



## INTRODUCTORY REPORTS

# BUILDING LOGBOOK

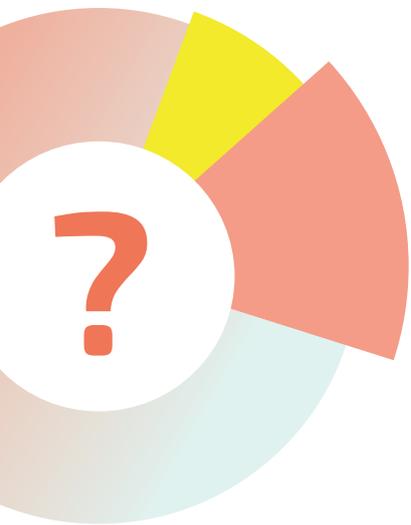
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BUILDING LOGBOOKS ARE REPOSITORIES FOR DETAILED BUILDING INFORMATION. THEY ACT AS A SINGLE POINT OF INPUT, ACCESS AND VISUALISATION OF ALL THE INFORMATION ASSOCIATED WITH A BUILDING UNIT THROUGHOUT ITS LIFECYCLE.

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## WHY WE DEVELOPED THIS FEATURE



Over the lifespan of buildings, data is routinely collected by multiple stakeholders for various reasons as many decisions rely on data availability. However, there is a lack of a common approach and structure among stakeholders which would make this wealth of information widely available, organised and easily accessible. Much of the data collected goes unused as it gets discarded or forgotten or is not compatible with other stakeholders' systems. The lack of an overarching structure shared across the built environment leads to information asymmetry, lack of transparency and higher risk for investment and renovation decisions.

Logbooks enable better decision-making throughout the building lifecycle, including management of technical and functional aspects, safety, conservation of economic value, certification, and improved energy and environmental performance. Organised and shared data reduces uncertainty but also the time and cost needed for collecting missing information. In this sense, building logbooks can reinforce the successful implementation of all other X-tendo features.

Availability of granular performance and maintenance data in addition to the energy performance certificate (EPC) could provide a more robust and reliable indication of energy performance and reduce data gaps about the building performance. Logbooks can enhance the overview of the entire building stock at all levels, allow public authorities to better tailor various measures, set benchmarks and strategies, as well as monitor progress towards climate goals (including through the national long-term renovation strategies).

## SCOPE OF APPLICATION



The building logbook is a common information management tool applicable across all building types. Certain data fields may be more relevant for a certain building type and commercial (or larger) assets may have more granular data collected and stored in the logbook compared to residential buildings. Equally, certain logbook functionalities and benefits are more important for specific real estate sectors and stakeholders. Notwithstanding the different needs, the logbook data model should apply consistently to the entire building stock.

<b>Building typology</b>	<ul style="list-style-type: none"> <li>• New and existing buildings</li> <li>• Residential (single-family, multi-family)</li> <li>• Non-residential (offices)</li> <li>• Public (education, health, heritage)</li> </ul>
<b>Tenure</b>	Owner-occupied, unoccupied, co-operative, private rental, public rental
<b>Property status</b>	Renting, selling, buying – new built and renovation

## LEVEL OF EXPERTISE, SKILLS AND TRAINING



The logbook is being designed to bring a wide range of benefits to different actors involved in the building value chain, including non-professional users such as homeowners, tenants, public authorities or financial institutions. As such, the logbook has to be user-friendly and easily accessible. Once the logbook platform is properly set up and operational, these users will not require upskilling and training.

	Fundamental awareness (basic knowledge)	Novice (limited experience)	Intermediate (practical application)	Advanced (applied theory)	Expert (recognised authority)
Building logbook	✓				

## GOOD PRACTICES



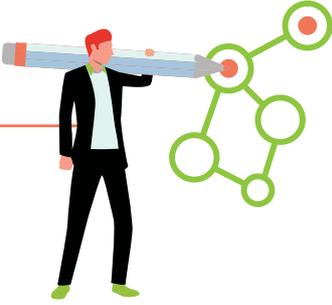
**Woningpas** (Flanders, Belgium) is a unique digital file of each individual building. The file can be retrieved by the building owner and by individuals who have been authorised access. The logbook features information on energy performance, renovation advice, the housing quality (such as stability, humidity, safety), data on the environment and, in the future, other building aspects such as durability, water, installations and building permits. The Woningpas will make it possible to track the evolution of each individual building. A first version of the Woningpas (Woningpas Light) was launched late 2018 (see below), followed by a series of upgrades in the following years.

The screenshot displays the Woningpas interface with the following sections:

- 1. Relevant data & advice:** Shows energy performance metrics, including a value of 187,00 and a bar chart indicating energy efficiency levels.
- 2. Relevant certificates:** Displays a section for certificates, with a score of 7.6.
- 3. Maps of the surroundings:** Includes a map showing the building's location and surrounding area.

The interface also features the logos for **WONINGPAS** and **Vlaamse overheid** at the top, and **Vlaanderen is energie** at the bottom.

# METHODS AND ASPECTS INCLUDED



- 1 Development of the **logbook data model**, including protocols for data capturing and data sharing (e.g. via a common webservice).
- 2 **Stakeholder engagement** over the use of data and access by third parties; mapping of logbook related benefits, costs, drivers and potential challenges; mapping of information flows, i.e. who needs what data, when, from what sources and in what form?
- 3 Clarifications of **data governance requirements** (both legal and technical, such as GDPR, intellectual property rights, data access and storage).



## HOW WE WILL IMPLEMENT IT

X-tendo will produce an overview of existing databases and the trustworthiness of their data, as well as guidelines to enable interoperability, data consistency and information exchange. Technical solutions and logbook concepts (e.g. stakeholder-related benefits and relevant data governance issues) will be documented for proper implementation. We aim to make available roadmaps, process flows, business models and good practice examples to further help the implementing partners with the design and execution of their own logbooks. The following diagram outlines the three main action areas for its successful application and systems testing by implementing partners.



### DATA MAPPING

Existing databases > Interoperability > Data matching > Information exchange



### TECHNICAL/LEGAL SOLUTIONS

Functionalities and benefits > Data governance > Data privacy/security



### AVAILABLE TOOLS FOR LOGBOOK REPLICATIONS

Available implementation roadmaps > Process flows > Stakeholder process guidance > Business model

# OVERALL EVALUATION

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## LESSONS LEARNT

- Need for close integration with other features and existing initiatives.
- Need to focus on benefits rather than costs..



## PREREQUISITES

- Open access to EPC databases, interoperability and data sharing.
- Mapping of benefits and stakeholder interests.
- Mapping of information flows.



## REPLICATION

- Existing public and private logbook initiatives across the EU (at least 20) with different levels of maturity.
- Attention must be paid to avoid potential market confusion.
- Include all building data.



## PROS

- Cost savings and reduced red tape.
- Risk mitigation, greater transparency and basis for decision-making.
- Overcoming market fragmentation.



## CONS

- Cost implications for end-users.
- Administrative burden.
- Unwillingness of data provider to guarantee data accuracy.



## RISKS

- A liability for end-users.
- Data quality may be compromised.
- Improper data handling (not in line with data privacy and security provisions).



## RECOMMENDATIONS

- Develop user-friendly interface.
- Provide clear scope of the logbook and clear legal framework.
- Include process for regular data validation updates.



## NEXT STEPS

- Develop a logbook data model.
- Design protocols for data capturing and data sharing.
- Engage stakeholders.

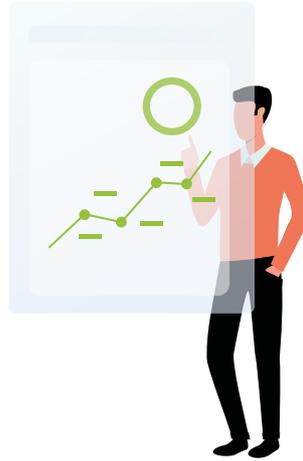


## COMPLEXITY

- Lack of alignment in terms of data standards.
- Unclear data governance rules.
- Current business models built on withholding (proprietary) data rather than sharing data.

## COMPLIANCE WITH CROSS-CUTTING CRITERIA

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### QUALITY AND RELIABILITY OF EPCS

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The credibility of logbooks is closely related to the quality of data and the reliability of sources. Data from public sources (e.g. EPC registries) is generally considered to be more reliable than e.g. information submitted by the owner. The data enclosed in the logbook will indicate the source and reliability of data. The mapping of different data sources will provide an overview of the different quality levels of the data.



### USER-FRIENDLINESS

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The main purpose of the logbook is to act as a building-related data repository that will be accessible to a wide audience. Data is presented and organised in a visually appealing and easily understood way. Furthermore, the data is linked to benefits and functionalities which enhances the value of the logbook and the buy-in from the owners (and all involved stakeholders).



### CONSISTENCY WITH STANDARDS

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GDPR and local legislation governing data protection and privacy rules are considered alongside relevant data standards. As soon as the EU proceeds with its digital building logbook framework and related standards, these will be cross-referenced with the X-tendo logbooks.



### ECONOMIC AND POLITICAL FEASIBILITY

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The impact on EPC cost/prices would be minimal and will not pose extended requirements and additional costs to the certification process. Political appetite is high given the inclusion of logbooks in the EU Renovation Wave strategy.

The logbook is conceived in a modular fashion right from the start. This is necessary not only due to cost reasons but also because it needs to take into account available information, state of development of real estate markets, market expectation and legal/regulatory circumstances.



# X-tendo



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