

– BUILD START 2020 –

# HOPPET

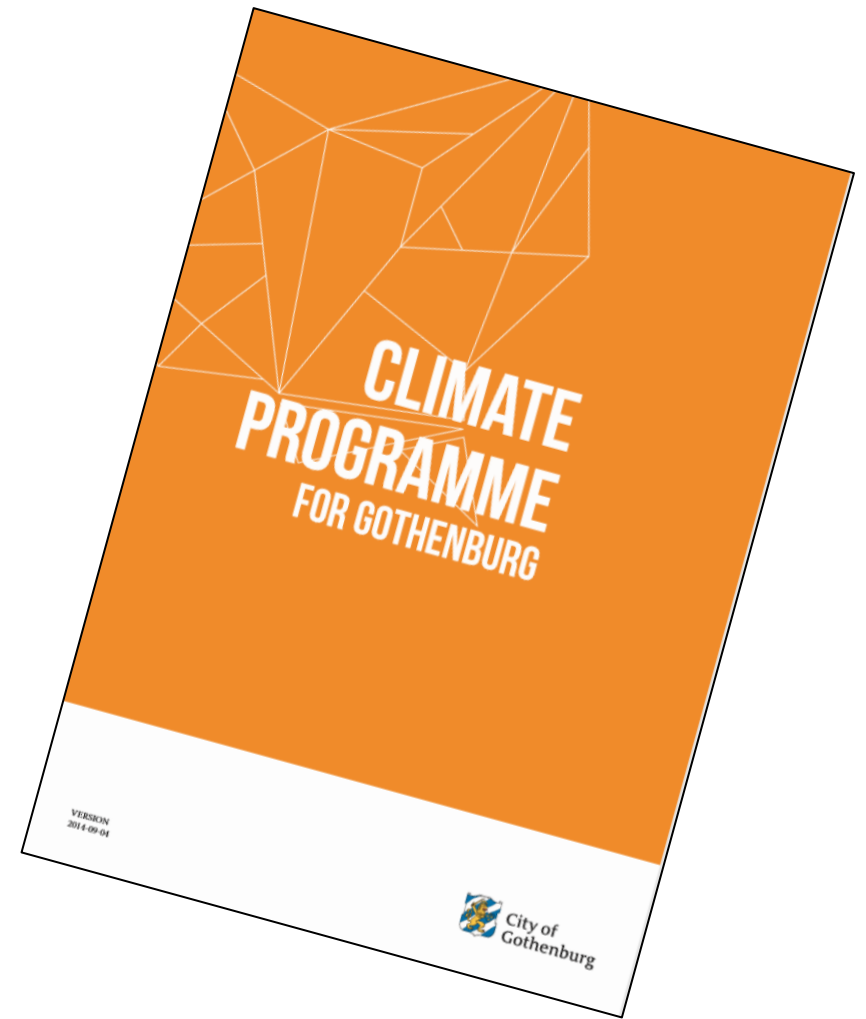
- the first fossil-free preschool

Hanna Ljungstedt  
Laholm, 24 oktober 2019

[Movie](#)

The City of Gothenburg will be one of the world's most progressive cities in addressing climate and environmental issues.

Local Premises Administration's goal:  
Net zero emissions of greenhouse gases by 2030



## **Political decision:**

”The City of Gothenburg is to build a preschool which, as far as possible, is fossil-free at all stages - from raw material extraction via transport and manufacturing to the construction site and the finished building.

Any climate impact should be compensated for.”

# How have we worked until now?

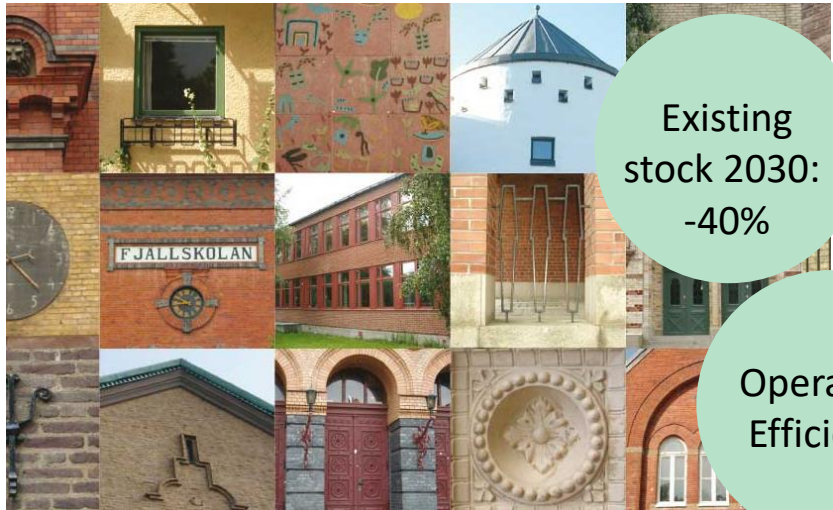


New buildings  
<45 kWh/m<sup>2</sup>/year

Optimization



Solar cells  
Zero energy  
preschool



Existing  
stock 2030:  
-40%

Smart control

Operating  
Efficiency

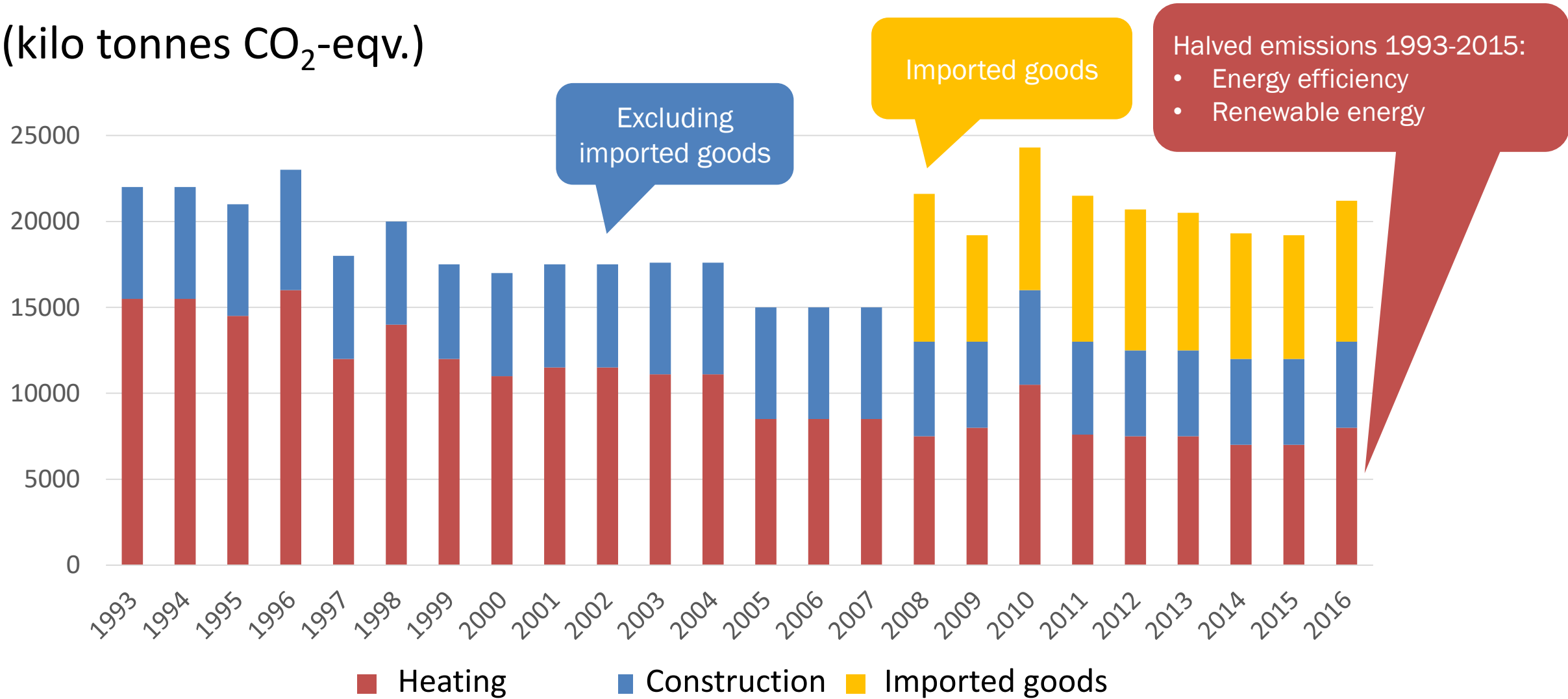


User  
interaction  
-10%

Poison free  
environment

# Sweden's construction sector – Climate impact

(kilo tonnes CO<sub>2</sub>-eqv.)





# Is it just one preschool?

2017

2018

2019

2020

2021

Pre-study

Construction project - Design & production

Innovation project – R&D, investigate and follow up

Communication & Sharing of knowledge



Fossil-free  
Gothenburg



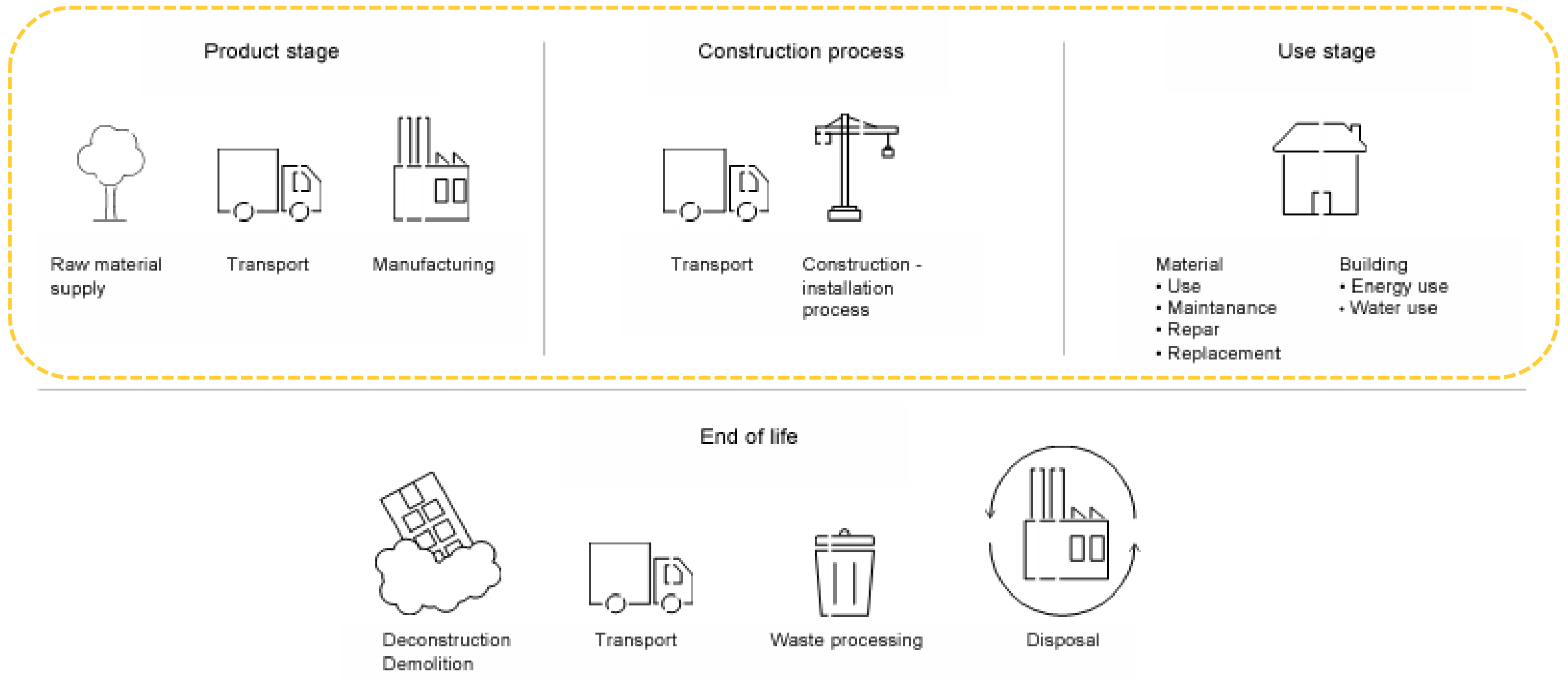
City Premises  
Administration:  
8 Billion sek 2020-2023  
Framtiden construction  
development:  
1400 apartments/year

HOPPET



Göteborgs  
Stad

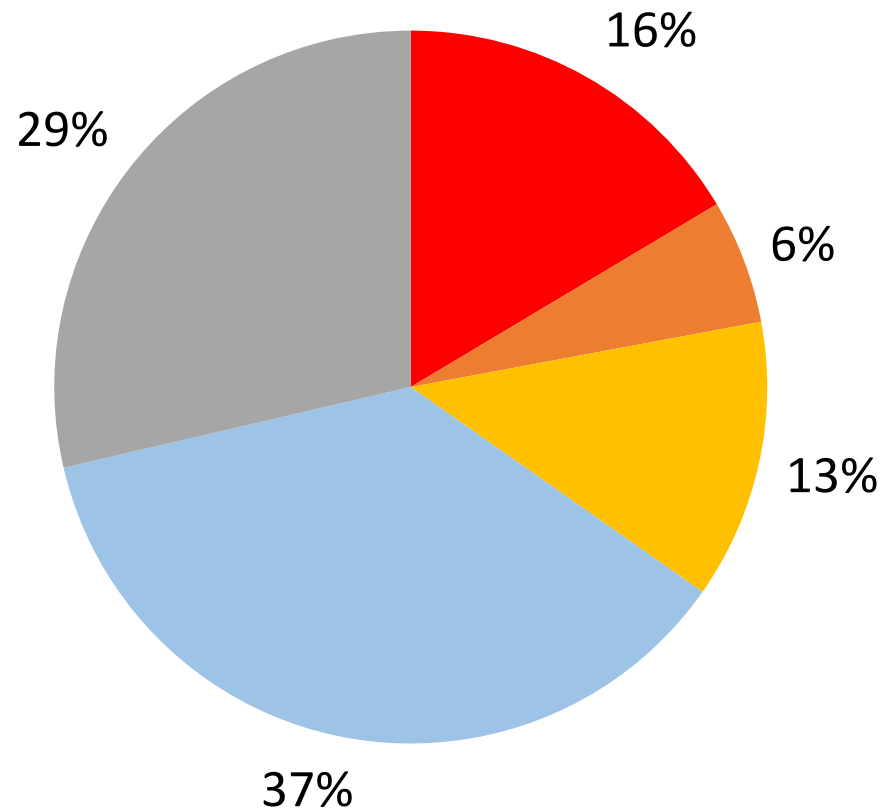
# Fossil free?



# The reference preschool



# Fossil raw material?



## Fossil raw materials (80-100%) :

Plumbing products, insulation, electrical products, fire joints, plastic films

## Fossil raw materials (50-79%) :

Pipes, cables, plumbing products, plastic films, surface layers

## Fossil raw materials (30-50%) :

Cables, surface layers, joints, paint

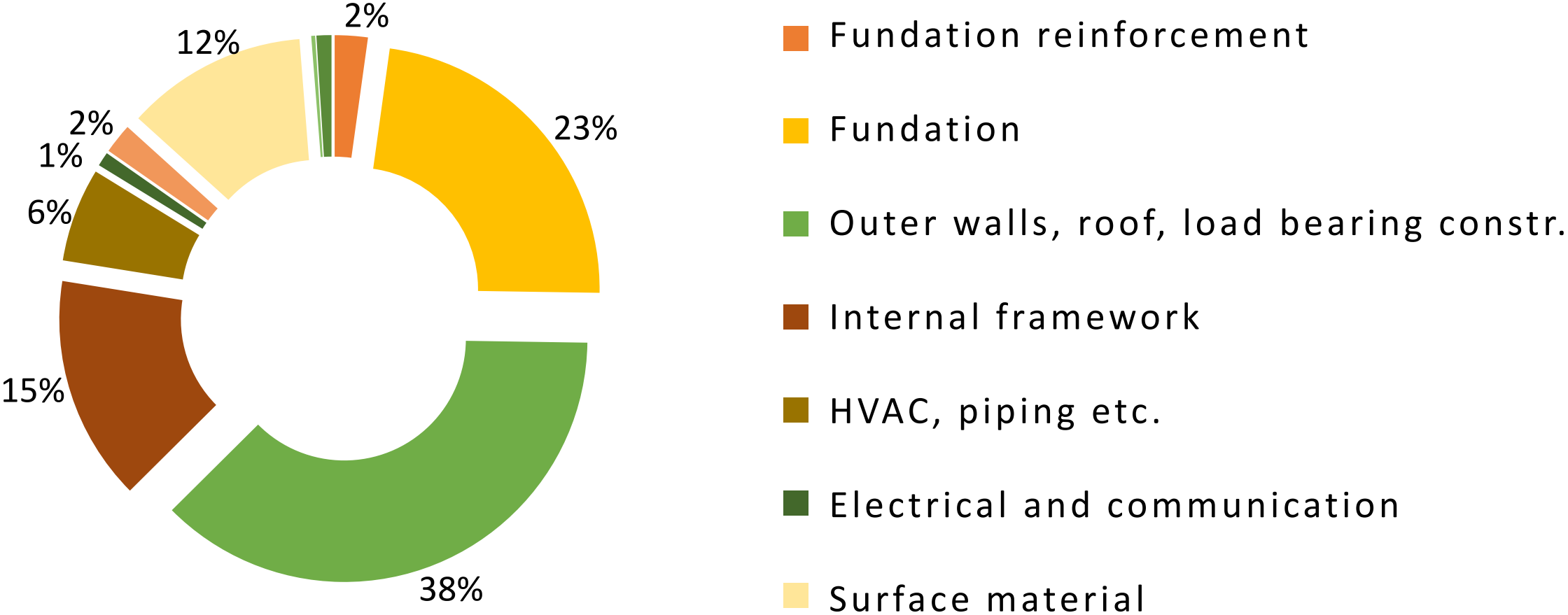
## Fossil raw materials (1-30%) :

Cables, Paint, soft joints, plumbing products, insulation, doors, windows

## Without fossil raw materials:

- 19 with metal - energy-intensive process
- 9 with cement - energy-intensive process → **CO<sub>2</sub> released**
- 3 with mineral wool - energy-intensive process

# Climate impact from a traditionally built preschool



# Strategies for fossil-free construction

**Biobased**

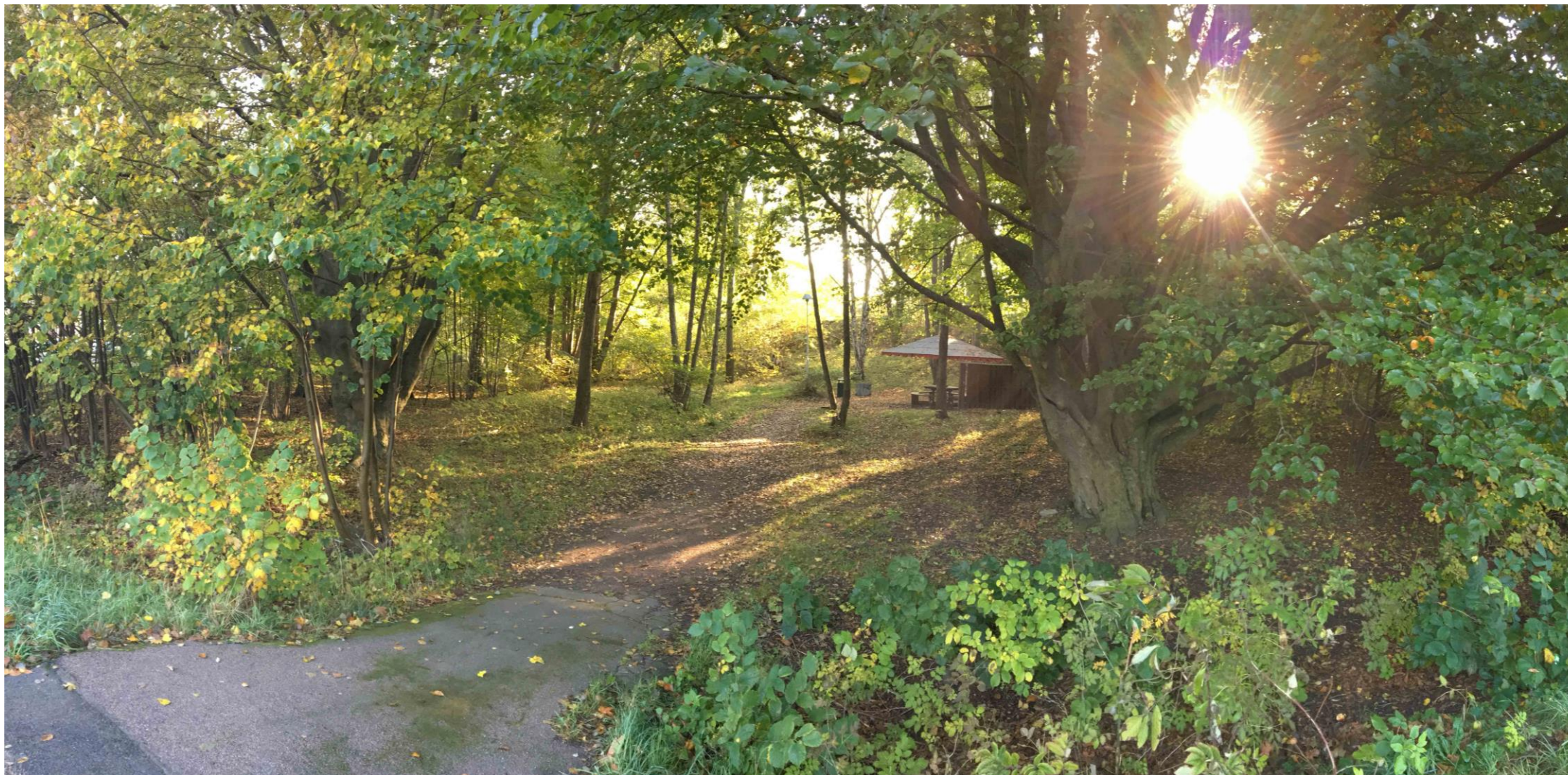
**Reused and recycled**

**Exclude and minimize**

**Life cycle perspective**

**Fossil free  
construction site**

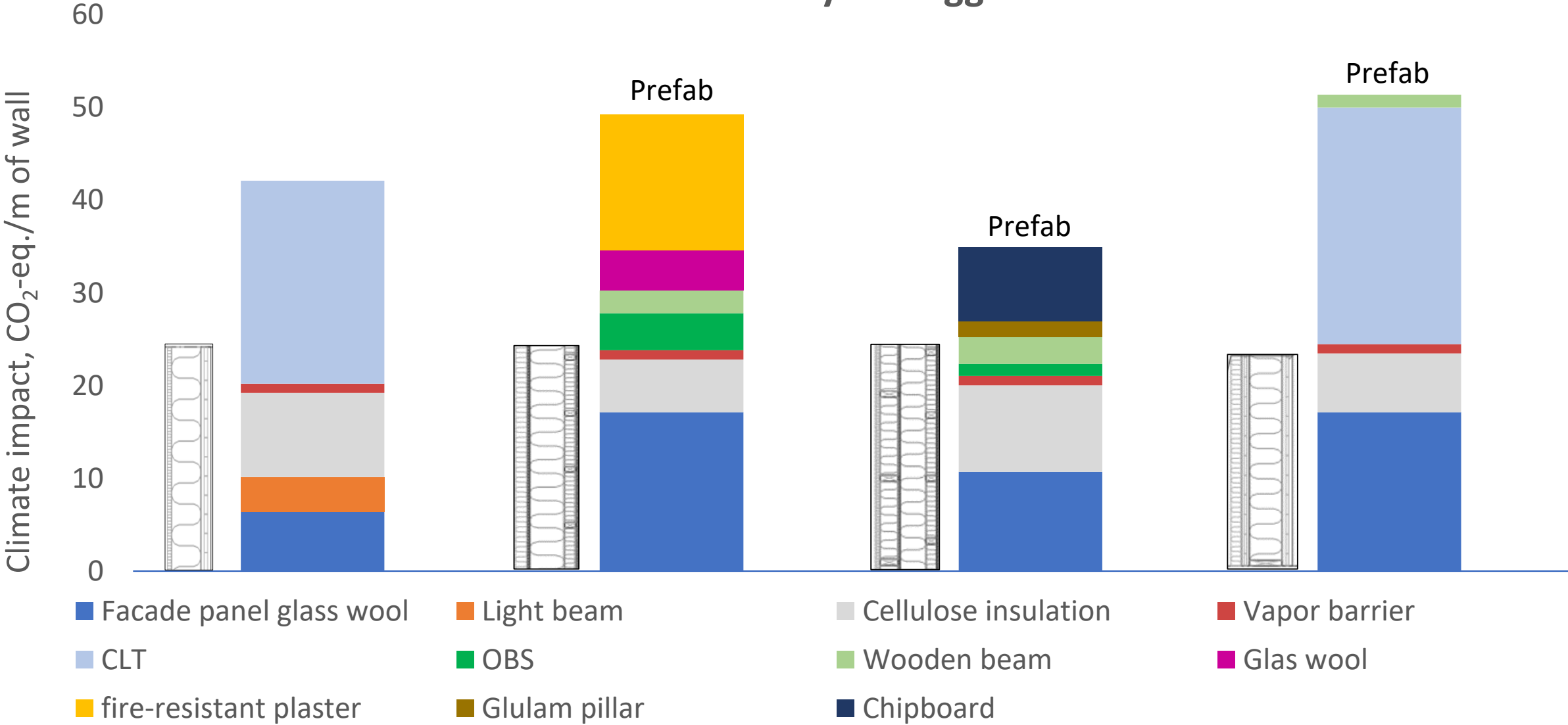




**HOPPET**



# Bärande ytterväggar



# Thanks for listening!

More information:

[www.goteborg.se/buildfossilfree](http://www.goteborg.se/buildfossilfree)

Conference paper:

[http://iopscience.iop.org/1755-1315/323/1/012159/pdf/1755-1315\\_323\\_1\\_012159.pdf](http://iopscience.iop.org/1755-1315/323/1/012159/pdf/1755-1315_323_1_012159.pdf)