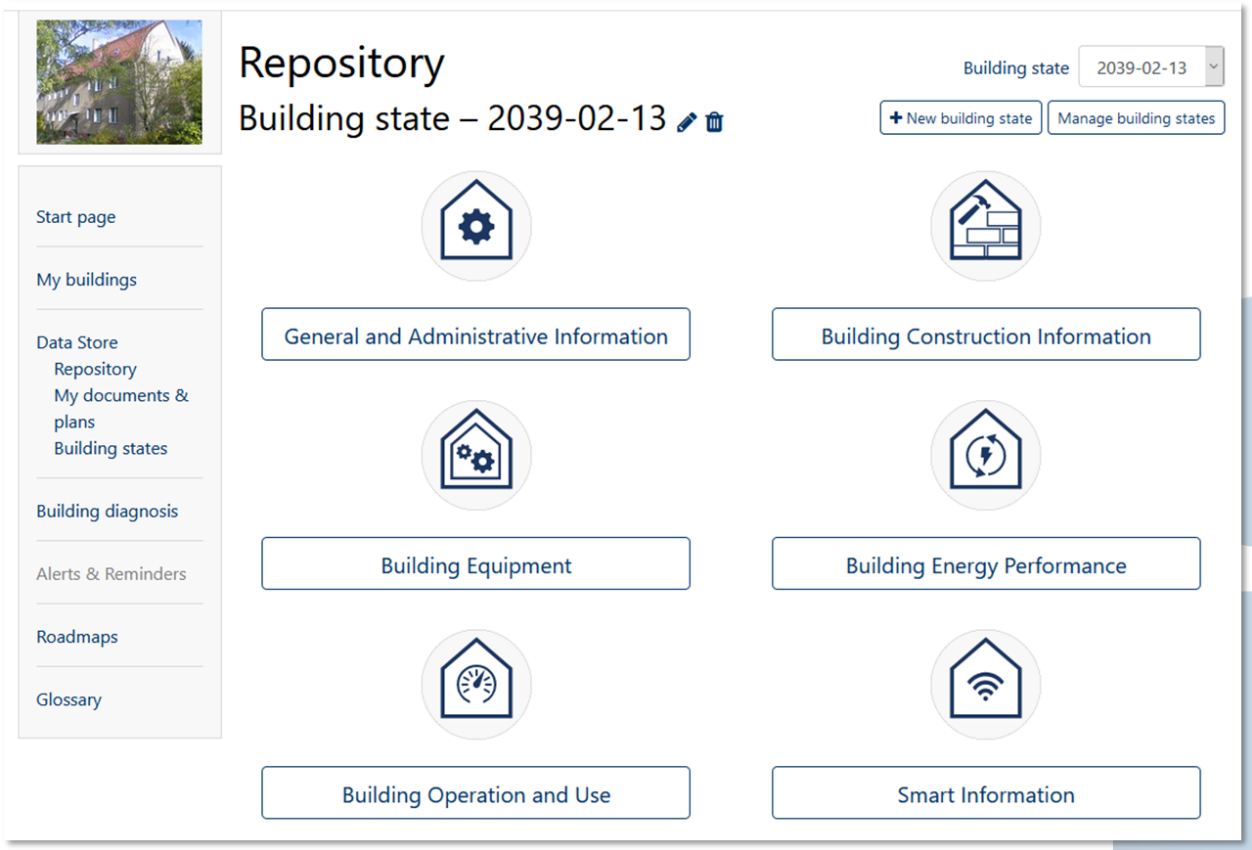
Envelop performance





Equipment performance

iBRoad Logbook



iBRoad Logbook

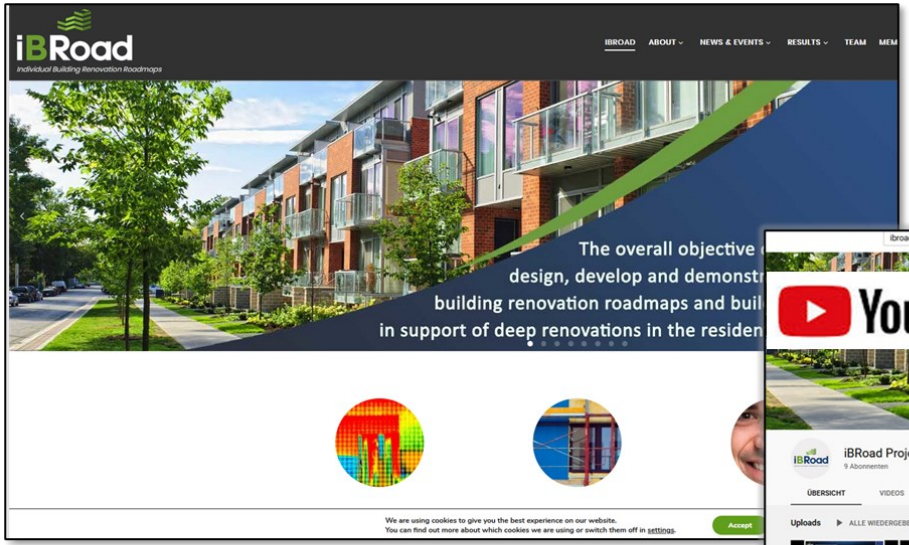
ComActivate
Enabling community action for energy sufficiency

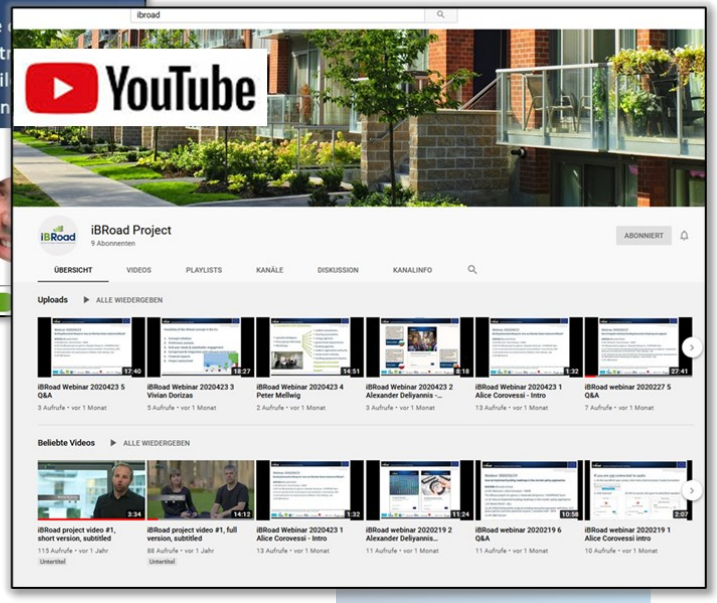
Store data about the present building state

log all changes in additional building states and visualise the development

ComActivate
Enabling community action for energy sufficiency

Find more information on iBRoad





https://ibroad-project.eu/

ComActivate
Enabling community action for energy sufficiency

Content

iBRoad

iBRoad2EPC

Co-funded by the European Union

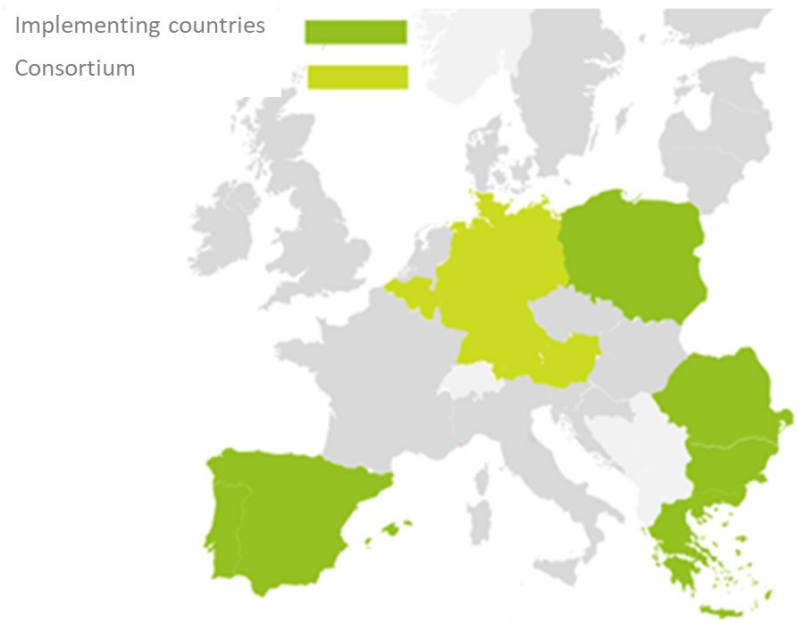
Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor CINEA can be held responsible for them.

iBRoad2EPC consortium

12 partners from 9 countries

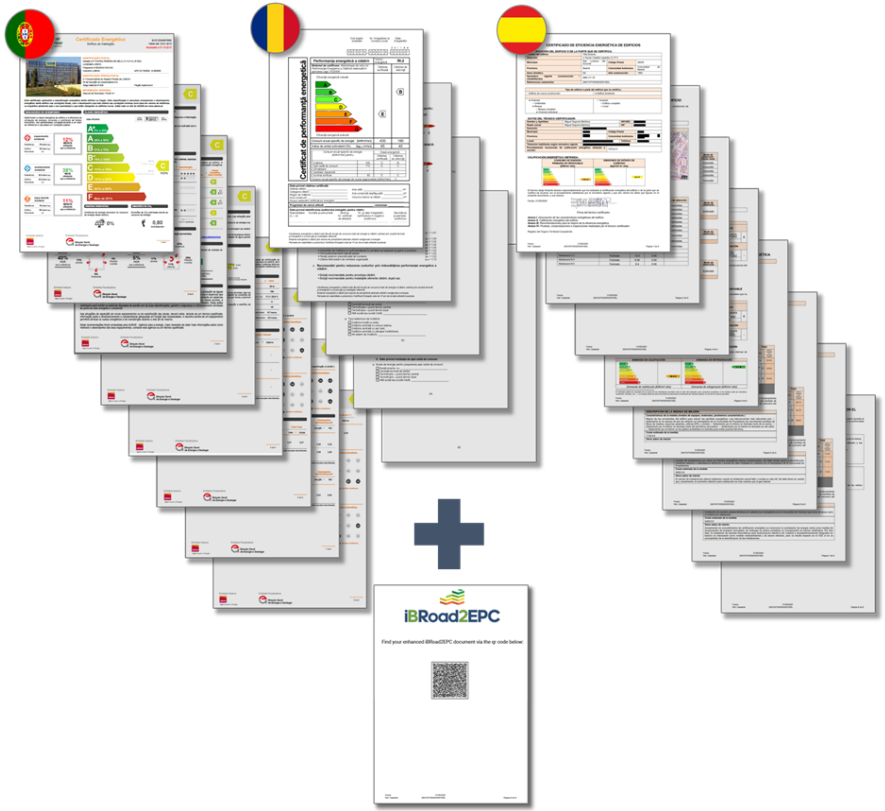
ComActivate
Enabling community action for energy sufficiency

European Commission
Horizon 2020
European Union funding
for Research & Innovation



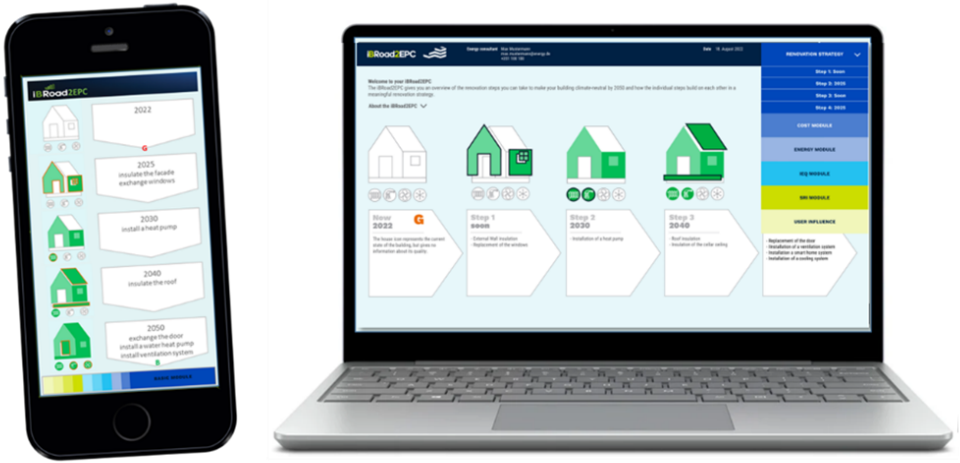
Project duration
from September 2021
to August 2024

What is iBRoad2EPC?



- iBRoad2EPC comes as an **extra page** to the regular EPC with an individual URL and QR-code.

What is iBRoad2EPC?



- iBRoad2EPC is hosted online and thus can be adapted dynamically.
- iBRoad2EPC is an individual **energy consultation** for building owners, issued by trained building professionals.
- iBRoad2EPC outlines an initial **renovation strategy** on how a building can become climate neutral in the long term.

Overview page

ComActivate
Enabling community action for energy sufficiency

Present building state
according to EPC

Step 1
Which renovation measures are pending?

Renovation steps
Support to meet all future requirements

Target state
Climate neutral building

House icons
Represent the quality of the envelop

Technology icons
Represent the quality of the technical equipment

Timing of renovation steps
According to climate targets

Brief description
of the renovation measures contained in the step

Detail page

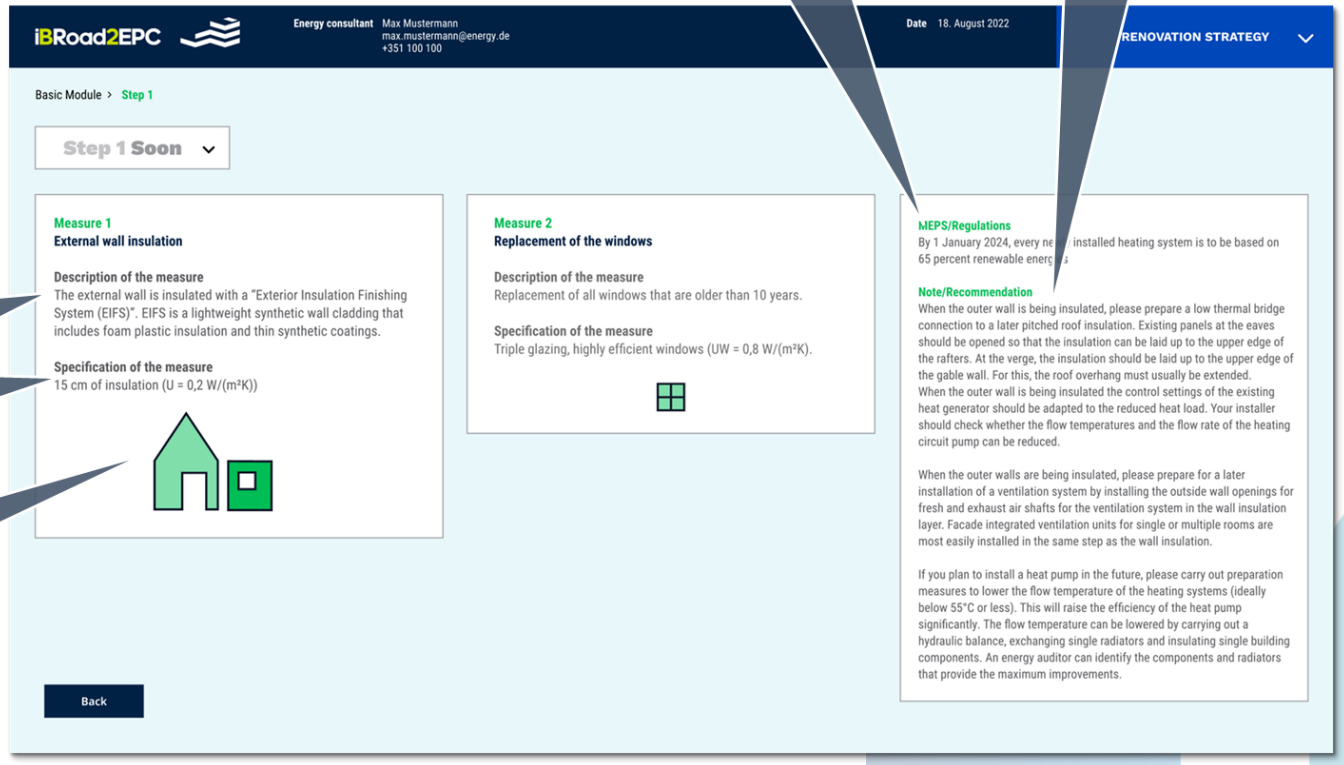
Future Requirements
Information about content and timing

Preparation for later renovation steps
reach deep renovation and avoid lock-in

Description of the measures
What should be renovated?

Specification of the measures
Renovation depth according to NBRP

Icon
same as in the overview for easy orientation



Detail page

ComActivate
Enabling community action for energy sufficiency

what?	Based on the on-site visit and together with the building owner, the issuer decides which building components or technical building equipment need to be renovated or renewed.
when?	Each implementing country defines the time steps so that they are aligned with relevant dates and intermediate targets in the national building strategy. The issuers decide which building component is to be renovated by which time step.
how?	Technical specifications of the renovation measures are automatically derived from the national building strategy (NECP, LTRS, NBRP). Issuers may override them if necessary.
what to beware of?	Building owners need information about legal obligations that their buildings will have to meet in the future. They are automatically displayed for each time step.
what to pay attention to?	iBRoad2EPC automatically fills in text blocks with technical tips and hints for a seamless connection of all renovation measures even if carried out at different times.

Modular enhancement

ComActivate
Enabling community action for energy sufficiency

Implementing countries decide where they place iBRoad2EPC between the EPC and the Renovation Passport

EPC

iBRoad2EPC

Renovation Passport

Effort:

2 - 4 hours — 1,5 – 2 days

Price:

50 – 250 Euro — 1000 – 3000 Euro

Coverage:

5 – 15% of the building stock — obligatory — voluntary — several thousand buildings

Modular enhancement

ComActivate
Enabling community action for energy sufficiency

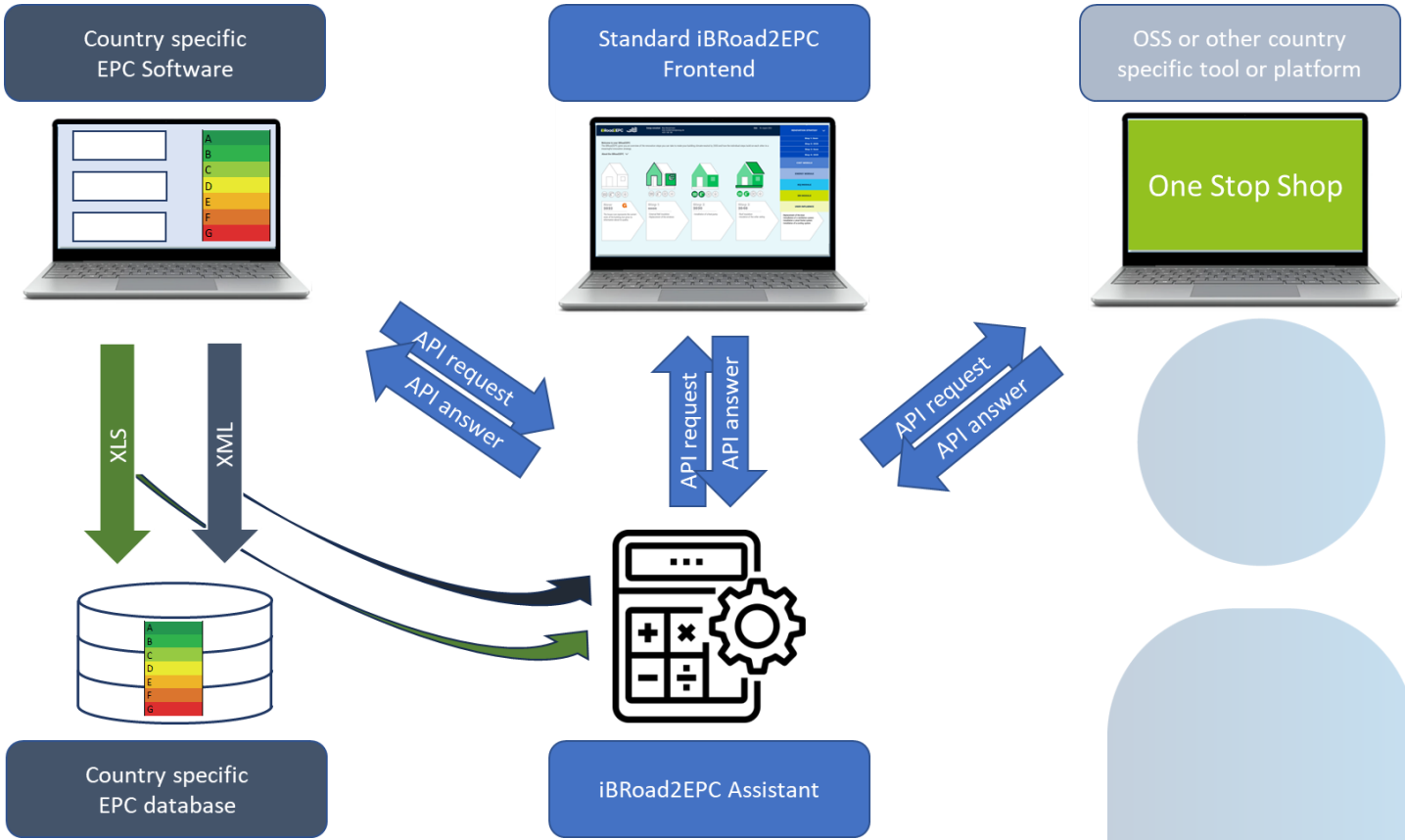
iBRoad2EPC can be extended flexibly with additional modules

- Energy demand, cost and GHG emissions
- Investment cost
- Indoor environment quality (IEQ)
- Smart readiness indicator (SRI)

Implementing countries decide which modules to include.

Adaptability to countries' requirements
Connectivity to existing tools

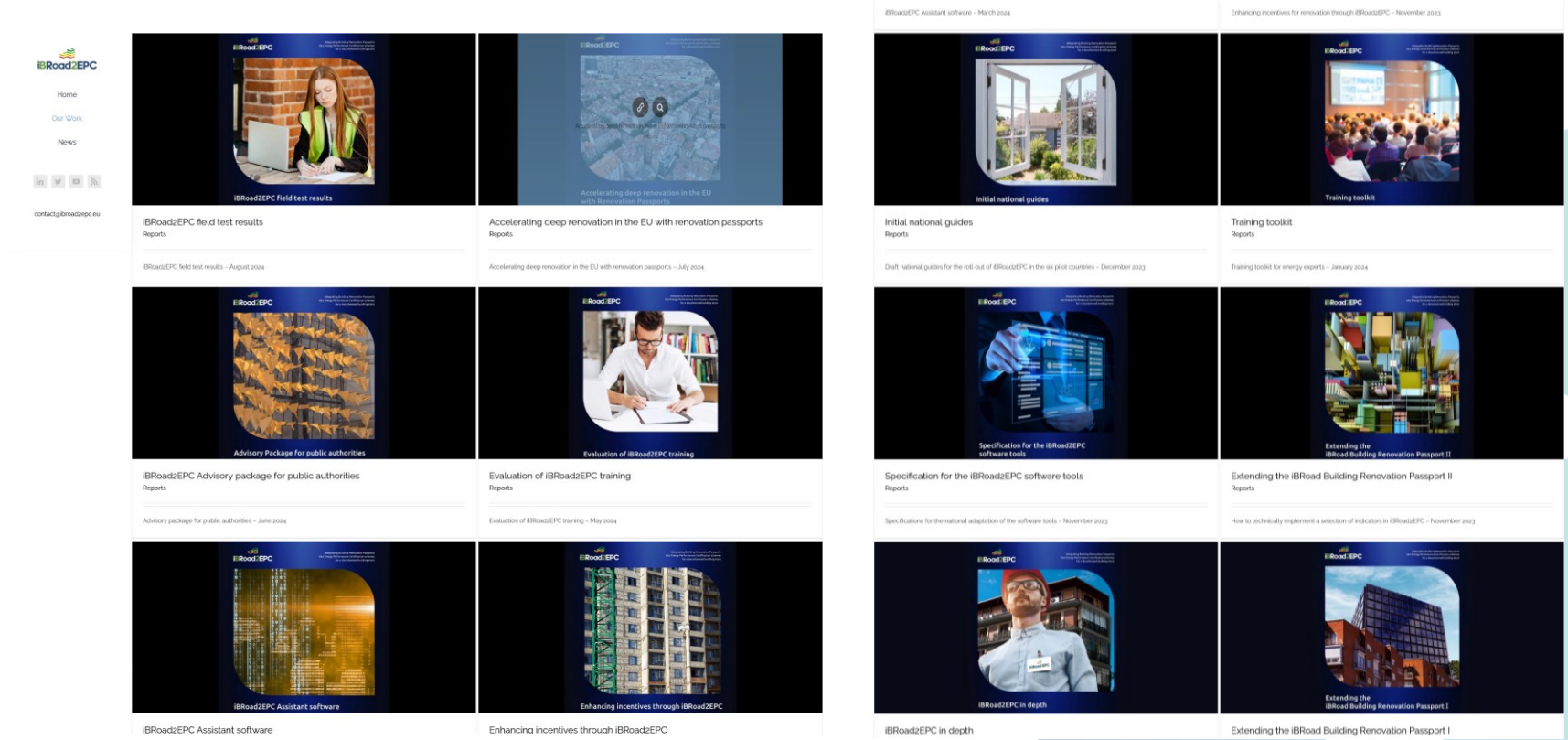
ComActivate
Enabling community action for energy sufficiency



Modular enhancement

ComActivate
Enabling community action for energy sufficiency

For more information, please visit **www.ibroad2epc.eu**



Mandatory content of a Renovation Passport

ComActivate
Enabling community action for energy sufficiency

- Current energy performance of the building ✓
- Graphical representation of the renovation passport ✓
- Information on relevant national requirements ✓
- Explanation of the optimal renovation step sequencing ✓
- Information on each renovation step ✓
- Information about a potential connection to district heating or cooling ✓
- Share of generation and consumption of renewable energy after the renovation
- General information on improvement options for various other aspects of a green building ✓

Optional content of a Renovation Passport

ComActivate
Enabling community action for energy sufficiency

- Indicative timing of renovation steps ✓
- Details for each renovation step, e.g. estimated cost, construction time, in-depth technology descripti ✓
- More independent modules, e.g. a list of relevant architects and craftsmen, smart readiness improver ✓
- Information about accessing the digital version of the RP ✓
- Already carried out major renovations of the building or the envelope ✓
- Information on seismic safety
- Additional information such as adaptibility of spaces or planned renovations

ComActivate
Enabling community action for energy sufficiency

Thank you for your attention

iBRoad

Peter Mellwig

iBRoad2EPC

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor CINEA can be held responsible for them.