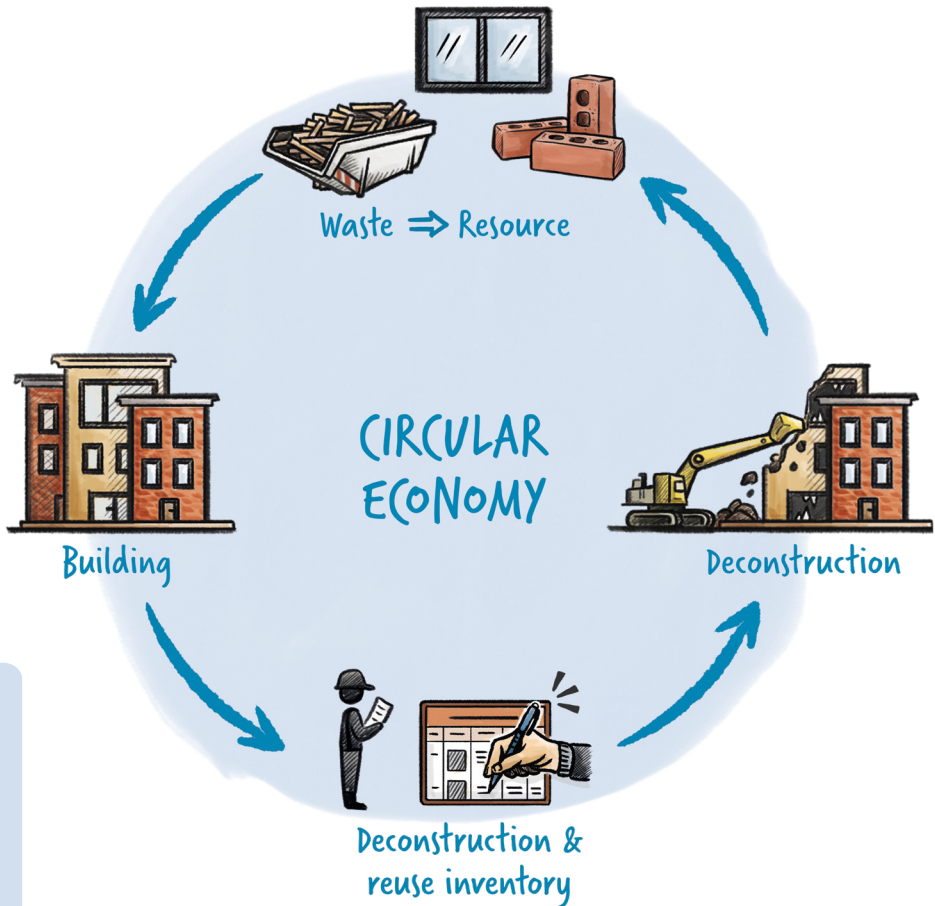


# MAKING AN INVENTORY:

The first step to more circular demolition



This publication is compiled for you by Buildwise as part of the Interreg project Digital Deconstruction, with the support of C-Tech

# AN INVENTORY: WHAT IS IT ?

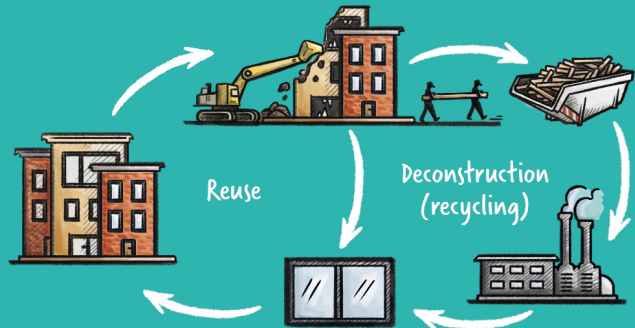
Inventory = list and characterization of waste and resources that will be released during demolition

## Making an inventory: an added value for all !

- ▶ Contractor : better site organisation, anticipate costs, avoid unfair competition
- ▶ Client and architect: knowledge of the building, waste valorisation, reuse, communication & information to other parties
- ▶ Reuse and recycling companies: information on the origin of the materials, recover elements and waste of higher quality
- ▶ Environment: circular waste management, more reuse, high-quality recycled materials, elimination of hazardous substances

### 2 types of inventories

- **Reuse inventory :**  
which materials are suitable for reuse on site or elsewhere?
- **Deconstruction inventory :**  
which waste materials will result from the deconstruction?



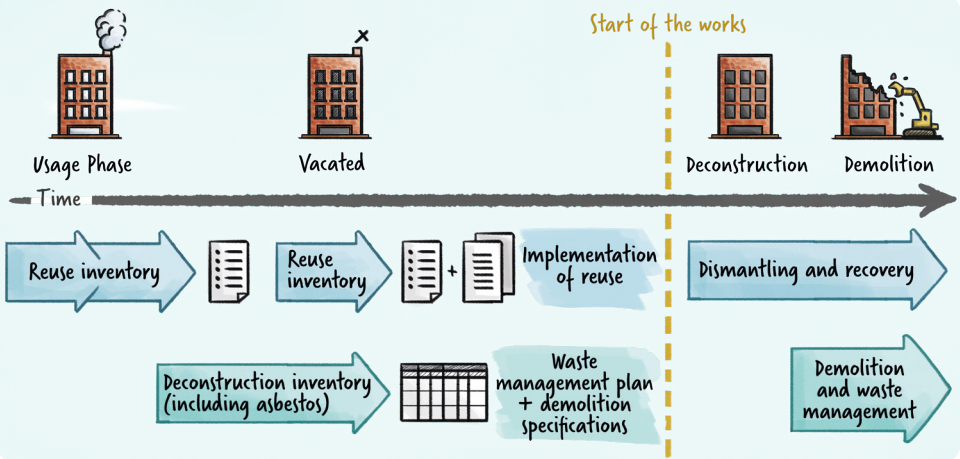
## When?

- ▶ As early as possible
- ▶ Drawing up a reuse inventory is an iterative process



### Caution!

Always make an asbestos inventory before doing dismantling tests



# DIGITAL TOOLS TO SUPPORT INVENTORIES

Digital tools allow information to be captured, structured, visualized, analysed and shared in order to get added value

There are different tools, suitable for different needs :

## Capturing information

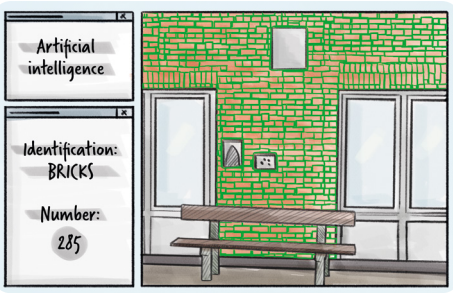
- ▶ Digitalising the as-is status using cameras and scanners
- ▶ Artificial intelligence to automatically identify and count objects



## Structuring information in an analysable way

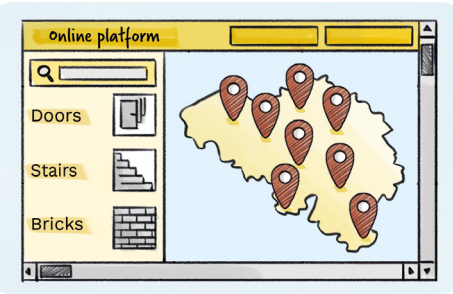
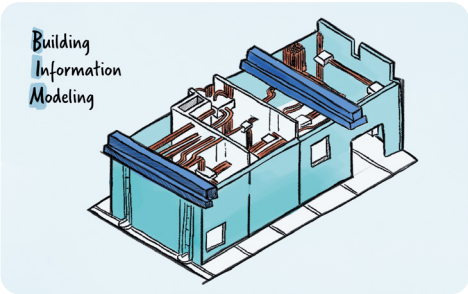
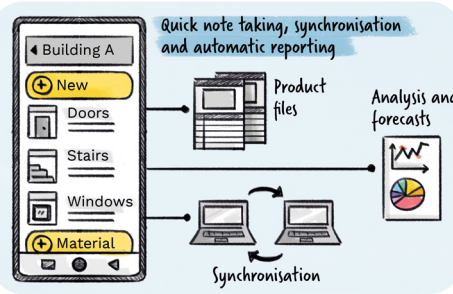
- ▶ Creating an inventory with Excel
- ▶ Creating an inventory with apps
- ▶ Using a BIM model

## Linking supply and demand

- ▶ Disseminating information on available materials and existing resellers through online platforms



Data (Excel)			
ID	Photos	Amount	Dimensions
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# DECONSTRUCTION INVENTORY


## What is in a deconstruction inventory?


The deconstruction inventory or pre-deconstruction inventory consists of a list of materials which are to be released during deconstruction, accompanied by information.

Different waste types require a different precision and type of information.

	Location in the building				Identification		Amount	Detail file number	Condition
	Building	Floor	Room	Number on plan	Type of use	Eural Code	Mass (kg)		
	building 1	0	A1	A140	asbestos cord	17 06 01*	16	01	non-brittle, damaged

	Location in the building		Identification		Amount	
	Building		Element/Material	Contaminants	Eural Code	Mass (tonnes)
	building 1		TL Lamps	Mercury	20 01 21*	0,02

	Location in the building		Identification			Amount	
	Building		Element	Material	Eural Code	Volume (m³)	Mass (tonnes)
	building 1		interior woodwork	B-wood	17-02-01	10	3

	Location		Identification		Quantity		Contamination?
	Building		Material	Eural Code	Volume (m³)	Mass (tonnes)	
	building 1		concrete	17 01 01	42	100	Yes, mineral oil on surface

## What is a deconstruction inventory used for?

- Fair competition in procurement
- **Information:** for the demolition contractor, reuse contractor, recycler, ...
- **Obligations:** asbestos inventory, separate treatment, hazardous waste, ...
- Waste management on site to increase high-quality recycling
- **Better site management:** logistics, cost, traceability
- Sustainability certifications (BREEAM, GRO, etc, ...)

## How to make a deconstruction inventory?

Follow these 4 steps:

### 1. Define the objectives

What do we want to achieve? What do we need to know?



### 2. Literature review: historical research

What do we know “on paper”?  
permits, survey records, photos, drawings, ...  
Speaking with people who know the building



### 3. On-site verification: building inspection and sampling

Do the plans match with reality? (renovations, incidents,...)  
Collecting further information (analyses, samples, etc, ...)



### 4. Results

Compilation of the report (including evaluation)



## Who makes a deconstruction inventory?

Expertise is necessary:

- Specialized engineering office
- Demolition contractor : practical knowledge



pay attention to the obligations

## Don't forget the legal obligations!

### Federal legislation: asbestos

- **Asbestos inventory** in the framework of the protection of workers

### Brussels-Capital Region

- **Asbestos inventory** in the framework of the environmental permit for asbestos removal

### Flanders

- **Waste inventory** & deconstruction plan
  - Mandatory for non-residential buildings (>1,000m<sup>3</sup>), residential buildings (>5,000m<sup>3</sup>) and infrastructure works (>250m<sup>3</sup>), to be done by a expert certified by Tracimat + follow-up by demolition management organisation (Tracimat)
- Link to general regulation and HMRP (High Environmental Risk Profile) and LMRP (Low Environmental Risk Profile)

### Wallonia

- A specific waste management plan is required for renovation and demolition work (CCTB 2022)

Please note that this represents the state of the legislation in 2022, which is likely to evolve!

# REUSE INVENTORY

## What is in a reuse inventory ?

A reuse inventory is a list containing information on various elements which have a potential to be reused:

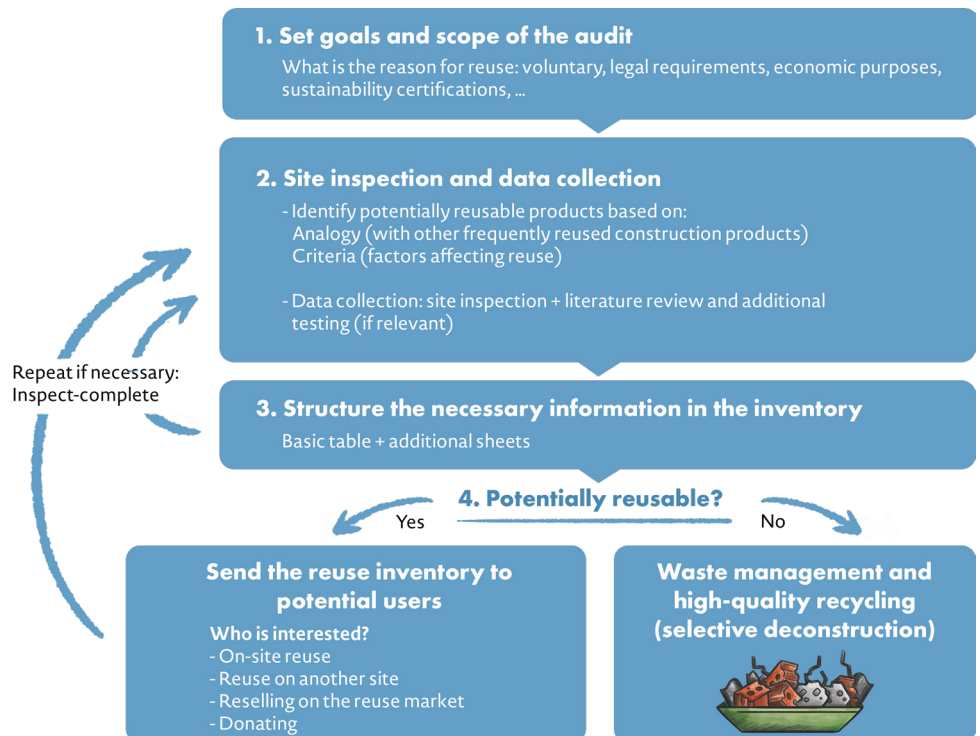
- dimensions ;
- Amounts ;
- Status/condition ;
- Technical properties, etc.

## What is the purpose of a reuse inventory?

To map the reuse potential of building products

- Crucial step to increase the amount of reused materials in the construction industry.
- Inventories are useful to :
  - Inform on the possibilities for reuse for the elements available on site ;
  - Boosting the efficient circulation of these elements ;
  - Communicating with demolition/deconstruction contractors ;

## How is a reuse audit made?



**Complete the inventory: to what level of detail?**

The level of detail depends on the destination of the materials, but should be sufficient to allow a proper assesment of the reuse potential.

**What information to collect and how to structure it?**

**Basic inventory**

- Information on the building, the owner, the auditor, the date of inventory
- Minimum information for each of the products identified

REUSE INVENTORY: basic information											
Identification	Photo	Amount	Dimentions	Mass	Total amount	Location on the site	Condition/ Status	Comment(s)	Dismantling phase	Suggested outlet	

**Additional sheets**

- To be compiled for any product for which a reuse potential has been identified, and whose destination requires additional information

REUSE INVENTORY: additional information	
Identification	
Additional photos	
Lot	
Context	
Overview	
Potential environmental gains	
Hazardous substances	
Additional documents	
Possible applications	
Other	

**Who can make a reuse inventory?**

Expertise is required

Take into account the professional experience of the auditor. Different background = different perspective





## Want to make inventories yourself?

This informative and inspiring brochure is designed to encourage you to conduct inventories reuse and demolition. The proper conduct of such inventories before demolition contributes positively to the circularity of the deconstruction.

As each building is unique, inventories are not generally reproducible and require specific expertise: please contact us if you need more support on this topic.

You can also turn to parties who provide the service of making such inventories. Several of them offer complementary services, such as integrating circular criteria into specifications, dismantling reusable elements, logistics and selling reusable materials.

### At your service:



**Buildwise**

☎ **02 655 77 11**

✉ **labo-duci@buildwise.be**

**Lab for Sustainable and circular solutions**



SUSTAINABLE BUILDING INNOVATION

☎ **02 655 77 11**

✉ **c-tech.brussels@buildwise.be**

**Technical support to innovative and sustainable construction**

### Other resources:

- ▶ Deconstruction Protocol for the Brussels Capital Region (Buildwise)  
[https://buildwise.direct/protocoledeconstruction\\_deconstruction\\_protocol](https://buildwise.direct/protocoledeconstruction_deconstruction_protocol)
- ▶ Guide to make an inventory of potentially reusable elements prior to deconstruction (FCRBE project) <https://buildwise.direct/fcrbe>
- ▶ Asbestos inventory in Brussels  
<https://environnement.brussels/lenvironnement-bruxelles/renover-et-construire/amiante-que-faire-pour-eliminer-les-dechets>
- ▶ Inventory of contaminants in buildings to be demolished (Buildwise)  
<https://www.buildwise.be/nl/publicaties/buildwise-artikels/2007-01.01/>
- ▶ Model of a 'deconstruction plan', Tracimat <https://www.tracimat.be/knowledge-centre/trade-information/>
- ▶ Standard building specifications for Wallonia (CCT-B 2022) <http://http://environnement.wallonie.be/forms/doc/186.docx>
- ▶ Technical framework for reused materials (BBSM) <https://buildwise.direct/bbsm>