



Construction and Demolition Waste (C&D Waste) – From problem to resource

1. **C&D Waste – from problem to resource**
2. Waste Management Plan – Why and How?
3. Survey of hazardous materials and components
4. Environmental remediation
5. Organisation and sorting on site
6. Downstream solutions



C&D Waste – From problem to resource

Welcome

Purpose:

- ✓ The purpose of this course is to give players in the construction industry knowledge about the correct handling of waste in the construction and demolition process.

Competence goals:

After the course, the participants shall be able to explain;

- ✓ when a waste management plan is required
- ✓ who is responsible to prepare a waste management plan
- ✓ required content and documentation
- ✓ what does environmental surveying and remediation include
- ✓ how to carry out sorting and waste management on the construction site
- ✓ downstream solutions and disposal options



Topics

We will discuss;

- why focus on waste during construction, demolition and rehabilitation
- the motivation and roles of the construction industry and the authorities
- requirements for the industry



Focus on C&D waste

Responsible handling includes;

- better resource utilization
- increased recycling
- compliance with regulatory requirements



Photo:: Guro Kristine Milli



Nasjonal handlingsplan, NHP5

Goal:

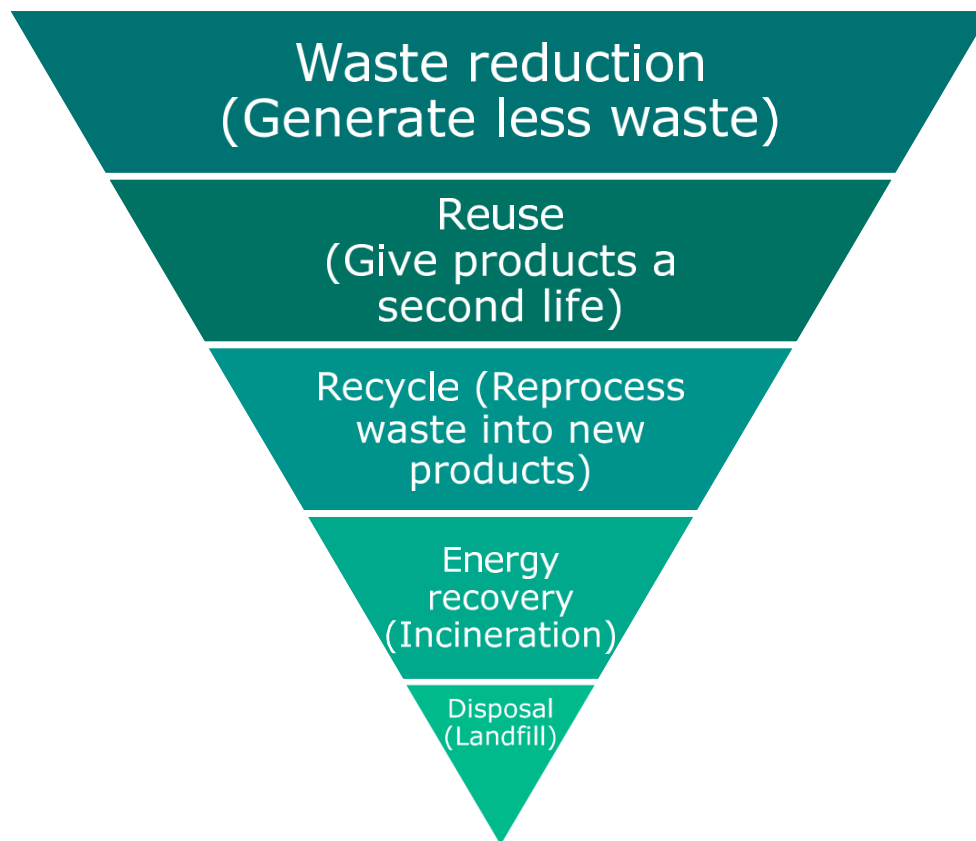
Contribute to a sustainable, responsible and lasting circular economy, without the risk of recycling environmental hazards.

Main goals:

- Focus on waste reduction throughout the entire process from planning to finished project (construction, rehabilitation and demolition)
- Meet EU's target of 80% recycling of C & D waste by 2023
- Better sorting and proper handling of all hazardous wastes
- Prevent the recycling of hazardous substances in the transition to a circular economy



The waste hierarchy





Waste reduction

- ✓ Measures taken before a substance, material or product has become waste, that reduce amount of waste or amount of hazardous waste
 - ✓ Use pre-cut materials
 - ✓ Use environmentally friendly products
 - ✓ Use long-lasting materials and products
 - ✓ Use recyclable materials
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- ✓ Clean Dry Building – Preventive health protection in buildings, RIF (2007)
 - ✓ TEK 17 §§ 9-1, 9-2.



Waste hierarchy - reuse

- ✓ Reuse is the ultimate resource utilization
- ✓ The materials or products are reused in new buildings



Kilde: [containergirlassistant.no](https://www.containergirlassistant.no)



Waste hierarchy - recycling

- ✓ Several materials can be recycled, such as:
 - ✓ Plastic
 - ✓ Plaster
 - ✓ Metal
 - ✓ Insulation
 - ✓ Glass
 - ✓ Cardboard and paper



Foto: Mirja Emilia Ottesen



Waste hierarchy – energy recovery

- ✓ Incineration with energy utilization





Waste hierarchy – landfill



Foto: Eirik Wormstrand



The Planning and Building Act

Requirements regarding C & D waste

- ✓ A waste plan is mandatory for:
 - ✓ all demolition and rehabilitation projects over 100 sq m
 - ✓ all new building projects over 300 sq m
 - ✓ construction, rehabilitation or demolition of buildings, facilities and/or constructions where the amount of waste exceeds 10 tonnes.
- ✓ A final report for waste management activities must be sent to the municipality after completion.
- ✓ At least 70% of the waste must be sorted into recyclable waste types, and all waste must be delivered to approved waste management companies for re-use or for recycling.



Requirements regarding C & D waste in The Planning and Building Act

- ✓ A report from an environmental survey must be prepared for all demolition and rehabilitation projects where a waste plan is mandatory. All hazardous waste must always be mapped, regardless of the size of the measure.
- ✓ For all measures in existing residential blocks and commercial buildings where there is a requirement for a waste plan (over 100 m², or more than 10 tonnes of waste), a re-use survey must be carried out and a report drawn up from the re-use survey.



The Pollution Control Act

- ✓ Everyone is obliged to avoid polluting.
- ✓ Even for measures that do not require an application in accordance with the Planning and Building Act,
- ✓ the waste must be mapped before the demolition and/or rehabilitation works start.
- ✓ The waste holder must give relevant information about the waste to the waste facility
- ✓ For all hazardous waste, the waste holder must complete a declaration form



EU Waste Directive

- ✓ For construction waste, there is a requirement for reuse or material recycling of
- ✓ At least 70% by weight of all non-hazardous waste C & D shall be reused or recycled waste.
- ✓ All hazardous waste must undergo a sound environmental treatment.
- ✓ Better sorting results in increased recycling

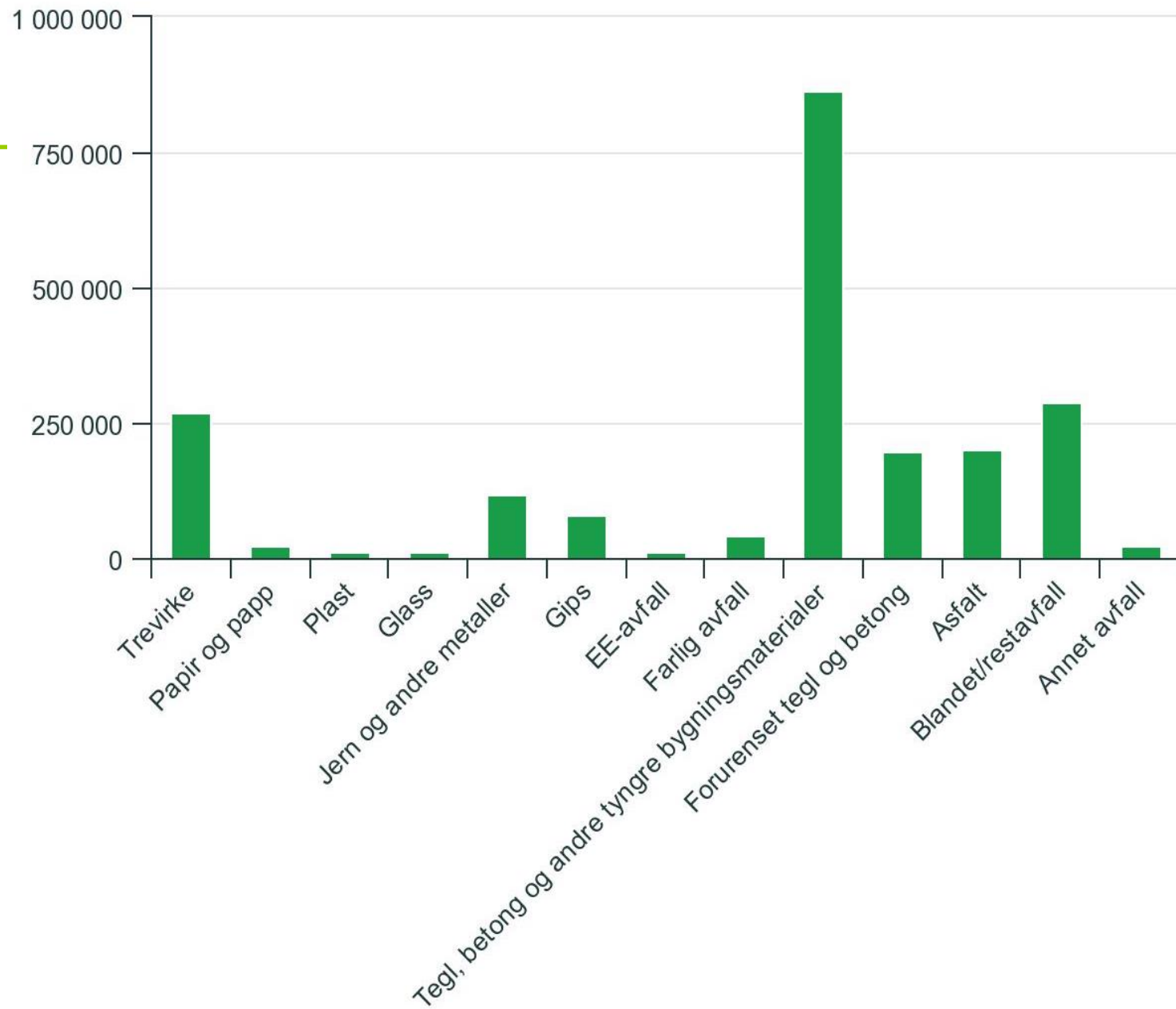


Waste volumes

SSB, 2020

The construction sector generated to approx. 1.9 million tonnes in 2020.

The amounts of waste are expected to increase in the coming years





Who may be contacted with questions about C & D waste?

- ✓ Municipality: pollution authority in building and construction matters.
- ✓ Waste management company.
- ✓ The County Governor, dept. of Climate and the environment: grants permits to waste facilities. This includes facilities for storage, sorting and processing waste.
- ✓ Norwegian Labour Inspection Authority: control of guidance on the working environment.
- ✓ Norwegian Environment Agency: prepares legislation and provides guidelines on waste management
- ✓ Norwegian Building Authority: : provides guidance to the Planning and Building Act and associated regulations (TEK17 and SAK10).