



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 material survey
5. **Waste sorting and organization on construction site**
6. How does the waste industry handle the various types of waste?



Agenda

- ✓ How to sort waste in the best possible way?
- ✓ Which waste types should be sorted at what time in the process?
- ✓ Which waste types should be sorted?
- ✓ Logistics
- ✓ Safety inspections and «rent tørt bygg»



The waste management plans affect:

- ✓ Increased reuse.
- ✓ Calculation of waste quantities.
- ✓ Methodology.
- ✓ Logistics.
- ✓ Equipment and crew.

Find a skilled waste transporter and receiver.

[illegible]



Important players to avoid/reduce the amount of waste

- ✓ Architect and the designer: design to minimize waste.
- ✓ Contractor or the designer: create a well-functioning waste management plan.
- ✓ Contractor: sort the waste smart, logistics.
- ✓ Transport operator: arrange, organization of containers, disposal.



Construction waste generation across the project's lifecycle

Stages in a construction project					
Excavation	Foundation	Superstructure	Outside facade	Inside walls	Interior
Soil and rock					
Hazardous waste					
	Concrete				
	Metal				
	EPS/XPS				
		Roofing			
			Plasterboard		
			Insulation		
			Plastic		
	Wood				
			Glass		
				Electrical waste	
				Cardboard	

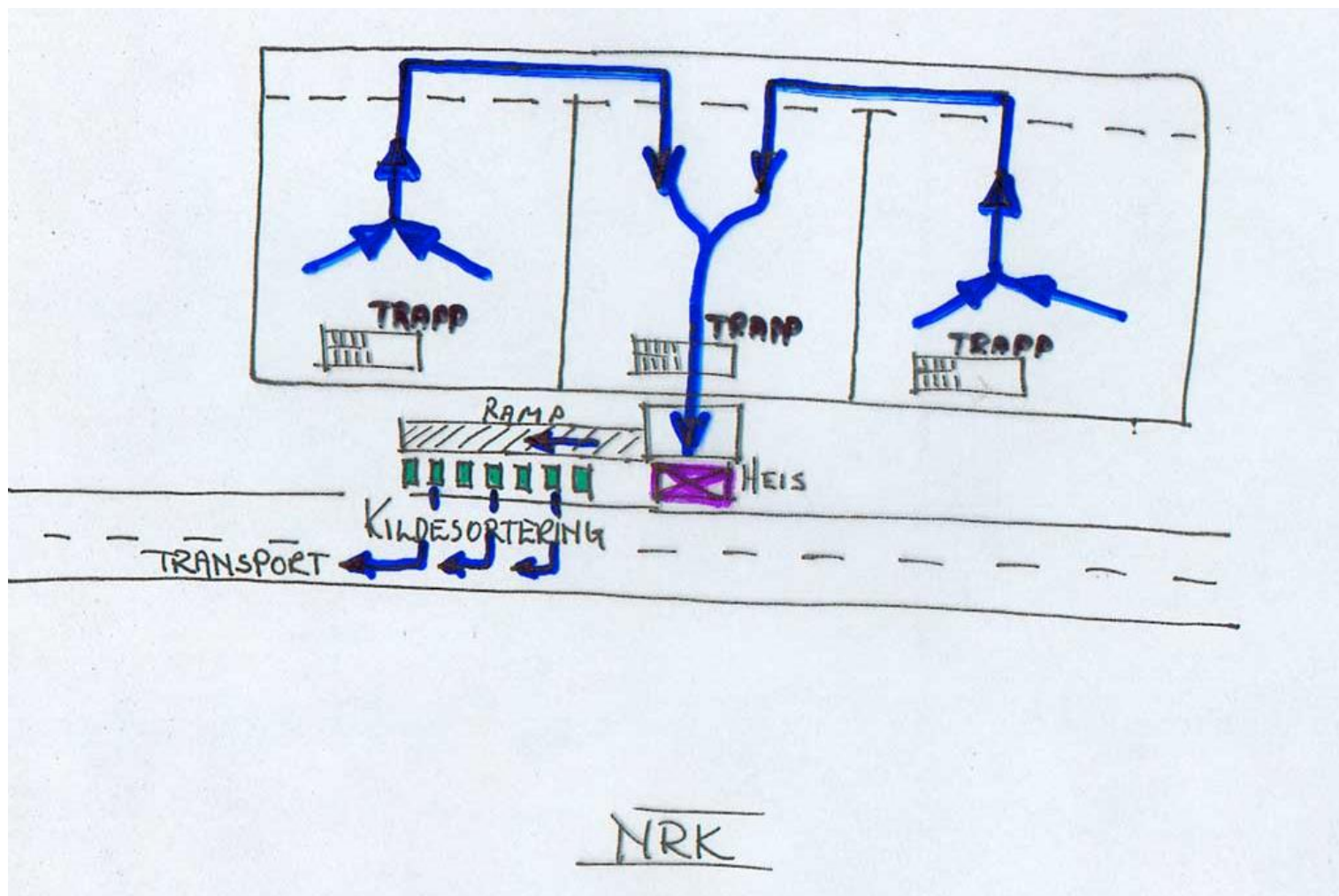


Logistics on the construction site

- ✓ Plan how the waste should be transported out of the floors.
- ✓ Environmental stations should be created at several places.
- ✓ Determine the number of waste types at any given time.
- ✓ Build ramps so that the waste is thrown into the containers.
 - ✓ Make it easier to find the correct container.
 - ✓ Less heavy lifting for employees.
 - ✓ Place the container for residual waste furthest away – this can contribute to increased sorting.



Detailed plan





Hazardous waste

- ✓ Should always be sorted.
- ✓ Must be sorted and handled as separate types of waste (should not be mixed).
- ✓ Must be handled properly and carefully.
- ✓ Must be delivered to an approved reception.
- ✓ Recommended to use lockable containers.

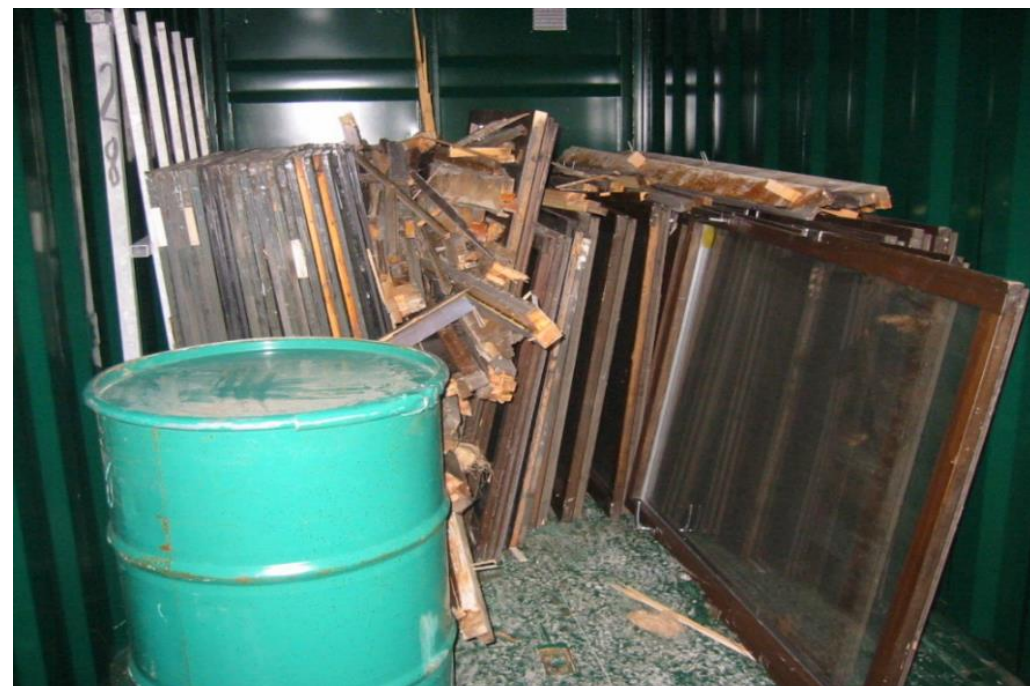


Foto: Sverre Valde.



The groundwork phase of the construction

- ✓ Metal.
- ✓ Wood.
- ✓ Hazardous waste.
- ✓ EPS/XPS.
- ✓ Residual waste.





Raw construction/furnishing

- ✓ Plastic foil/wrap.
- ✓ Hard plastic.
- ✓ Styrofoam.
- ✓ Cables.
- ✓ EE-waste.
- ✓ Gypsum.
- ✓ Hazardous waste.
- ✓ Impregnated wood.
- ✓ Pure wood.
- ✓ Brick/ concrete.
- ✓ Residual waste.



Foto: Eirik Werner



Gypsum and plastic

- ✓ A heavy and light fraction in the same container.
- ✓ Less transportation.
- ✓ 4*7 plastic foil bags.



Foto: Eirik Werner



Gypsum



Foto: Sverre Valde



Insulation

- ✓ Gathered in bags in the building.
- ✓ It can be convenient to have a net on top of the containers located outside to protect the waste from the wind.



Foto: Eirik Werner



Cables and EE-waste

Cables and EE-waste should be collected and sorted as a separate waste type.



Foto: Guro Kristine Milli



Heavier construction materials

- ✓ Largest type/fraction of waste.
- ✓ Clean materials used as infill.
- ✓ Should not contain paint, plaster and reinforcement.
- ✓ Expensive to deliver as mixed waste.



Foto: Sverre Valde



Contaminated concrete/brick

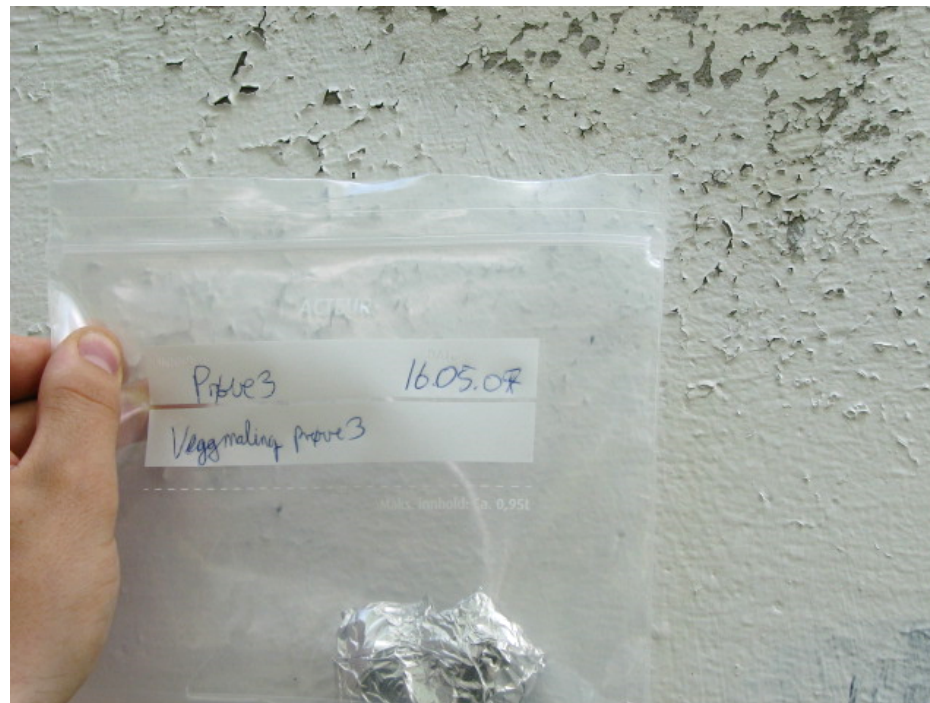


Foto: Sverre Valde



Wood



Foto: Sverre Valde

- ✓ Expensive to transport.
- ✓ Absolutely clean.
- ✓ Treated.
- ✓ Impregnated.



Metal

- ✓ Tradition of recycling metals for hundreds of years.
- ✓ Possible to get paid of different types of metals.



Foto: Sverre Valde



Residual waste

- ✓ Minimize residual waste.
- ✓ Expensive to deliver.
- ✓ Have you sorted the waste as well as it should be sorted?
- ✓ Never mix hazardous waste or EE-waste with the residual waste.



Foto: Sverre Valde



Did anyone complain about not having enough space?

Interim storage pending containers.



Foto: Eirik Werner



Small constriction sites

It is common for the construction client to personally drive the waste to a recycling station and sort it themselves. This does not provide any documentation on the degree of sorting.

Sorting in bags can be an alternative solution to increase the waste sorting, and you get documentation.



Foto: Guro Kristine Milli



Rent, tørt bygg (RTB)

RTB offers many benefits:

- ✓ Clean.
- ✓ Better waste sorting.
- ✓ RIF has prepared a guide for RTB.





Safety inspections

- ✓ Waste should be part of the agenda.
- ✓ Safety inspections can be held weekly.
- ✓ Not correct waste sorting can be photographed.
- ✓ The person responsible for the incorrectly sorted waste should be informed.
- ✓ The subcontractor can be invoiced if the waste is not sorted correctly, and if this is contracted.



Benefits of waste sorting

- ✓ Hazardous waste is sorted and separated.
- ✓ Better usage of the containers, resulting is less transportation of “air”.
- ✓ Fewer container transports.
- ✓ Increased knowledge about waste and waste sorting could increase the proportion of waste that is recycled.
- ✓ Many types of waste delivered at a reduced price.
- ✓ There exist schemes for producer responsibility for certain types of waste.



Foto: Terje Borud sortere.no/bedrift