

# NORDIC CIRCULAR CONSTRUCTION

MATERIAL PASSPORTS AND A DATA  
DICTIONARY FOR REUSED BUILDING  
MATERIALS

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# New danish project on material passports for reused materials

## Partners:

- Danish Technological Institute
- Molio
- ConTech Lab
- Circue – former Circle Bank

Supported by the philanthropic association Realdania and the Landowners' Investment Foundation.

Runs from June 2023 to June 2024



Ansøgning: Materialepas for genbrugte byggematerialer



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# Barriers for reused materials in buildings

- Traceability
- Documentation on hazardous substances
- Documentation on technical properties
- Availability
- Risk and responsibility
- Linear value chain
- ...

# Why material pass for reused materials in buildings?

- Traceability
- Documentation on hazardous substances
- Documentation on technical properties
- Availability
- Risk and responsibility
- Linear value chain
- ...

# What is material Passports for reused building materials?

## GOAL:

- industry standard for a digital material passport for reused materials
- Applicable for all stakeholders in the construction industry when collecting data on reused materials

## PURPOSE:

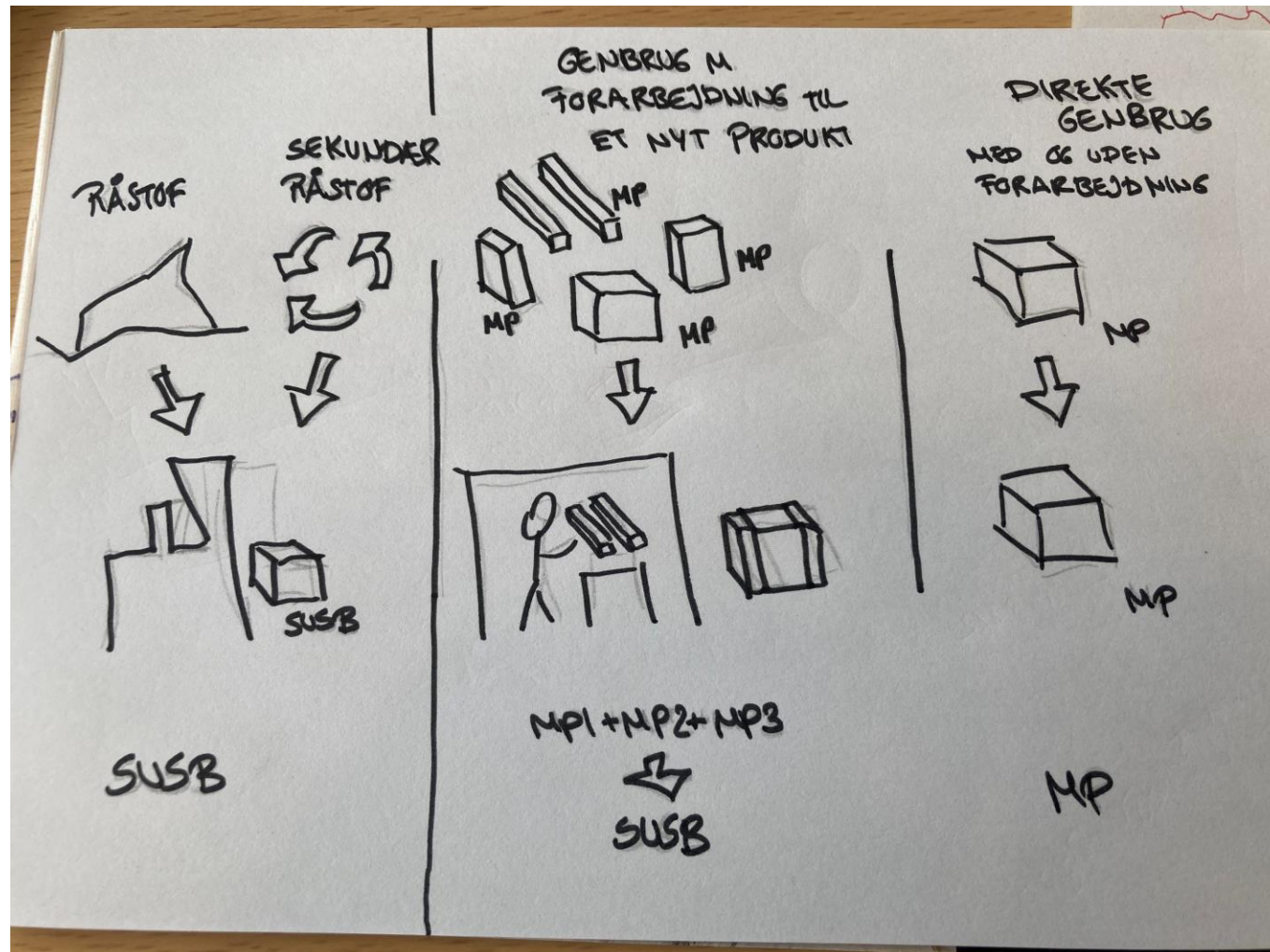
- Data to assess the suitability for reuse in different contexts
- Increase confidence in reused materials



# Interface to material pass for new materials

Material passport for new materials (SUSB) – [materialpass.org](http://materialpass.org)

The project will build on the experience of this passport and will look at the interaction of the two passports



# Material Passport collects data from the demolition process

Essential to collect data along the value chain

Predemolition Audit: Knowledge of hazardous substances, state of building, estimation of potential for reuse, results from testing.

Demolition: Knowledge of decontamination and disassembly of the building, state of materials.

Storage: Knowledge of storage, cleaning and restoration processes, testing.

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# Content in material pass project

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# Stakeholder involvement

- Mapping of stakeholders need and value creation
  - Data collectors
  - Material pass users -
- Stakeholders are for example:
  - Building owners
  - Architects
  - Engineers
  - Contractors
  - Demolition Companies
  - Companies using/selling reused materials



# Parameters in material passport

- Litterature study – What has allready been done
- Defining parameters relevant for a material passport
- Parameters could be (but not yet decided):
  - Dimensions
  - Colour
  - Weigth
  - Material
  - Expected life span
  - State of material
  - Hazardous substances based on the pre-demolition audit
  - Technical properties based on testing
  - ...

# Data dictionary and data format

- Datamodel ensuring unambiguous and consistence use of data
- Data dictionary contains detailed information of data/metadata on the parametre
- Based on international standards
- For example: Name, Data type, Definition, GUID, allowed values
- The material passport must be digitized, allowing data to be used and exchanged across digital platforms.
- Open dataformat (for example JSON, XML, CSV)

# Operation and Implementation

- Where do the data comes from?
- How will the data flow across stakeholders?
- Who will operate the material passport?
- Who will pay for the operation?
- How should the material passport be stored?

# Outlook

- Roadmap for circular economy in the building sector
- 3 movements towards 2030
  - From frontrunners to mainstream
  - From pilots to commercial projects
  - From monetary value to new value creation



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Thank you for your attention



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