

NEW DEMANDS

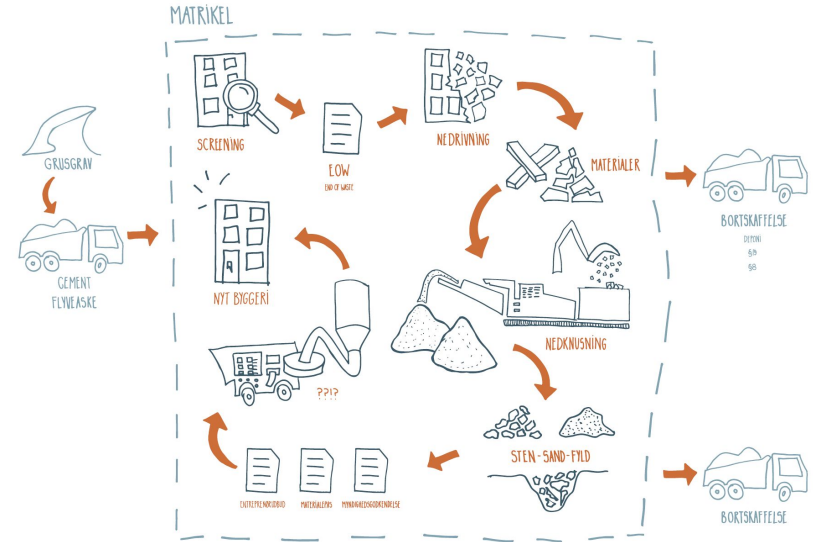
NEW POSSIBILITIES

Circular Procurement

Klaus Kellermann Roskilde Municipality



- Framework for transition
- Municipality tools
- Circular Economy and responsibility
- Market possibilities



Bog & idé

FLENSBORG



ROSkilde
KOMMUNE

PAS PÅ KLIMA
SÅ FØLGER VI
SKEMA

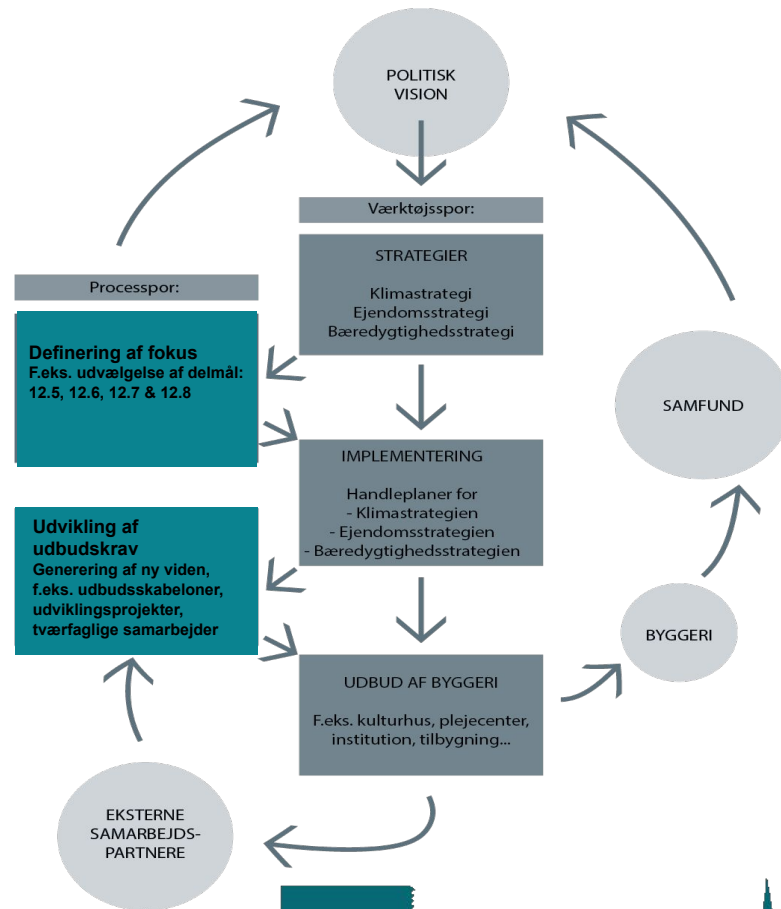
PAS PÅ VAM
JORD
JEG VIL OGSÅ JEMME
FORTNITE
TILDE MIG BARE STOR

PAS PÅ VORES
DØR HER VIBOR

there is
NO Planet
B!!!
Vi Skolestrejer

BEREJNET
SIGER NEJ TIL
FLEKE NARRESUTTER





Development and Implementation





ROSKILDE
KOMMUNE



ALLE
TIDERS
ROSKILDE



EJENDOMSSTRATEGI



Spraglehøj

PROPERTY STRATEGY 2022

12.5 – 12.8

	Inden 2030 skal affaldsgenereringen væsentligt reduceres gennem forebyggelse, reduktion, genvinding og genbrug.
	Virksomheder, især store og transnationale virksomheder, skal opfordres til at benytte bæredygtig praksis og til at integrere oplysninger om bæredygtighed i deres rapporteringscyklus.
	Der skal fremmes bæredygtige offentlige indkøbspraksis i overensstemmelse med nationale politikker og prioriteter.
	Inden 2030 skal det sikres, at mennesker alle steder, har den relevante information og viden om bæredygtig udvikling og livsstil i harmoni med naturen.

Circular economy

Circular economy and better resource utilization are playing an increasingly important role in construction. In the early decision-making process, it must be assessed how material consumption can be minimized through recycling and recycling of both buildings and building materials, including land.

It is an objective to ensure that circular construction is profitable both environmentally and economically. Therefore, business cases must be prepared for various recycling projects. This will happen both internally and through participation as a demonstration municipality in development projects such as Hall 12, CityLoops and Circle Bank.

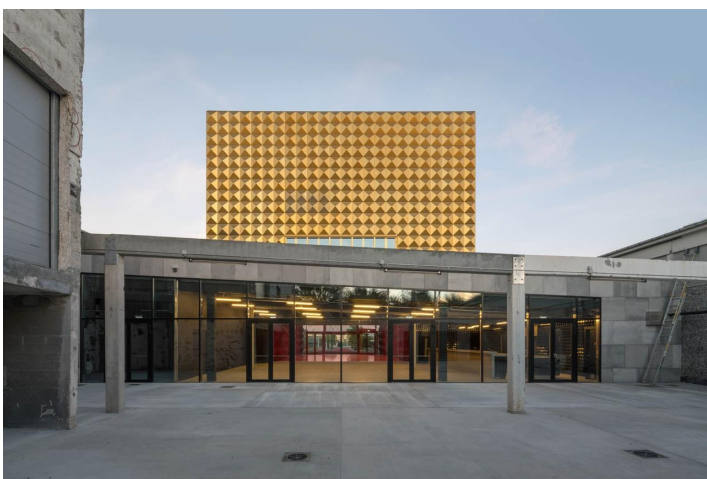
PROCUREMENT STRATEGY

- Explicit demands for LCA calculations
- Explicit demands for LCC calculations
- All larger project are certified DGNB
- All projectsales are combined with demand on DGNB certification to third party.
- Explicit demands for reuse and recycling
- Explicit demands for design for disassembly





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DEVELOPMENT PROJECTS

The municipality received funding for our first experiments with recycled concrete.





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PRACTICAL LEARNING PROCESS

The results of the project has been transformed into a **practical builders manual**, that is distributed to other municipalities



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Materials are **tested** and taken out of the waste hierarchy through **EoW**

Material passport indicates possible reuse and recycling potential



MATERIAL BANK



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RESSOURCE SHEDS





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RESSOURCE SHEDS

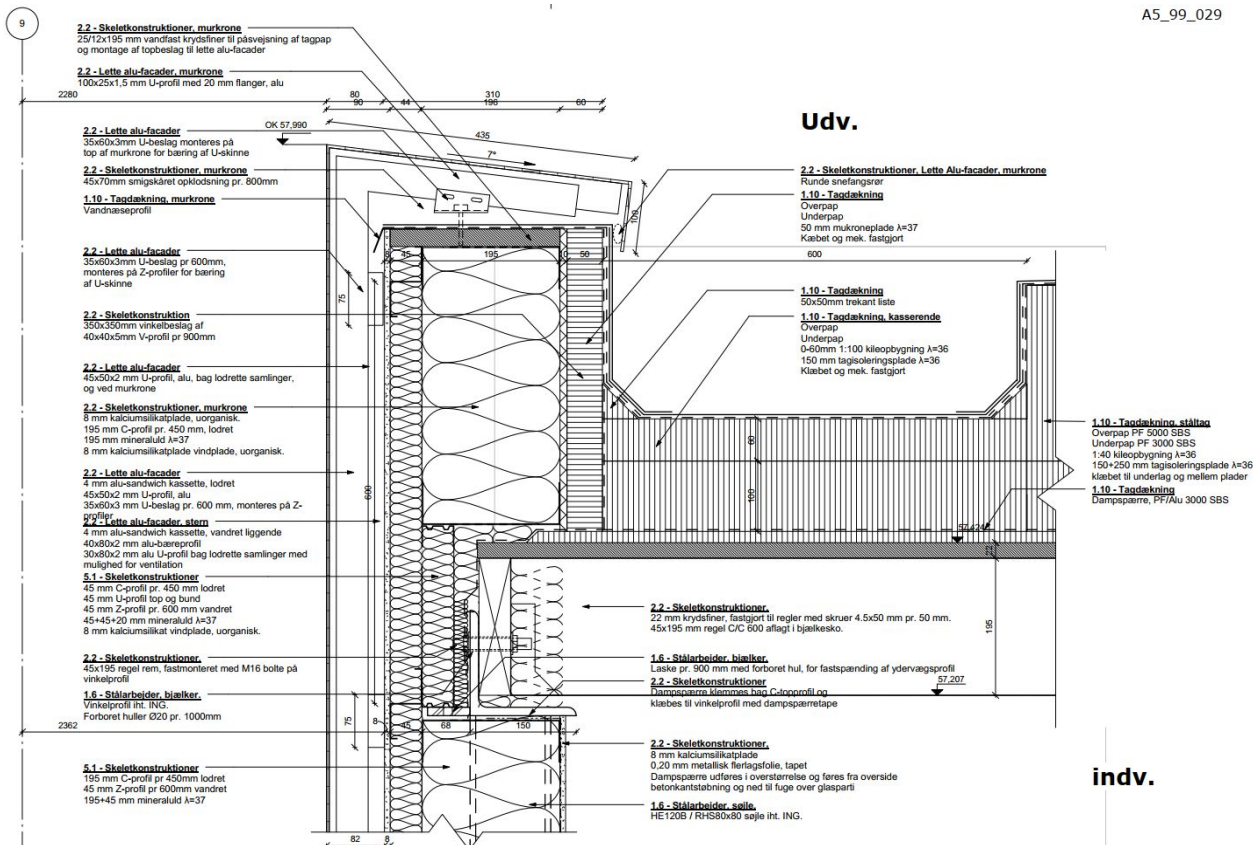




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THE NEED FOR A NEW PARADIGMA

A5_99_029



Buildings are too
complex.

Too many materials are used

Buildability

Is a goal in itself.

Responsibility is
not treated in the process

Building owners are not
dealing with **risk** in a
transparent manner.

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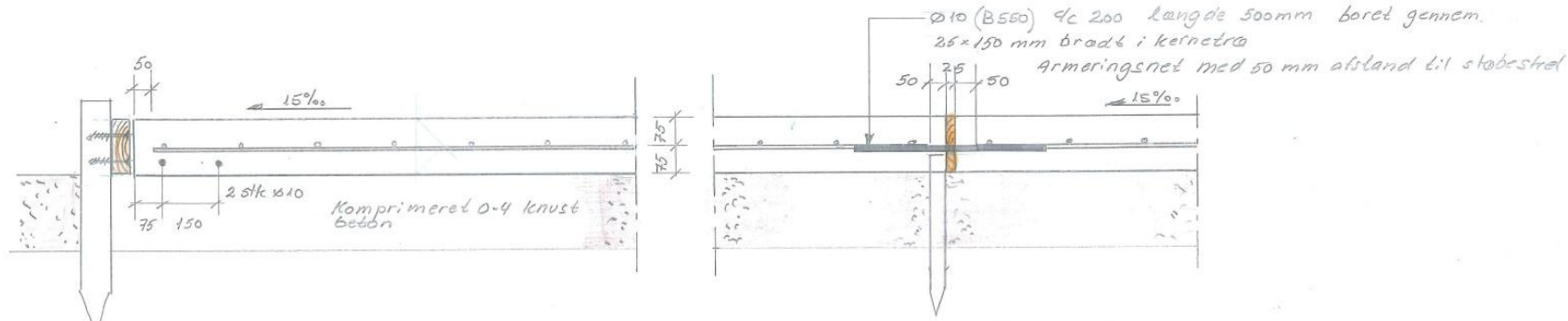


By insisting on a more simplistic buildingstyle,
risk as a whole can be brought down.

Often the use of circular building methods leads
to more simple solutions and traditional **risk** is
often placed more deliberate.

Buildingowners must take more
responsibility

LÆRINGS- PROCES





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ENVIRONMENTAL QUALITY

55% lower
CO2 emissions

ECONOMICAL QUALITY

30% lower
constructions costs

SOCIAL QUALITY

75% of the costs
are used for local salaries

Tegnestuen Vandkunsten



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ROSKILDE

BIDDING PROCESS

Experiences from development projects migrates into larger scale commercial projects

Competition:

Demands for recycling and reuse

Demand for soil balance

Demands for Life Cycle Calculations





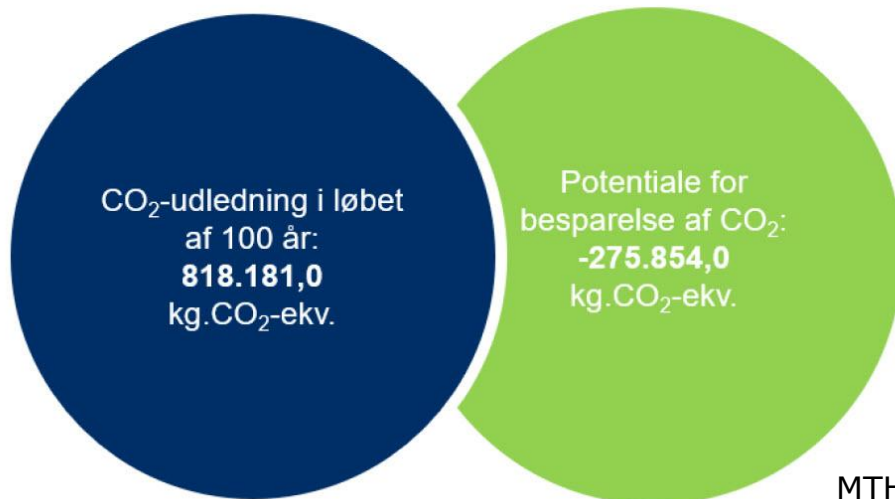
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RESULTATER

Bygningens CO₂-udledning i løbet af 80 år er følgende:

Tabel 1 Bygningens CO₂-udledning og potentialle besparelser per hovedgruppe

	CO ₂ -udledning [kg. CO ₂ -eq.]	Potentiale for CO ₂ -besparelse [kg. CO ₂ -eq.]
Bygningsbasis	117070	-4492
Primære bygningsdele	625544	-259211
Komplettering	71946	-10603
Installationer	3620	-1548
	818.181,0	-275.854,0



MTHøjgaard A/S

TARGET

Focus on
recycling **is kept** by
building owner and carried
out by contractor

Recycling and
design for
disassembly is
being implemented
throughout the project .



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Surplus materials are being stored from project to project



The bidding process acts as main **communication** of
ambitions

The **priorities** of the building owner should be **transparent**



Closing the loop for urban material flows

Europæisk samarbejde omkring genanvendelse af byggeaffald og jord på tværs af syv byer

- Apeldoorn, Holland
- Bodø, Norge
- Mikkeli, Finland
- Porto, Portugal
- Sevilla, Spanien
- Høje-Taastrup, Danmark
- Roskilde, Danmark



Fraction	Unit	Amount	Circular action	Transport distance Km	Saving Potential Reuse	Saving Potential Recycling	Saving Potential in kg CO ₂ e	Saving Potential Accumulated kg CO ₂ e
1 Sand/Gravel	tons	3500	Local Reuse	50	13466,25	Not relevant	13466,25	13466,25
2 Soil	tons		No circular action		0	Not relevant	0	0
3 Concrete	m ³		No circular action		0	0	0	0
4 Bricks	m ²	5000	General Recycling		194650	246550	246550	246550
5 Glass/windows	m ²		No circular action		0	Not relevant	0	0
6 Gypsum	m ²		No circular action		Not relevant	0	0	0
7 Steel	kg		No circular action		0	0	0	0
8 Aluminum	m ²		No circular action		0	0	0	0
9 Bitumen/Roofing	m ²		No circular action		Not relevant	0	0	0
10 Insulation	m ³		No circular action		Not relevant	0	0	0
11 Timber	m ³		No circular action		0	0	0	0

2,60E+05 kg CO₂e total