

Formación presencial

Métodos avanzados y herramientas para una rehabilitación energética de edificios desde una perspectiva holística

La Salle-Ramon Llull University
ICAEN
CYPE

Barcelona, 23 y 30 de mayo de 2024



TIMEPAC Academy

The TIMEPAC Academy provides training, and resources tailored specifically for professionals engaged in building assessment and certification. Our platform is dedicated to equipping individuals with the essential knowledge and skills needed to transition from one-time certifications to comprehensive assessments of building performance throughout its entire lifespan

Watch the recordings and download the presentations from the six webinars

In-class training will be conducted during April and May. Check timetable on this website

Training activities

<https://academy.timepac.eu>

TIMEPAC Academy

The TIMEPAC Academy provides training, and resources tailored specifically for professionals engaged in building assessment and certification. Our platform is dedicated to equipping individuals with the essential knowledge and skills needed to transition from one-time certifications to comprehensive assessments of building performance throughout its entire lifespan

Watch the recordings and download the presentations from the six webinars
In-class training will be conducted during April and May. Check timetable on this website

Training activities

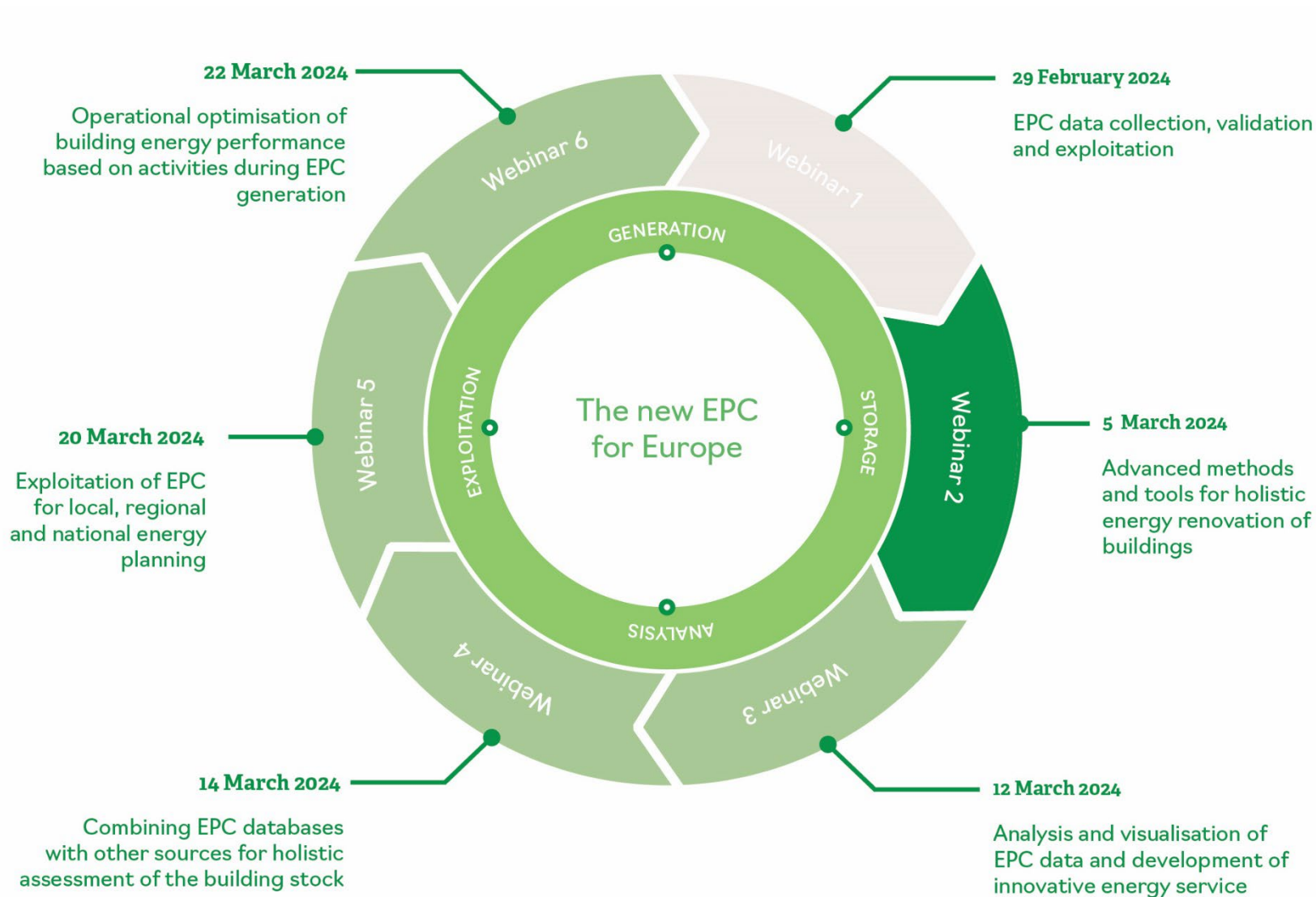
Coming

<p>04/05 Webinars Series</p> <p>Combining EPC databases with other sources for holistic assessment of the building.</p> <p>The recently updated version of the Energy Performance of Buildings Directive (EPBD) requires a holistic approach to building energy performance assessment, including the use of data from various sources such as BIM, GIS, and other public databases.</p> <p>Speakers: Luca Neri, ENEA</p> <p>3 sessions</p> <p>Webinars, energy auditors, architects, energy managers and public authorities.</p> <p>View more >></p>	<p>04/05 Webinars Series</p> <p>EPC data collection, validation and exploitation</p> <p>Energy Performance Certificates (EPC) are a key tool for the assessment of building energy performance. However, the quality of the data collected is crucial for the accuracy of the assessment.</p> <p>Speakers: Luca Neri, ENEA</p> <p>2 sessions</p> <p>Webinars, energy auditors, architects, energy managers and public authorities.</p> <p>View more >></p>	<p>04/05 Webinars Series</p> <p>Advanced methods and tools for energy simulation of buildings from a holistic view</p> <p>The use of advanced simulation tools can significantly improve the accuracy of energy performance assessments. This webinar will explore the latest developments in this field.</p> <p>Speakers: ENEA, ENEA, Luca Neri</p> <p>2 sessions</p> <p>Webinars, energy auditors, architects, energy managers and public authorities.</p> <p>View more >></p>
<p>04/05 Webinars Series</p> <p>Operational optimisation of building energy performance based on real-time data</p> <p>The main goal of the energy performance assessment of a building is to provide a clear picture of the energy consumption and to identify the most effective measures to improve it.</p> <p>Speakers: ENEA</p> <p>2 sessions</p> <p>Webinars, energy auditors, architects, energy managers and public authorities.</p> <p>View more >></p>	<p>04/05 Webinars Series</p> <p>Exploitation of EPC for local, regional and national energy planning</p> <p>The Energy Performance Certificate (EPC) database is a valuable tool for energy planning at various scales, from local to national.</p> <p>Speakers: ENEA</p> <p>2 sessions</p> <p>Webinars, energy auditors, architects, energy managers and public authorities.</p> <p>View more >></p>	

Closed

<p>04/05 Webinars Series</p> <p>Webinar 1. EPC data collection, validation and exploitation</p> <p>The recently updated version of the Energy Performance of Buildings Directive (EPBD) requires a holistic approach to building energy performance assessment, including the use of data from various sources such as BIM, GIS, and other public databases.</p> <p>Speakers: ENEA</p> <p>3 sessions</p> <p>Webinars, energy auditors, architects, energy managers and public authorities.</p> <p>View more >></p>	<p>04/05 Webinars Series</p> <p>Webinar 2. Advanced methods and tools for holistic energy renovation of buildings</p> <p>The use of advanced simulation tools can significantly improve the accuracy of energy performance assessments. This webinar will explore the latest developments in this field.</p> <p>Speakers: ENEA</p> <p>2 sessions</p> <p>Webinars, energy auditors, architects, energy managers and public authorities.</p> <p>View more >></p>	<p>04/05 Webinars Series</p> <p>Webinar 3. Analysis and exploitation of EPC data and development of innovation</p> <p>The use of advanced simulation tools can significantly improve the accuracy of energy performance assessments. This webinar will explore the latest developments in this field.</p> <p>Speakers: ENEA</p> <p>2 sessions</p> <p>Webinars, energy auditors, architects, energy managers and public authorities.</p> <p>View more >></p>
<p>04/05 Webinars Series</p> <p>Webinar 4. Combining EPC databases with other sources for holistic assessment of the building</p> <p>The recently updated version of the Energy Performance of Buildings Directive (EPBD) requires a holistic approach to building energy performance assessment, including the use of data from various sources such as BIM, GIS, and other public databases.</p> <p>Speakers: ENEA, ENEA</p> <p>3 sessions</p> <p>Webinars, energy auditors, architects, energy managers and public authorities.</p> <p>View more >></p>	<p>04/05 Webinars Series</p> <p>Webinar 5. Exploitation of EPC for local, regional and national energy planning</p> <p>The Energy Performance Certificate (EPC) database is a valuable tool for energy planning at various scales, from local to national.</p> <p>Speakers: ENEA</p> <p>2 sessions</p> <p>Webinars, energy auditors, architects, energy managers and public authorities.</p> <p>View more >></p>	<p>04/05 Webinars Series</p> <p>Webinar 6. Operational optimisation of building energy performance based on real-time data</p> <p>The main goal of the energy performance assessment of a building is to provide a clear picture of the energy consumption and to identify the most effective measures to improve it.</p> <p>Speakers: ENEA</p> <p>2 sessions</p> <p>Webinars, energy auditors, architects, energy managers and public authorities.</p> <p>View more >></p>

Webinars series



Objetivos del curso

- Introducción a los métodos y herramientas de evaluación y renovación de la eficiencia de los edificios y su renovación, combinando tecnologías BIM con herramientas de certificación y simulación.
- Aplicación de las guías TIMEPAC para la integración de BIM y EPC
- Uso del BIM en el proceso de renovación del edificio, y subsiguiente actualización de los certificados
- Aplicación práctica a un edificio administrativo y de viviendas

Lecturers

Partners involved



La Salle-URL
Leandro Madrazo



La Salle-URL
Álvaro Sicilia



La Salle-URL
Adirane Calvo



Catalan Institute for
Energy
Ainhoa Mata



CYPE
**Benjamín
González**



Catalan Institute for
Energy
Marta Chàfer

Jueves, 23 de mayo de 2024, de 9:30 a 14:00

- 9:30 – 9:40 **Introducción a TIMEPAC**
Leandro Madrazo (La Salle-URL)
- 9:40 – 10:00 **Retos de la nueva Directiva sobre el eficiencia energética de edificios**
Ainhoa Mata (ICAEN)
- 10:00 – 10:45 **Generación de EPC mejorados con datos BIM**
Adirane Calvo, Álvaro Sicilia (La Salle-URL)
Benjamín González (CYPE)
- 10:45-11:15 **Pausa café**
- 11:15 – 13:45 **Creación de un modelo BIM para la generación del certificado: un edificio municipal**
Adirane Calvo, Álvaro Sicilia (La Salle-URL)
Benjamín González (CYPE)
- 13:45 – 14:00 **Resumen de la jornada**

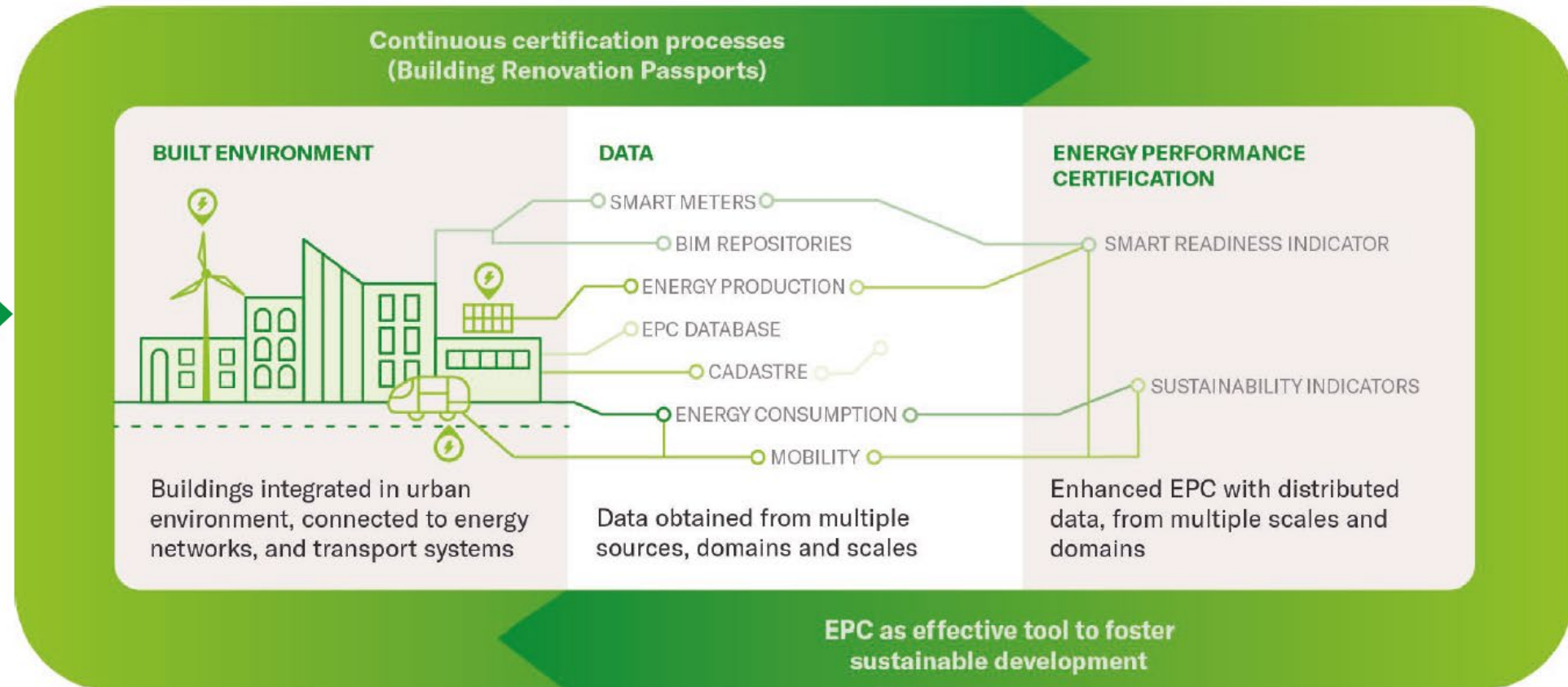
Jueves, 30 de mayo de 2024, de 9:30 a 14:00

- 9:30 – 10:00 **Revisión de los ejercicios**
Benjamín González (CYPE)
- 10:00 – 10:20 **Certificación a lo largo del proceso de renovación**
Ainhoa Mata (ICAEN)
- 10:20- 10:45 **Pasaporte de renovación del edificio**
Adirane Calvo (La Salle, URL)
- 10:45 – 11:15 **Pausa café**
- 11:15 – 13:50 **Generación de un modelo BIM para la renovación
paso a paso de un edificio de viviendas**
Benjamín González (CYPE), Marta Chàfer (ICAEN)
- 13:50 – 14:00 **Clausura**

TIMEPAC A holistic approach to EPC (2019-)

From one-off certification of an isolated building with a focus on energy performance....

...to a comprehensive assessment of the building performance over its lifetime



EPC seamless data flow

User-friendly environments to access EPC databases, interlinked to other data repositories (BIM, cadastre)

Automatic storage of the certificate in BIM and EPC databases

Analysis of EPC repositories to identify potential areas for building renovation

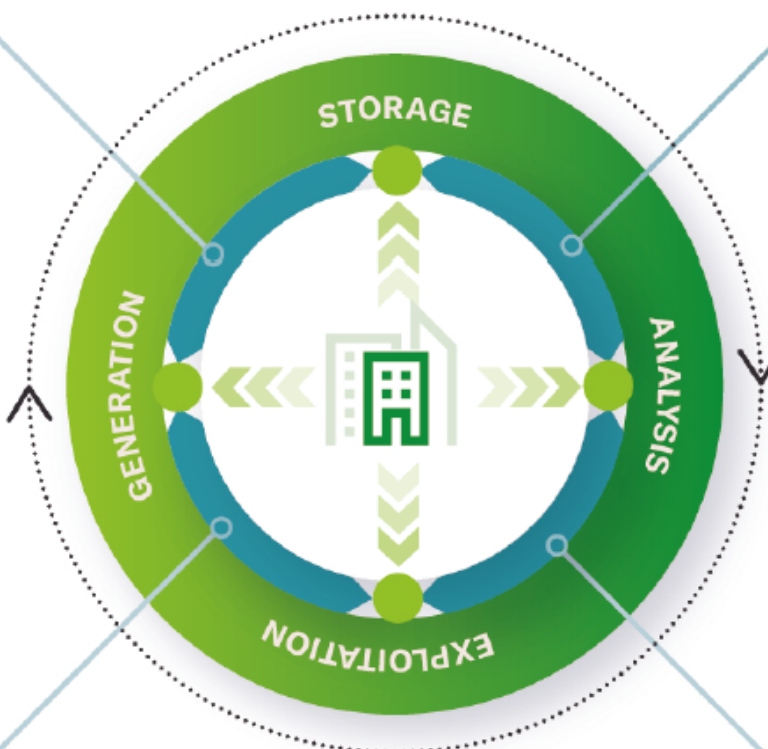
Enhanced EPC schemes with SRI and sustainability indicators, generated from BIM models

Procedures and tools for large scale statistical analysis of EPC databases

BIM models used to generate EPC to be used in future renovation projects

Identifying customers for building components and equipment in areas with a potential for renovation

New services for professional certifiers, ESCOs, consultants, building companies, to exploit EPC data in combination with other data sources



EPBD 2024 recast

(41) “Member States should encourage the use of **digital technologies for analysis, simulation and management of buildings**, including with regard to deep renovations”.

(43a) “A **digital building twin** is an interactive and dynamic simulation that reflects the real-time status and behaviour of a physical building. By incorporating real-time data from sensors, smart meters and other sources, a digital building twin provides a holistic view of the building's performance, including **energy consumption, temperature, humidity, occupancy levels**, and more and can be used to monitor and manage the building's energy consumption. Where a digital building twin is available, it should be taken into account, in particular for **the smart readiness indicator.**”

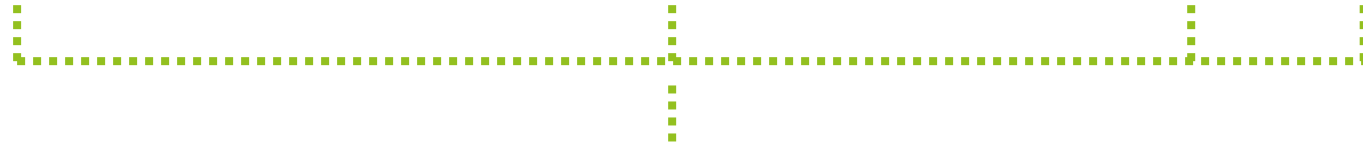
(50) “The monitoring of the building stock is facilitated by the availability of **data collected by digital tools**, thereby reducing administrative costs.”

EPBD 2024 recast

(37) “**digital building logbook**’ means a **common repository for all relevant building data**, including data related to energy performance such as **energy performance certificates, renovation passports and smart readiness indicators**, as well as on the life-cycle GWP, which facilitates informed decision making and information sharing within the construction sector, among building owners and occupants, financial institutions and public bodies”

(6) “Member States shall strive to provide a dedicated **digital tool** for preparing and potentially updating the **renovation passport**. Member States may decide to develop a complementary tool allowing building owners and building managers to simulate a draft simplified renovation passport for the building and for them to update it once a renovation takes place or a building element is replaced.”

Digital logbook - Renovation passport - EPC - SRI



BIM

[building data model]

A new ecosystem for building assessment and certification

Not a certification scheme, but a framework (common language and set of indicators) to measure the environmental, social, and economic aspects of building sustainability

Level(s)

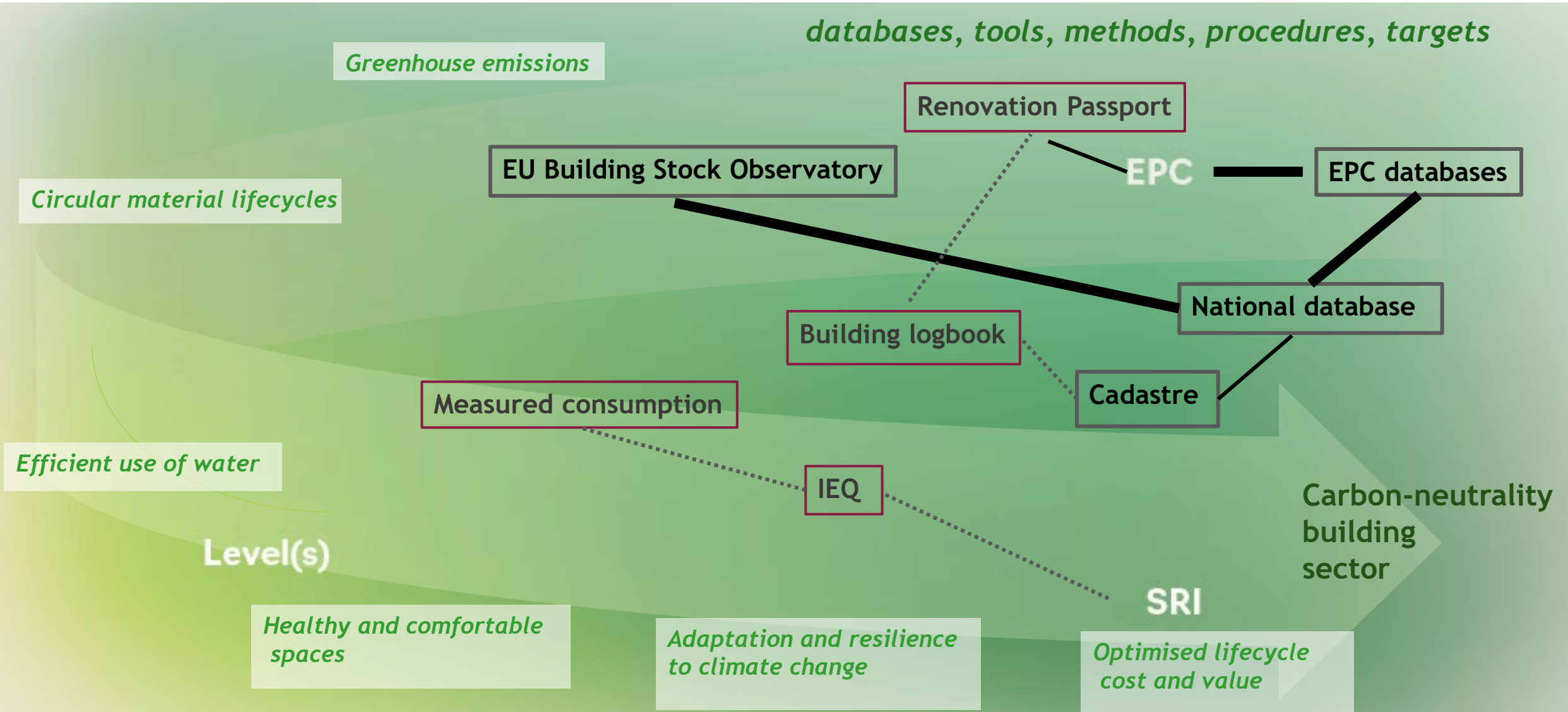
EPC

A certificate stating the energy efficiency based on primary energy use for heating, cooling, ventilation, domestic hot water and lighting

A certificate of the capabilities of the building or building unit to adapt its operation to the needs of the occupants and the grid, and to improve its energy efficiency and overall in-use performance.

SRI

A new ecosystem for building assessment and certification



Generating enhanced EPCs with BIM data

BIM can significantly enhance the efficiency, quality, and reliability of EPC generation, particularly **throughout the building renovation over time.**

Interoperability among different energy simulation and certification tools needs to be improved. Significant challenges were noted in exchanging non-geometric data, with many EPC software unable to read complete BIM models or specific components.

We need for further improvements in BIM and EPC software tools, the IFC standard, and user training and awareness.

Recommendations for software developers, policymakers, and industry stakeholders to help overcome existing barriers, particularly focusing on improving MEP crucial for creating accurate EPCs.

Guidelines to address current challenges in integrating BIM and EPC created.

Five BIM models per country - Austria, Croatia, Cyprus, Italy, Slovenia, and Spain - were generated and evaluated using the guidelines.

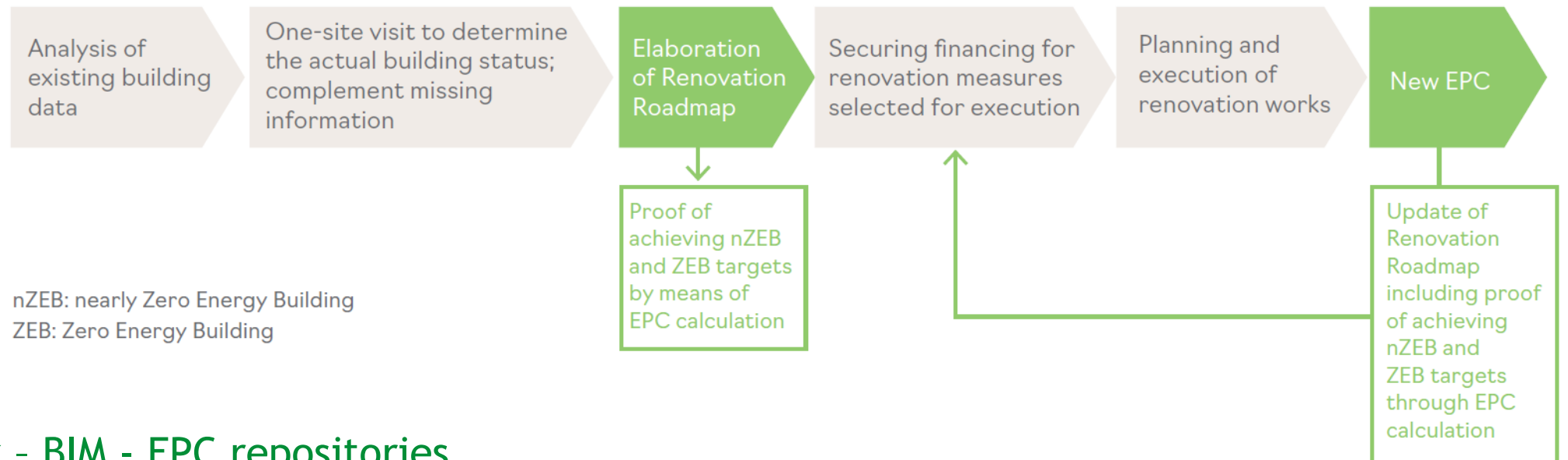


Creating building Renovation Passports from data repositories

We have developed renovation roadmaps that are tailored to specific buildings and represent the main element of the Renovation Passport, based on the software, databases and procedures available in each partner country.

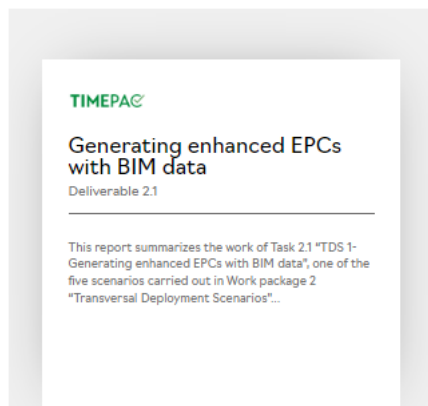
Strengths and weaknesses of renovation roadmaps were analysed with regard to:

- utilization of databases and software tools
- achieved building performance
- tracking of renovation measures implementation



Digital logbook - BIM - EPC repositories

Transversal Deployment Scenarios (reports)



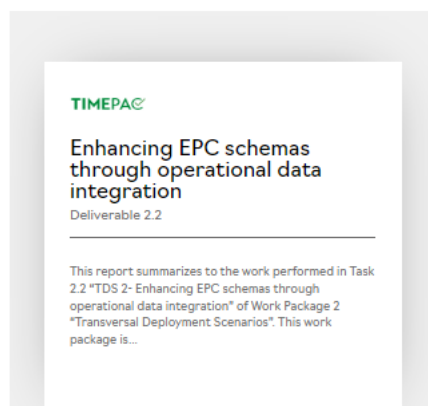
Generating enhanced EPCs with BIM data

Deliverable 2.1

📅 Published November 16, 2023

This report summarizes the work of Task 2.1 "TDS 1- Generating enhanced EPCs with BIM data", one of the five scenarios carried out in Work package 2 "Transversal Deployment Scenarios" (TDS). This work package is concerned with the creation of future scenarios with the aim...

[Read more >](#)



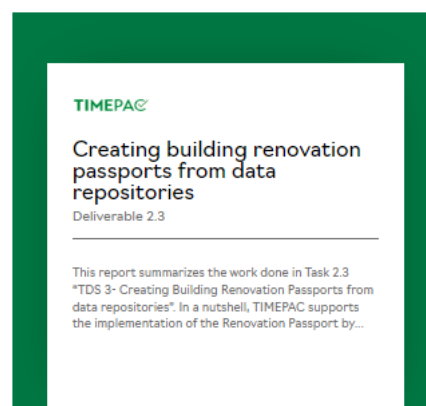
Enhancing EPC schemas through operational data integration

Deliverable 2.2

📅 Published November 16, 2023

This report summarizes to the work performed in Task 2.2 "TDS 2- Enhancing EPC schemas through operational data integration" of Work Package 2 "Transversal Deployment Scenarios". This work package is concerned with the creation of future scenarios with the aim of deploying and delivering new...

[Read more >](#)



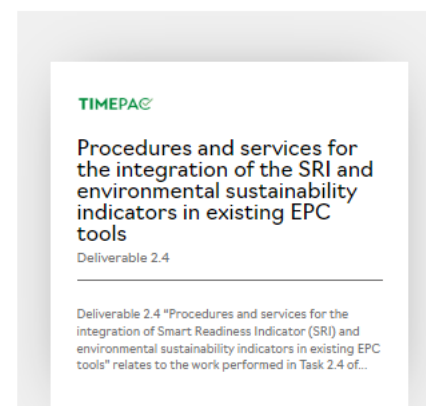
Creating building renovation passports from data repositories

Deliverable 2.3

📅 Published November 13, 2023

This report summarizes the work done in Task 2.3 "TDS 3- Creating Building Renovation Passports from data repositories". In a nutshell, TIMEPAC supports the implementation of the Renovation Passport by assessing renovation projects in the partner countries regarding procedures how to make use of data...

[Read more >](#)



Procedures and services for the integration of the SRI and environmental sustainability indicators in existing EPC tools

Deliverable 2.4

📅 Published November 16, 2023

Deliverable 2.4 "Procedures and services for the integration of Smart Readiness Indicator (SRI) and environmental sustainability indicators in existing EPC tools" relates to the work performed in Task 2.4 of the TIMEPAC project "Towards Innovative Methods for Energy Performance Assessment and Certification". Task 2.4 is...

[Read more >](#)



Procedures and services to undertake large-scale statistical analysis of EPCs databases

Deliverable 2.5

📅 Published November 16, 2023

This report summarizes to the work performed in Task 2.5 "TDS 5 - Large scale statistical analysis of EPC databases" of Work Package 2 "Transversal Deployment Scenarios". This work package is concerned with the creation of future scenarios with the aim of deploying and delivering...

[Read more >](#)

<https://timepac.eu/reports/>

**If you would like more information,
please visit www.timepac.eu or contact us at
leandro.madrado@salle.url.edu**

Thanks for your attention!