

# PREDICTING FUTURE WASTE AMOUNTS FROM DEMOLITION ACTIVITIES IN VIENNA

## Introduction

Huge material stocks accumulate in cities, with buildings contributing greatly to this stocks. Moving towards a circular economy buildings should be considered a source for future secondary raw materials. To strategically plan and recover waste from demolition activities, the characterization of the material stock of buildings, and the projection of the available material quantities are required.

## Objectives

1. Characterize the material composition of different building types
2. Analyze the building structure of all buildings
3. Combine 1. & 2. to evaluate the total material stock in buildings
4. Estimate the material output from demolition activities

## Method

### Collect – Analyze – Combine

#### Information about the material composition of different building types

Case studies  
- analysis of documents  
- on-site investigation

New buildings  
- final bills  
- LCA Data  
- construction plans

Demolished buildings  
- analysis of construction plans

Literature review

#### Information about the building structure (GIS - geographical information system)

Area and height of buildings

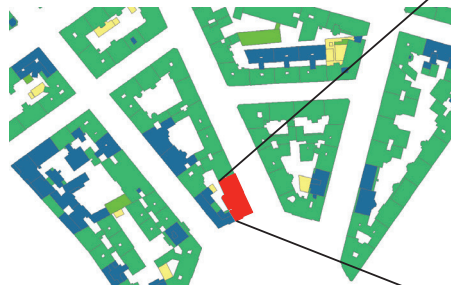
Utilization & construction period of buildings



## Result

### Resource cadaster with material information for each building

- Gives information about the total material stock in buildings
- Combined with data about the demolition activity, current and future waste streams can be estimated



Building information	Value
Height [m]	17.7
Area [m <sup>2</sup> ]	443
Volume [m <sup>3</sup> ]	7823
Utilisation	Residential
Construction period	Before 1918

Material composition [t]	Value
Mineral material	3400
Steel	23
Aluminium	0,66
Copper	0,74
PVC	2,3
Wood	67
Cement asbestos	0,73
Other plastics	1,8
Others	4,1



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