PREDICTING FUTURE WASTE AMOUNTS FROM DEMOLITION ACTIVITIES IN VIENNA

**Introduction**

Huge material stocks accumulate in cities, with buildings contributing greatly to this stock. 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

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**

- Height [m]: 17.7
- Area [m²]: 443
- Volume [m³]: 7823
- Utilization: Residential
- Construction period: Before 1918

**Material composition [t]**

- Mineral material: 3400
- Steel: 23
- Aluminium: 0.66
- Copper: 0.74
- PVC: 2.3
- Wood: 6.7
- Cement asbestos: 0.73
- Other plastics: 1.8
- Others: 4.1

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