



Construction waste: from problem to resource

1. **Construction waste – from problem to resource**
2. Waste management plan – why and how?
3. Environmental impact assessment
4. Hazardous materials survey
5. Waste sorting and organization on construction site
6. How does the waste industry handle the various types of waste?



Construction waste: from problem to resource

Welcome

Purpose:

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

Competence goals:

After the course is finished, the participants should be able to account for:

1. When is it required to have a waste management plan?
2. Who is responsible for creating the waste management plan?
3. What should the plan contain and the use of documentation?
4. What does environmental impact assessment and hazardous materials survey mean?
5. How waste management and waste sorting should be done on the construction site?
6. Downstream solutions and disposal options.



Agenda

We are going to talk about:

1. Why should we focus on waste in construction, demolition and rehabilitation?
2. The motivation and roles of the construction industry and the authorities.
3. The requirements for the industry.



Why is it important to focus on construction waste?

1. Proper handling.
2. Resource utilization.
3. Increased material recycling.
4. Meet the requirements of the regulations.



Foto: Guro Kristine Milli



National action plan - NHP4

Goal:

The amount of building and construction waste must be minimized. We aim to achieve the highest possible recycling rate and proper handling of waste.

Main goal:

1. Contribute to safe handling of all hazardous construction and demolition waste and prevent recycling of environmental toxins.
2. Fulfill EU's target of 70% material recycling of building and construction waste by 2020.
3. Minimize the amount of construction and demolition waste during demolition, rehabilitation and new construction.



Prioritized waste types in NHP4:

Asbestos



Sealant



Foto: Guro Kristine Milli



Prioritized waste types in NHP4:

Refrigeration systems and heat pumps



Buried oil-filled cables



Foto: Guro Kristine Milli



Prioritized waste types in NHP4:

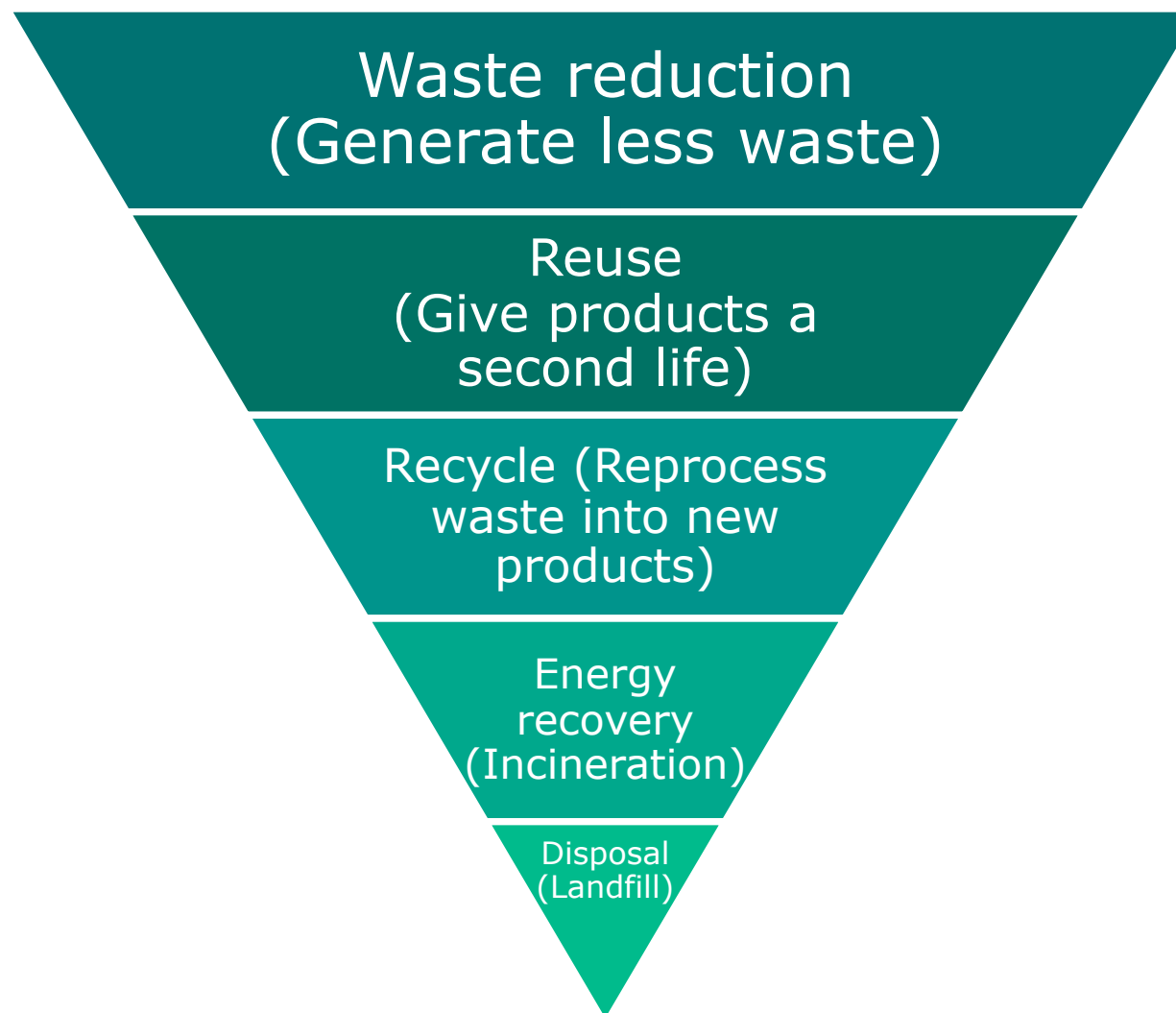
Insulation containing substances that are harmful to the environment.



Foto: Guro Kristine Milli



The waste hierarchy





Waste reduction

- ✓ Prevent waste from occurring.
- ✓ Use pre-cut materials.
- ✓ Use of environmentally friendly materials.
- ✓ Use of materials with a long service life.
- ✓ Use of recyclable materials.
- ✓ «Rent Tørt Bygg – Forebyggende helsevern i bygninger», RIF (2007).
- ✓ TEK 17 §§ 9-1, 9-2.



EU's waste hierarchy - Reuse

- ✓ Efficient resource utilization.
- ✓ Materials are reused in new constructions.



Kilde: containergirlassistant.no



EU's waste hierarchy – recycling of materials

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



Foto: Mirja Emilia Ottesen



EU's waste hierarchy – energy recovery

- ✓ Combustion with energy recovery.



Kilde: byggmester Sagen AS



EU's waste hierarchy – disposal



Foto: Eirik Wormstrand



Requirements for construction-and demolition-waste in the Planning and Building Act

- ✓ Having a waste management plan is mandatory for all demolition and rehabilitation projects that exceeds 100 sqm and all new construction that exceeds 300 sqm. In addition, it is also mandatory for projects where the amount of construction waste exceeds 10 tonnes.
- ✓ An environmental restoration plan shall be prepared for all demolitions- and rehabilitation- projects where a waste management plan is mandatory. All hazardous waste must always be mapped and identified, regardless of the size of the measure/project.
- ✓ A final report for waste management must be sent to the municipality after completion.
- ✓ Required a minimum of 60% waste sorting on construction site.



Pollution Control Act

- ✓ Everyone is obligated to avoid polluting.
- ✓ Even for measures/projects that are not subject to application, in accordance with the Planning and Building Act, the waste must be identified and mapped before the demolition and/or rehabilitation work begins.
- ✓ Everyone delivering waste to a waste reception must know what they are delivering.
- ✓ All hazardous waste must be declared.



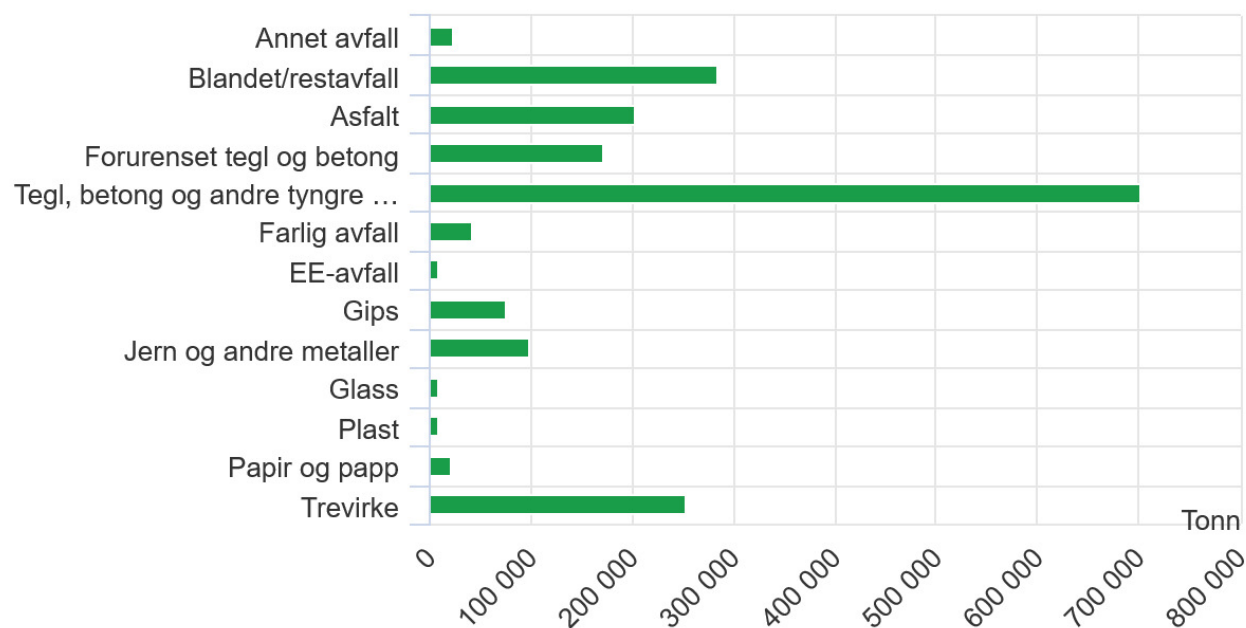
EUs waste framework directive

- ✓ The waste framework directive aims to reuse or recycle 70% of the non-hazardous construction and demolition waste by 2020.
- ✓ Hazardous waste must be handled correctly.
- ✓ Correct sorting of waste leads to a higher amount of the waste being recycled.



Waste volumes and financial savings

Figur 2. Genererte mengder avfall fra nybygging, rehabilitering og riving. 2017



Kilde: Avfall fra byggeaktivitet, Statistisk sentralbyrå.

- ✓ In 2017, approximately 11,7 million tonnes of waste were produced.
- ✓ Waste from the construction industry amounted to approximately 1,9 million tonnes, approximately 16,2% of the total waste produced.



Who can we contact when we have questions regarding construction waste?

- ✓ Municipality: pollution control authority in construction matters.
- ✓ Waste handling companies.
- ✓ The county governor's environmental protection department grants permits to most of the waste facilities. This includes receptions for receiving, sorting and treatment of waste.
- ✓ The Labor Inspection Authority: control and guidance on working environment.
- ✓ The Environment Agency: prepares regulations and provides guidelines on how the regulations should be practiced.
- ✓ Norwegian Building Authority: provides guidance to the planning and building act with associated regulations (TEK17 and SAK17).