



Nordic project " Strategies and methods for implementing CE in construction activities in the Nordic countries – supporting cases"

**Margareta Wahlström, project presentation
for CITYLOOP on June 16, 2021**



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Objectives of the study

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Objectives of the study

- to identify and present good examples/cases and experiences from the implementation of circular economic concepts at local level in the Nordic communities with a focus on construction, renovation and demolitions.
 - to map which digital solutions are applied or expected to be applied as tools to boost a circular economy in the Nordic countries
 - to analyse barriers and drivers for uptake of circular economy in the Nordics by analysis of good examples in the implementation
 - to present policy recommendations for uptake of CE in construction sector
-
- Project duration: March – November 2020



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Strategies mapped

- Start: mapping of national strategies (waste management plan, prevention plan, resource efficiency strategies, sustainability...)
- Selection of some municipal and local strategies for further analysis
- If possible, analyse types of CE actions initiated by local strategies



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CE actions in focus in constructive activities

Life cycle stage	Circular economy aspect
Design	DfD Design for adaptability and flexibility Design for standardisation Design out waste Design in modularity Specify reclaimed materials Specify recycled materials
Manufacture and supply	Eco-design principles Use less materials/optimise material use Use less hazardous materials Increase the lifespan Design for product disassembly Design for product standardisation Use secondary materials Take-back schemes Reverse logistics
Construction	Minimise waste Procure reused materials Procure recycled materials Off-site construction
In use and refurbishment	Minimise waste Minimal maintenance Easy repair and upgrade Adaptability Flexibility
End of life	Deconstruction Selective demolition Reuse of products and components Closed-loop recycling Open-loop recycling
All stages: management of information including metrics and datasets	

Ref. Adams, K. *et al.* 2017.
[Waste and Resource Management](#) 170(1):1-11



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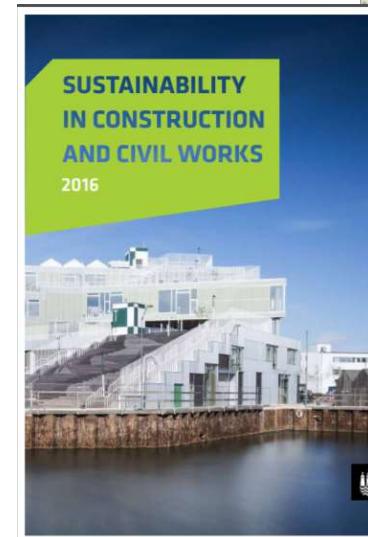
Key findings

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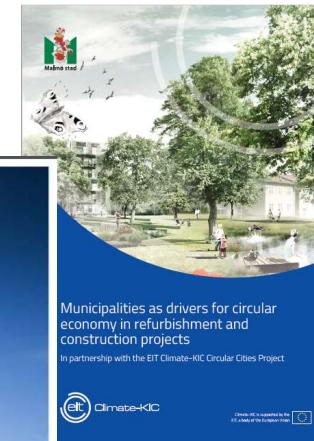
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Implementation of local CE strategies

- Local and national strategies: measures to reach the set targets in the implementation of CE strategies
- Several local strategies focused not only on circular economy aspect, also on climate effects.
- The local strategies rather generally formulated.
- The requirements of the City of Copenhagen “Sustainability in construction and civil works” are a good example of a tool for implementing a number of strategies, including KBH 2025, the Climate Plan, the Resource and Waste Plan 2018 and the Climate Adaptation Plan.
- Example of tool: GPP in construction (more effective and demolition)
- Challenge: difficulties to find acceptable products suitable for the construction at right time



Ref. Copenhagen city, 2016.
[LINK](#)



Ref. Malmö city
2020. [LINK](#)



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At start, collection on information
on national strategies and
examples of local strategies and
tools/criteria

Digitalization

- At start, collection on information on digitalization examples
- Focus on digital solutions on documentation of waste flows and treatment of CDW through traceability and marketplaces
- The level of digitalization generally low in the construction and demolition sector in the Nordic countries, and many digital solutions are at early development stages.
- Documentation of C&D waste flows and development of national waste statistics are done differently in the Nordic countries.



The screenshot shows the homepage of the Norwegian Directorate for Building and Fire Safety (Doktoratet for byggkvalitet). The top navigation bar includes links for SAKSBEHANDLING, BYGGE SELV, BYGGEREGLENE, BYGGEVARER, and SENTRAL CODKJENNING. Below the navigation, there is a banner with the text "Du er her: Første / Verktøy og veivisere / Fellesjenester Bygg / Tjenestene / Tjenester for proffbrukere".

Ta i bruk nye løsninger for byggesøknader



Nye, digitale løsninger for byggesøknader gjør det enklere å levere komplette søknader som gir raskere saksbehandling. Ta i bruk de nye løsningene nå, før ByggSøk stenger i oktober. Her finner du informasjon som hjelper deg å finne riktig løsning for deg.

Sist endret 02.04.2020

Ref. Norway: Doktoratet for byggkvalitet: New Digital platform for building and demolition permission applications [LINK](#)



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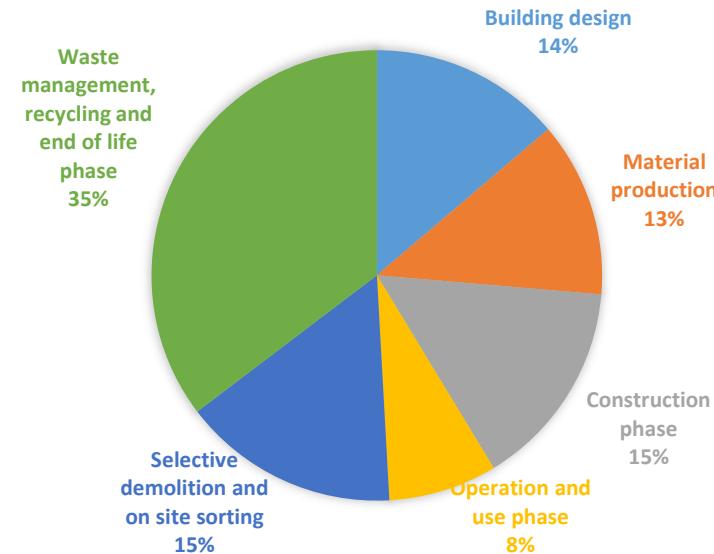
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Mapping of cases

- First, 113 cases were collated from Denmark, Finland, Norway and Sweden for further analysis.
- Many cases could not be linked to a national or local strategy
- Cases more linked to a funding body and related calls or to national waste management plan aiming for waste prevention and improved recycling.

LIFECYCLE STAGES COVERED IN MAPPED CASES



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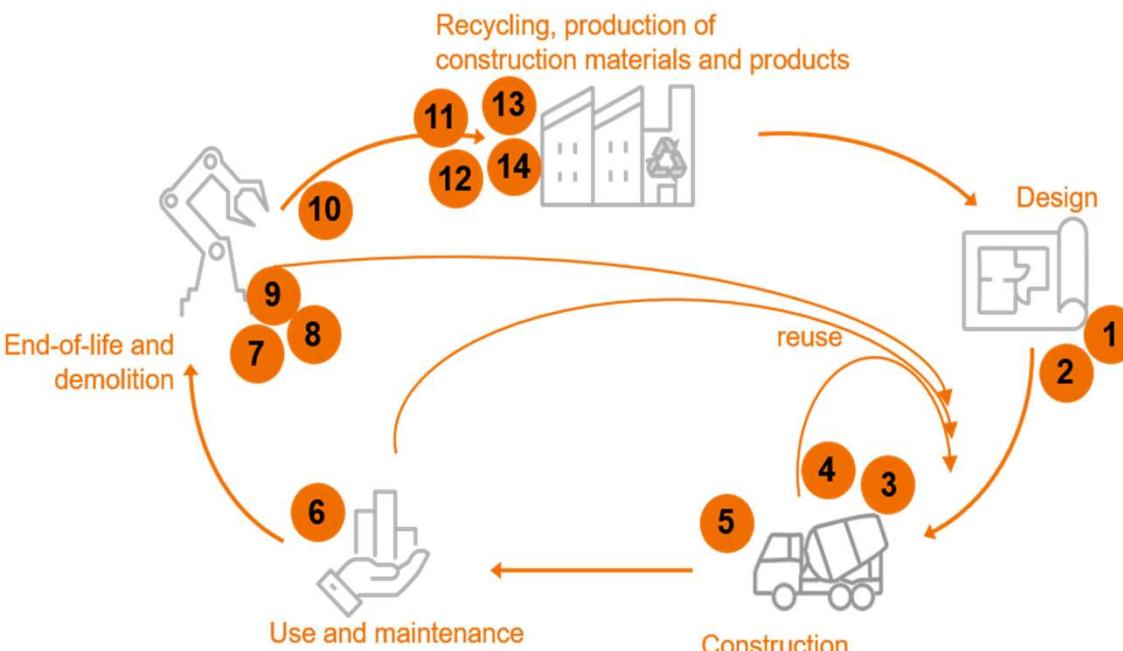
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Selected cases (14):

- Criteria for selection of cases developed
- Cases covered:
 - Design (2 cases)
 - Construction – material efficiency (3 cases)
 - End-of-life products: Market places (4)
 - Recycling of C&DW (4 cases)
 - Others (1 – resource mapping)



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Cases: analysis of drivers and barriers

- Focus on selected cases (Note! numerous reports available on drivers and barriers)
- Grouping of observations:
 - Technical specification – CE-marking/certification
 - Supporting quality and collection
 - New business models for reuse – e.g. market places
 - Market pull – policy instruments for market uptake
 - Indicators - Reuse and recycling targets
 - Others (e.g. awareness, education)



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Policy recommendations



- Recommendations drawn up based on findings in cases
- 10 recommendations formulated:
 1. Local CE strategies – guidance documents with concrete criteria
 2. GPP in construction and demolition work
 3. Indicators for CE actions - Nordic input to EC
 4. Reuse and CE marking – Nordic input in revision of Construction Prod Regulation
 5. Digital solutions – competence in the entire value chain
 6. Conformity assessment – tools (End-of-waste concept/certification, guidance)
 7. Promoting market for CE solutions – fiscal instruments
 8. Funding of new technology demonstrations
 9. Education in (applied) universities on CE solutions in construction
 10. Awareness raising, education of professionals





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Further information:

Report: <https://pub.norden.org/temanord2021-508>
Policy brief: <https://pub.norden.org/nord2021-014>

Acknowledgment:

This research was founded by the Nordic Working Group for Circular Economy (NCE) under the Nordic Council of Ministers

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THANK YOU!



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