Long-term planning and digitalisation as key enablers for successful energy renovations

Tuesday, September 20, 2022
9:00 - 10:30 CET
Online
Introduction

Clémence Arto
Autodesk – EuroACE Member
The European Alliance of Companies for Energy Efficiency in Buildings

- Formed in 1998 by Europe’s leading companies involved with the manufacture, distribution and installation of energy saving goods and services
- A business association working together with the European institutions to help Europe move towards an efficient use of energy in buildings (new and renovated)
Our members provide the products, equipment, and services that go together to provide energy efficient buildings for the peoples of the EU.
The Energy Performance of Buildings Directive (EPBD) is a huge opportunity to deliver and accelerate on energy efficiency of buildings in Europe.
Video Statement

MEP Séan Kelly
EPP, Ireland
EPBD Shadow Rapporteur
Digitalisation and data in the service of energy renovation

Daniela Bachner
Project Adviser LIFE Energy, CINEA
Long-term planning & digitalisation as key enablers for successful energy renovation

Brussels, 20 September 2022
Daniela Bachner, Project Adviser,
CINEA, LIFE-CET
Revision proposal of the EPBD (Dec. 2021)

➢ Enhanced long-term renovation strategies, to be renamed national Building Renovation Plans

➢ Application of minimum energy performance standards to existing buildings and existing building units;

➢ Increased reliability, quality and digitalisation of Energy Performance Certificates; with energy performance classes to be based on common criteria

➢ A definition of deep renovation and the introduction of building renovation passports

➢ New Article on Data Exchange between MS (Article 14)
Building data???

• What?
• Why?
• How?
What is building data good for?

- **Building Owners & Operators**
  - Monitoring, M&V
  - Benchmarking
  - Decision support tool
  - Recommendations

- **Financial Institutions**
  - Evaluation and monitoring of projects
  - Benchmarking
  - Reporting basis: ESG, Taxonomy

- **Policy makers**
  - Performance tracking
  - Achievement of targets
  - Data base for policy and programme development

Extract from presentation of EN-TRACK project (885395) by Stoyan Danov
EU Building Stock Observatory

- Energy performance of buildings across Europe
- 250 indicators, 74k data points
- All EU MS
- Various data sources
- Revamp in 2023 (previous version 2016 – 2022)
BuiltHub project

• Enhance data to inform building related policies and decision making

• Development of a data collection roadmap and data hub (web-platform)

• Engage stakeholders to build a data-exchanging community
LIFE CET Call 2022: Supporting the decarbonisation of buildings and H&C

➢ Towards a zero-emission building stock: strengthening the enabling framework for deep renovation (LIFE-2022-CET-DEEPRENO)

➢ Energy performance and Smart Readiness of buildings – making the instruments work (LIFE-2022-CET-BUILDPERFORM)

➢ Accelerating deployment and affordability of heat pumps through collective purchase actions and procurement (LIFE-2022-CET-HEATPUMPS)

➢ Integration of low-grade renewable energy or waste heat in high temperature district heating (LIFE-2022-CET-DH)
Thank you
Prioréno: A French Public low-tech for good dedicated to facilitating local decision of renovation

Hakim Lahlou
Innovation Director,
Banque des Territoires, Caisse des Dépôts Group
PRIORENO
A FRENCH PUBLIC LOW-TECH FOR GOOD
DEDICATED TO FACILITATING LOCAL DECISION OF RENOVATION

Why?
Who?
How does it work?
For which results?
Next steps
Why

- Climate urgency and Energy independence
- Lack of knowledge of the building stock
- Engineering expertise cost
- Brakes to local decision
Who?

French State
How does it work?

- Data device
- 2000 Gb of geographical datas
- Artificial Intelligence
- Deep learning
For what results?

- Automation
- Real-time data
- 100% free

Robust results: ex of Grasse city: exact same top 10 schools than a 120k€ / 10 months engineering study cofinanced.
Next steps

Today, after 2 months: 1600 candidate cities, 8M of m², 4,500 buildings

In October: open to all!

Integration of new energy supplies to cover 100% of France (today: 95%)

Launch this month of the studies about the Futur Prioréno dedicated to French social housing!

Public Policy evaluation
Conclusion: Will Prioreno help elected officials to make their renovation decision?
The Woningpas digital building passport supporting the renovation of homes in Flanders

Roel Vermeiren
Renovation Strategy Consultant, Flemish Energy and Climate Agency (LIFE project BE REEL!)
Long-term planning and digitalisation as key enablers for successful energy renovations

The Flemish Building passport

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Overview

- Why a building passport?
- Challenge
- Roadmap
- A look at woningpas
Why?

Minimalize administrative burdens during life events: building, renovation, buying for citizens.

“Integration of certificates”

Give owner & buyer a view and advice on relevant building aspects.

“LTRS: upgrade renovation grade and dwelling quality”

Co-creation: Flemish Energy and Climate Agency, Department Environment, Housing Department, Waste Department
Challenge?

• A free digital passport, automatically compiled for the home owner who can share it with others
• Information about different topics in one platform
  ✓ User Experience - design
• Sharing government data from various sources
• Not creating an overall database (GDPR issues!)
  ✓ Extracting information from sources at the time of login
Roadmap

- 2018: launch woningpas Light
- 2019: medium-version
- 2020-2021: recent development
- 2022-2023: plans
Roadmap

- General building information
- Energy
- Isolation
- Installations
- Solar potential
- Information on the soil
- Attestations
- Maps of the surroundings

2018 - 2019

- New dashboard
- Mobile friendly
- Mobiscore

Juni 2019

“light”

November 2019

- Building permits
- Feedback

“medium”
January 2020
- Grants
- Label on E-level

April 2020
- Soil certificates
- Sharing with third persons

November 2020
- Check your energy-label-tool

December 2020
- Adding renovation works
- Premiums for renovation works Fluvius

Fluvius
February 2021
• Check-tool dwelling quality
• Data dwelling quality

March 2021
• Inspection water installation
• Sewers

June 2021
• Digital safe (plans, documents, ...)

2021

New partners
January 2022
- Woningpas for companies

March 2022
- Energy-meters and consumption
- Solar panels
- Water
- Parcels without dwelling

June 2022
- Woningpas public sharing
- Updated advice EPC

September 2022
- Attestation on asbestos
- Notifications
- Adding all renovation works
- Green-blue-label

December 2022 - 2023
- Digital inspection of gas
- Flood sensitivity scores
- Durable heating (heat pumps, heating nets, ...)
- Inspections of central heating systems
A look at woningpas
A look at woningpas

1. **Relevant data & advice**
   - ✓ Known by the government
   - ✓ Dwelling/parcel/surroundings

**Sensibilisation**

**Long term paths**

Free digital passport of the house
A look at woningpas

2. Relevant certificates and grants

Overview
Rights and obligations
Digital safe
A look at woningpas

3. Maps of the surroundings
Explore the demo

https://woningpas.vlaanderen.be/c/portal/profile/preview_user

- Credentials:
  - user: demo
  - pass: WqB5iwDdcVjYT!ch
QUESTIONS?
Building Renovation Passports
The iBRoad & iBRoad2EPC Projects

Alice Corovessi
Managing Director,
INZEB (iBRoad / iBRoad2EPC projects)
BUILDING RENOVATIONS PASSPORTS
The iBRoad & iBRoad2EPC Projects

Alice Corovessi, INZEB

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Building Renovation Passports (BRPs) - Getting Familiar

BRPs and EPBD

The iBRoad Project heritage

The iBRoad2EPC project - The evolution of iBRoad
A 'Building Renovation Passport - BRP’ is a document that provides a tailored roadmap for the renovation of a specific building in several steps that will significantly improve its energy performance.

A BRP outlines a long-term (up to 15 or 20 years) step-by-step renovation roadmap for a specific Building. The document results from an on-site energy audit while meeting specific quality criteria and indicators.

The renovation roadmap can be combined with a repository of building information - a digital logbook which may include info as building plans, maintenance processes, various renovation works, energy consumption and production, EPC data, etc.
Building Renovation Passports (BRPs) - Getting Familiar

**INPUT**

- Various building information
- Data for implemented renovations and conversions
- Building plans
- EPC data
- Energy consumption and production
- Comfort and health measurements
- Climate information
- External environment facts and data
- ...
- ...

**OUTPUT**

- Digital logbook including building’s information
- Tailored renovation roadmap
- Data for the supply chain
- Information for available funding sources and incentives
- Information about the benefits of energy efficiency measures implementation
- Information about national regulatory policies
- ...
- ...

Building Renovation Passports
A dynamic system

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Session: Long-term planning and digitalisation as key enablers for successful energy renovations | Date: Tuesday 20 Sep. 2022
BENEFITS FOR VARIOUS SECTORS

**National Governments**
BRP enable higher volumes of retrofit projects, supporting the national targets set for climate, energy efficiency and fuel poverty mitigation.

**Technical Professionals**
BRP platforms can create commercial opportunities for energy and retrofit professionals. BRPs provide baseline information for the buildings, thus saving time and informing future works.

**Real Estate Agents**
Understand the correlation between property values and energy efficient and sustainable buildings. BRPs can improve customer engagement and can ‘advise’ on how to achieve sales with high property value.

**Financial Institutions**
New opportunities for customer Engagement and launch of financial products tailored to the needs of individual properties.

**Valuers**
BRPs can identify and mitigate risks at asset and portfolio levels.
Revision of the EPBD 2021

Directions and Aims

- Improve the energy performance of buildings and reduce emissions in the building sector towards 2030
- Setting long term vision towards climate neutrality in 2050 (zero emission building stock)

Novelties

- EPC updates and deep renovation definition
- Inclusion of building renovation passports (BRPs)
- Inclusion of minimum energy performance standards (MEPS)
- Whole-life carbon (WLC) considerations
A plan can help

Deep and Qualitative Renovation

Holistic Renovation Process

Building Renovation Passport / Roadmap

Source: Energiessprong

Source: iBRoad

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The iBRoad Project heritage

So can a reference


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Guiding Principles for establishing the Roadmap

**Best-Possible-Principle**
Propose the measures with the highest possible energy efficiency

**Individual Renovation Context**
Consider the wishes, needs, financial situation of the homeowner and the inhabitants, and the circumstances of the building

**Long-Term Perspective**
Help the homeowner to understand the importance of having a long-term renovation strategy

**Timing and Sequencing**
Demonstrate the homeowner that a step-by-step renovation does have several advantages

**Attractive and Motivating**
The Roadmap should be attractive and easily understandable for homeowners so that they can be motivated to take action

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The results

Current building state

Roadmap overview

Detailed Roadmap

Detailed renovation step

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Detailed Roadmap

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The results
The iBRoad Project heritage

Adaptation for countries

Country-specific adoption of elements within the national version of iBRoad
Bulgaria, Poland, Portugal, Belgium/Flanders, Germany

IFU – Institut für Energie- und Umweltforschung Heidelberg
February 2019

www.ibroad-project.eu

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement Nº 754645

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Training material

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

iBRoad training toolkit
Guidance for auditors in the iBRoad pilot countries

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Training material and training sessions

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Testing results

60% average improvement

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The iBRoad Project heritage

Potential for further replication and extension
The iBRoad2EPC project - The evolution of iBRoad

The future: iBRoad2EPC

The project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement N° 101033781

iBRoad2EPC project

Integrating Building Renovation Passports into Energy Performance Certification schemes for a decarbonised building stock
The iBRoad2EPC project - The evolution of iBRoad

The future: iBRoad2EPC

EPC

- Information on current energy performance (usually calculated energy performance)
- Energy auditor and on-site visit not always a prerequisite
- General recommendations (when available)
- Owner’s needs and living situation not relevant
- Applicable to all building types
- Static document
- Mandatory when building is constructed, sold or rented

Next generation EPC

- Information on current energy performance (incl. measured) and future energy performance; IEQ, comfort, SRI, etc.
- Uses iBRoad elements to expand EPCs
- On-site visit by energy auditor required
- Customised recommendations for deep renovation & information to avoid lock-in effect
- Renovation recommendations aligned with long-term energy saving target
- Owner’s needs and living situation considered
- Tested for single-family, multi-family and public buildings
- Can evolve into Building Renovation Passport (Logbook and Roadmap)
- Mandatory when building is constructed, sold or rented

Building Renovation Passport

- Detailed information on energy performance (calculated energy performance); comfort and additional specifications provided; repository of building information (logbook)
- On-site visit by energy auditor required
- Customised renovation plan to achieve deep renovation
- Step-by-step renovation measures to avoid lock-in effect (technical description and suggested timing)
- Renovation recommendations aligned with long-term energy saving target
- Owner’s needs, living conditions and wishes considered
- Tested for single-family buildings and adaptable to other typologies
- Dynamic document
- Voluntary tool
- Can be used to generate EPC

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The iBRoad2EPC project - The evolution of iBRoad

The future: iBRoad2EPC

- Assess potential and practicability of merging EPC with Building Renovation
- Adapt the iBRoad concept to the current and future EPC needs
- Test and evaluate iBRoad2EPC in six countries
- Facilitate further exploitation

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The future: iBRoad2EPC

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The future: iBRoad2EPC

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The future: iBRoad2EPC

iBRoad

Building Renovation Passport

Innovative solution

On-site visit and energy audit
Performance indicator to measure the progress
Guidance and recommendations for building owner
Simplified Information

iBRoad2EPC

Building Renovation Passport

Innovative solution

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www.ibroad2epc.eu
Thank you!

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Q&A Session
Conclusions

Clémence Arto
Autodesk – EuroACE Member
Thank you!