Stakeholders' Perceptions of the Drivers, Benefits, and Barriers to the Adoption of Digital Building Logbooks (Building Passports) for Building Renovation

Thank you for taking the time to participate in this research study.

This survey is being conducted as part of the Interreg Circular Trust Building research project and is funded by the Interreg North Sea Region Programme (https://www.interregnorthsea.eu/ctb). The aim of this study is to explore the main drivers, benefits, and barriers to adopting Digital Building Logbooks in renovation projects, based on stakeholder perspectives.

In this questionnaire, building renovation projects refer to actions taken to improve the energy efficiency of a building. This may include, for example: Adding or upgrading insulation (walls, roof, floors, windows) and installing low-carbon heating solutions (e.g., heat pumps).

What is a Digital Building Logbook?

A Digital Building Logbook (DBL), sometimes referred to as a building passport, is a digital tool that stores and organises essential information about a building such as its construction details, material use, energy performance, and any renovations or repairs that have been completed or are planned. In the context of renovation, DBLs help building owners, professionals, and authorities track updates and materials, plan interventions, and make informed decisions using reliable and accessible data. This enables a reduction in both operational and embodied carbon (emissions associated with additional materials).

Your Data and Privacy

Your responses will be used solely for academic research purposes. All answers are completely anonymous and confidential, no personal or identifying information will be collected or shared.

Estimated Time

The questionnaire will take approximately **10 to 15 minutes** to complete.

Consent to Participate

By proceeding with this questionnaire, you confirm that you:

- Have read and understood the information above;
- Voluntarily agree to participate in this study;
- Understand that your responses will remain anonymous and will be used only for research purposes including publications.

If you agree, please start the questionnaire

* Indicates required question

Section 2: Profile of respondents

1. Please select which category best describes your profile: *

Mark only one oval.

- Banks and insurers
- Certifiers
- Construction contractors
- Consultant
- Demolition contractors
- Designers
- Developers
- Facility and building managers
- Investors
- Landlords
- Material suppliers
- Owner occupier
- Public authorities & policy makers
- Tenants
- Tradespersons
- Real estate agents
- Renovation experts (designer, coordinator, assessor)
- Researcher / academic
- Housing association
- Other: _____

2. **In what country do you work/live?** * Dropdown

Mark only one oval.

- Albania
- Andorra
- Austria
- Belarus
- Belgium
- Bosnia and Herzegovina
- Bulgaria
- Croatia
- Cyprus
- Czechia
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Hungary
- Iceland
- Ireland
- Italy
- Latvia
- Liechtenstein
- Lithuania
- Luxembourg
- Malta
- Moldova
- Monaco
- Montenegro
- Netherlands
- North Macedonia
- Norway
- Poland

- [ ] Portugal
- [ ] Romania
- [ ] Russia
- [ ] San Marino
- [ ] Serbia
- [ ] Slovakia
- [ ] Slovenia
- [ ] Spain
- [ ] Sweden
- [ ] Switzerland
- [ ] Ukraine
- [ ] United Kingdom
- [ ] Vatican City

3. **Have you ever been involved in a building renovation project?** *This could include planning, advising, assessing, researching, funding, organising, or carrying out renovation work—whether or not the project was completed* *

   Mark only one oval.

   - [ ] Yes
   - [ ] No

Section 3: Digital Literacy Confidence with Digital Tools

How confident are you in performing the following tasks related to digital tools

4. Completing online forms or entering data into digital systems (e.g., update address on vehicle logbook, apply for planning permission) *

1 = Not confident at all 2 = Slightly confident 3 = Moderately confident 4 = Confident 5 = Very confident

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

5. Collaborating with others using shared online tools (e.g., Google Drive, SharePoint, or project platforms) *

1 = Not confident at all 2 = Slightly confident 3 = Moderately confident 4 = Confident 5 = Very confident

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

6. Accessing and/or retrieving information from digital building tools (e.g., EPC register, DBL platform, BIM model) *

1 = Not confident at all 2 = Slightly confident 3 = Moderately confident 4 = Confident 5 = Very confident

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

Section 4: Awareness of Digital Building Logbooks (DBLs)

This section aims to assess your current level of awareness and experience with Digital Building Logbooks (DBLs).

7. Are you familiar with the concept of Digital Building Logbooks (DBLs)? *

Mark only one oval.

- Yes
- No
- Not sure

8. Do you understand how DBLs could be used in renovation projects? *

Mark only one oval.

- Yes, clearly
- Somewhat
- No
- Not sure

9. Have you encountered any specific DBL initiatives (e.g. national programmes, pilot projects, industry tools)? *

Mark only one oval.

- ◯ Yes
- ◯ No
- ◯ Not sure

10. If yes, please list any Digital Building Logbook initiatives or platforms you are familiar with:
Open text response

_____

11. If you have encountered a DBL initiative, for what purpose(s) did you use the tool? *(Select all that apply)*

Tick all that apply.

- ☐ To access legal and statutory information
- ☐ To update renovation or maintenance information
- ☐ To support regulatory compliance (e.g. EPC, renovation passport)
- ☐ To deliver all the data and documentation required to market and sell your home
- ☐ To track lifecycle carbon or material information
- ☐ To manage the devices and services you use to run your home.
- ☐ Other: _____

12. Do you know of any frameworks or initiatives that provide guidelines or strategies for using Digital Building Logbooks (DBLs) to support circularity in building renovation? *

Mark only one oval.

- ◯ Yes
- ◯ No

13. If yes, please provide details

Section 5: Perceived Barriers to the Adoption of Digital Building Logbooks (DBLs)

To what extent do you agree that the following are barriers to the adoption of Digital Building Logbooks (DBLs) in renovation projects?

Please rate each item from 1 to 5:

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

14. Uncertainty over who owns the data and who has the right to access or modify information in DBLs *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

15. Lack of an operational framework for using DBLs in renovation projects *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

16. Fragmented regional or institutional approaches. Different regional authorities might work on separate DBL initiatives. *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

17. Lack of clear regulations or policies requiring the use of DBLs in renovation projects *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

18. Administrative burden due to unclear added value or return on investment for renovation stakeholders. *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

19. Lack of viable business models for long-term DBL use in the renovation sector *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5

20. Lack of government support, incentives, or subsidies for using DBLs in renovation projects *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5

21. High implementation or operating costs due to additional software, admin time, or third-party service needs *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

22. Limited understanding of how DBLs work and their benefits in renovation projects *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

23. General lack of awareness of DBLs among renovation stakeholders *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

24. Unwillingness or lack of motivation among stakeholders to keep DBLs updated with accurate renovation-related data *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

25. Low confidence in the security, privacy, or reliability of DBL systems and data protocols *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

26. Data challenges such as low accuracy, poor availability, lack of standardisation, or limited system interoperability *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

27. DBL information must be entered and updated manually, and many systems do not yet support dynamic or real-time renovation data *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

28. Lack of digital skills among renovation stakeholders to effectively use or engage with Digital Building Logbooks *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

29. Existing Digital Building Logbook platforms are not user-friendly or intuitive for renovation stakeholders to navigate and use effectively *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5

30. Are there any other barriers of Digital Building Logbooks (DBLs) in renovation projects that you believe are important but were not listed above? Also feel free to expand on your answers or provide additional comments.

Section 6: Perceived Benefits of Digital Building Logbooks (DBLs)

Question:

To what extent do you agree that the following are important benefits of Digital Building Logbooks (DBLs) in renovation projects?

Please rate each benefit from 1 to 5:
1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

31. Easy and fair access to clear, complete building information throughout its lifetime *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

32. Centralised, verified information improves efficiency, trust, and informed decision-making *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

33. Better risk assessment and consumer protection through accurate, data-driven insights *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

34. Improved real estate value *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

35. Increased productivity and support for new business models *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

36. Improved services for building owners due to better information availability *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

37. Centralised access to maintenance records supports planning and reduces costly emergency repairs *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

38. Better energy performance leading to lower utility bills *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

39. Greater awareness of building performance aspects such as energy use, carbon emissions, and indoor air quality *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

40. Smarter building energy use through real-time adjustment based on demand or grid conditions *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

41. Data-supported and tailored renovation plans that guide long-term building performance *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

42. More efficient use of materials and resources throughout the building lifecycle *

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

43. Are there any other benefits of Digital Building Logbooks (DBLs) in renovation projects that you believe are important but were not listed above? Also feel free to expand on your answers or provide additional comments.

Section 7: Drivers of DBL Adoption in Renovation Projects

To what extent do you agree that the following factors (drivers) can support or encourage the adoption of Digital Building Logbooks (DBLs) in renovation projects?

Please rate each statement from 1 to 5:

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

44. Existence and effectiveness of regulations or policies promoting or requiring DBLs in renovation projects *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

45. Development of an operational framework for DBL use in renovation projects *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

46. Access to shared data standards and legal frameworks defining data rights and responsibilities *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

47. Compatibility with existing building standards and digital tools (e.g., EPCs, BIM, smart meters, renovation passports) *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

48. Viable and sustainable business model supporting DBL implementation and maintenance *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

49. Costs of implementing DBLs are reasonable and justified by the value provided *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

50. Availability and use of government incentives or subsidies for DBL adoption *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

51. Users' (professionals, installers, or consumers) awareness of what Digital Building Logbooks (DBLs) are, how they work, and their core benefits. *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

52. Users' willingness to regularly update DBL content *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

53. Users' trust in data security, privacy, and ownership protocols *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

54. Availability of training, guidance, and funding to support DBL use *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

55. DBLs that automate access to green finance or renovation subsidies *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

56. DBLs pre-filled with data (e.g., EPC, renovation history, materials) reduce barriers to adoption *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

57. DBLs that show reuse %, lifecycle emissions, or avoided waste help make circularity actionable *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

58. DBLs that give residents visibility on costs, carbon savings, and retrofit plans foster engagement *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

59. DBLs are easy to use and user friendly *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

60. Customised interfaces (e.g., for owners, contractors, public bodies) increase ease of use *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

61. Linking DBLs to material passports helps track reuse and supports circular renovation *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

62. DBLs that include or link to building renovation plans aid in retrofit planning *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

63. DBLs that connect to existing datasets reduce duplication and streamline updates *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

64. Clear and secure methods for sharing DBLs *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

65. Use of standardised data formats, fields, and metadata improves usability *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

66. DBLs are applicable across various tenure types (e.g., private, social, rented) *

1 = Completely Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Completely Agree

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

67. Are there any other factors (drivers) you believe could support or encourage the adoption of Digital Building Logbooks (DBLs) in renovation projects that were not mentioned above? Also feel free to expand on your answers or provide additional comments.

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