

Smart Active Box

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1977



- Residual heat
- Wood chips

- 150 km
- 2700 connections (11 000 customers)
- 220 GWh

Helsingborg

DH 1964

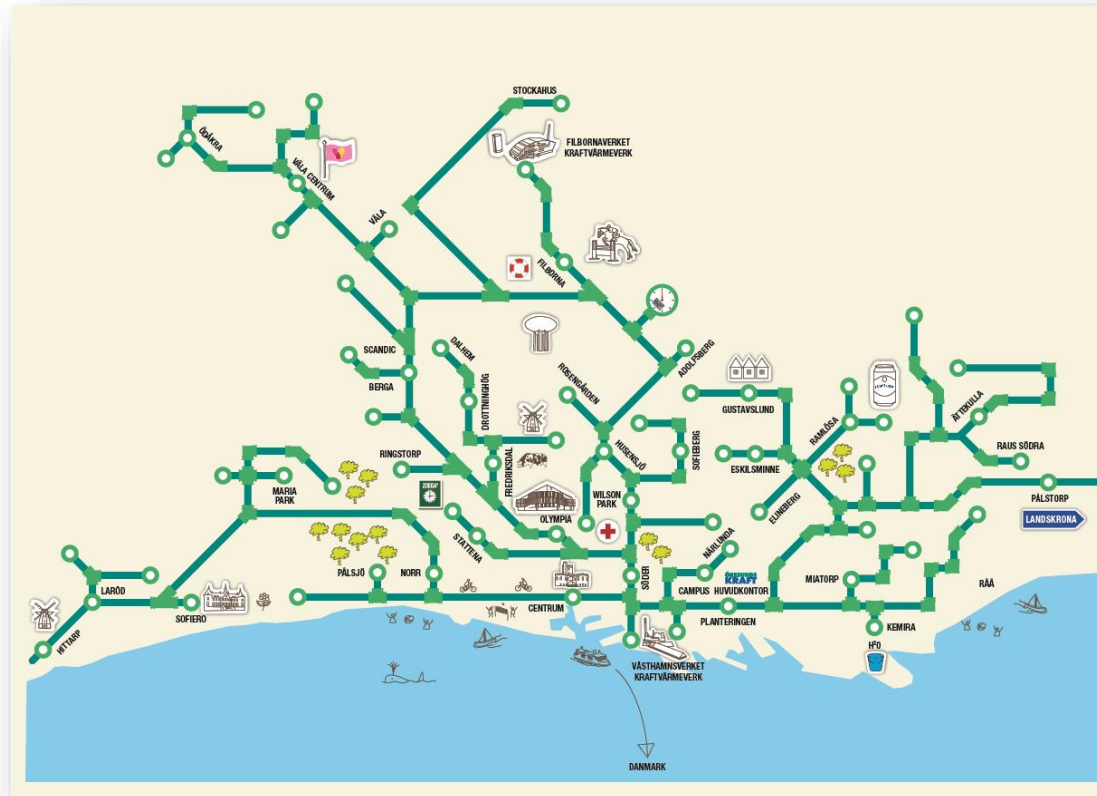
Initiative from Electricity network

Reduce chimneys



- Residual heat
- Pellets

- 11 900 connections
(60 000 customers)
- 560 km
- 1000 GWh



DC 1998

- 51 connections
- 23 km
- 15 GWh
- Absorption chiller

Goals

- **Replace the right pipe in the right time**
- **Measure is to know**

Construction types



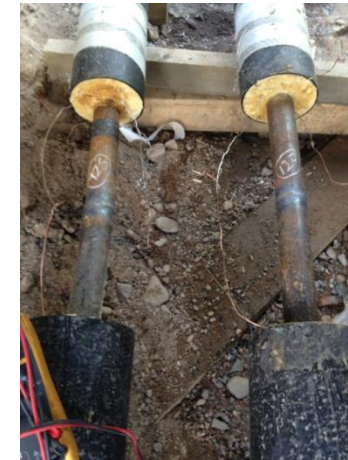
Concrete



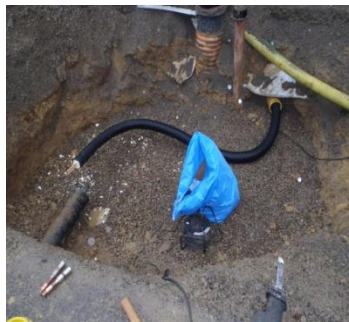
Asbestos



PVC



PEH steel



PEH copper



Aqua warm

Preventive maintenance

1968

Manual pumping



1984

Service rounds



1985

Heat camera



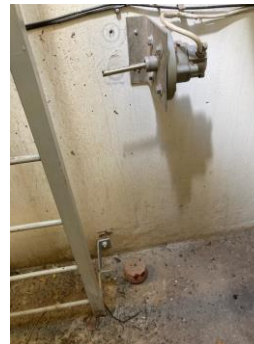
1990

Alarm wires



1992

Level switches



1998

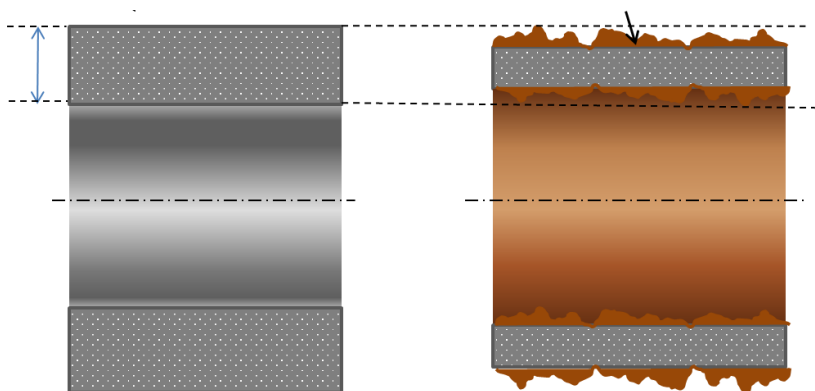
Aquasee



Preventive maintenance

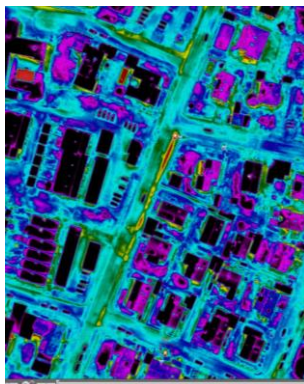
2012

Delta-thickness



2014

Flight termography



2015

Moisture tapes



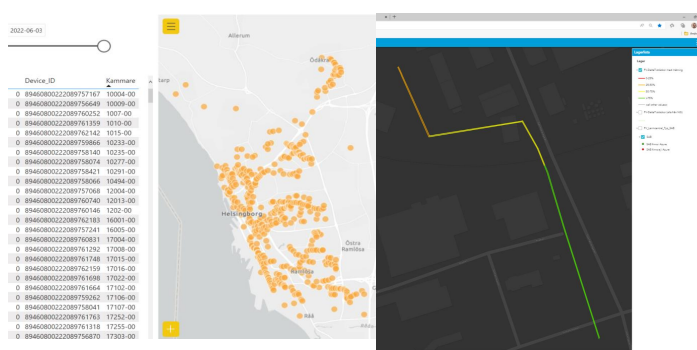
2021

SAB



2022

Decision support system



2023

SAB light

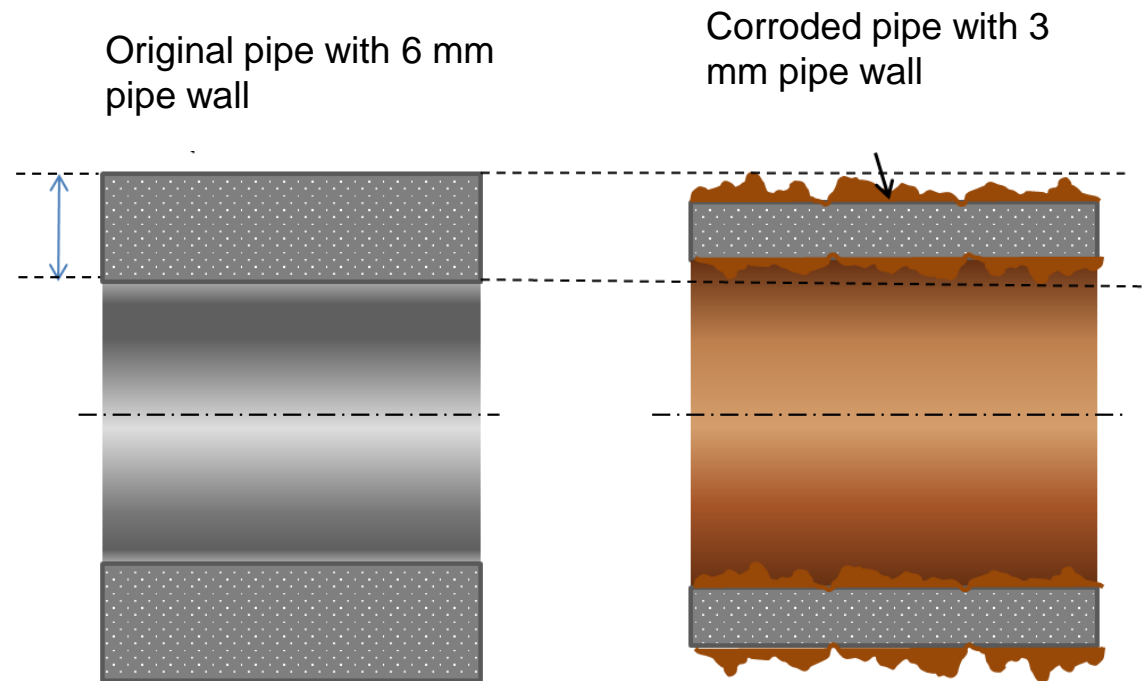
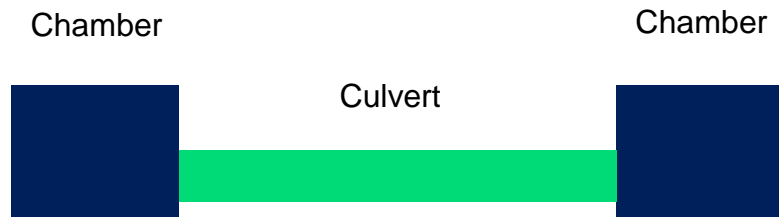


2005



2012

Delta thickness



2021

SAB Smart Active Box



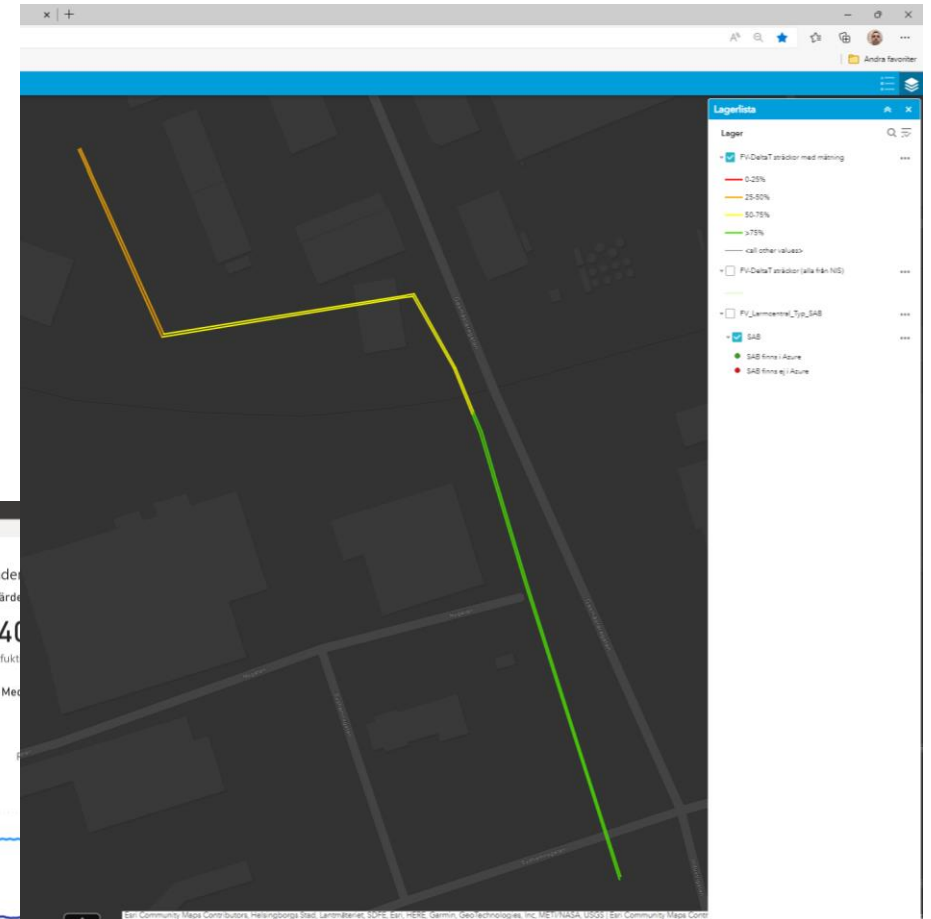
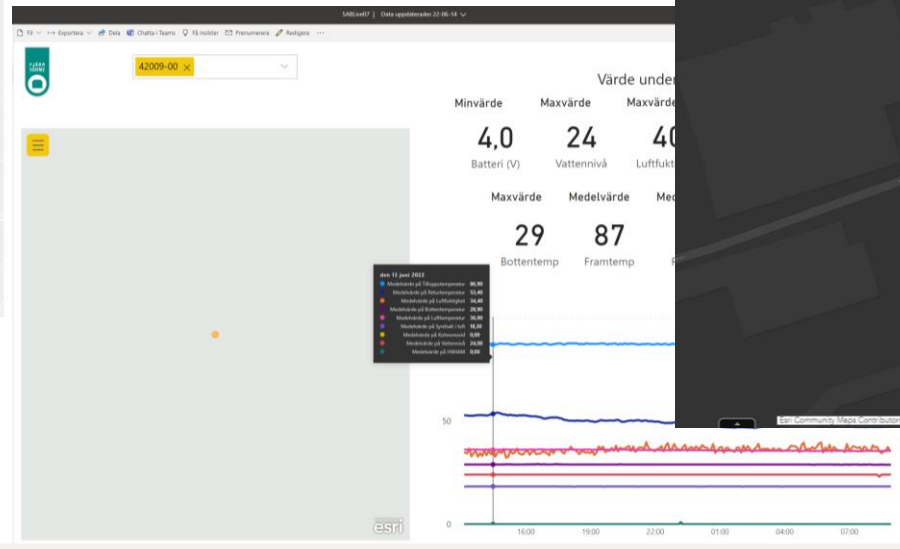
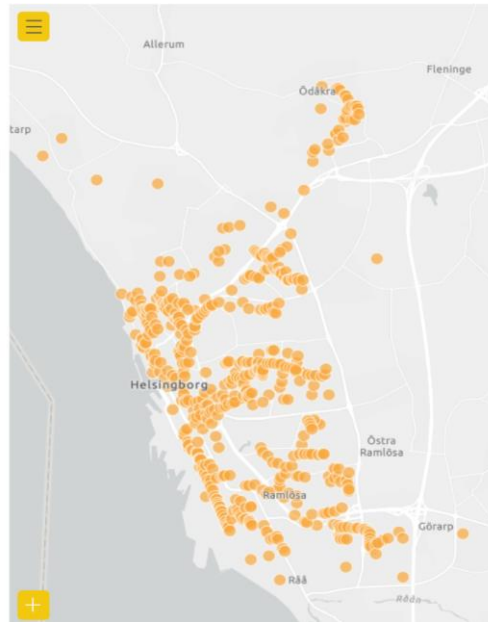
- Delta-thickness
- Leak detection
- Supply temp
- Return temp
- Room temp
- Floor temp
- Rainwater alarm
- Water level
- O2
- CO

Decision support system

2022

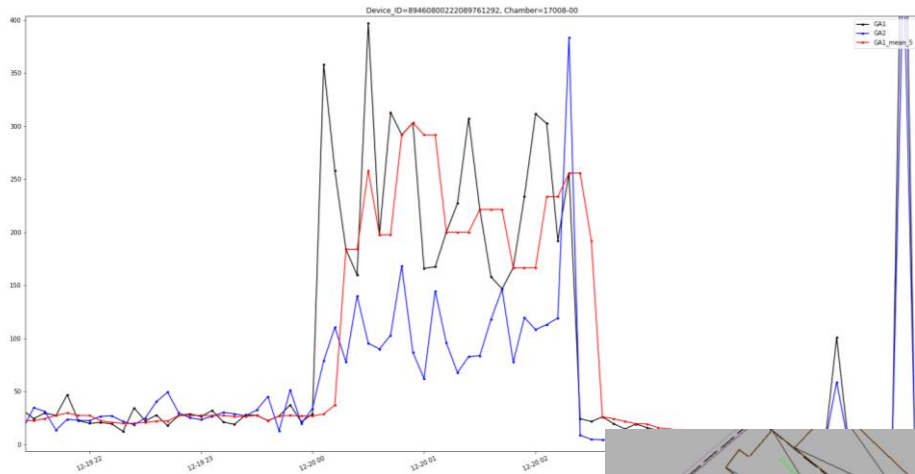
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0 89460800222089762142	1015-00
0 89460800222089759866	10233-00
0 89460800222089758140	10235-00
0 89460800222089758074	10277-00
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0 89460800222089757241	16005-00
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0 89460800222089761292	17008-00
0 89460800222089761748	17015-00
0 89460800222089762159	17016-00
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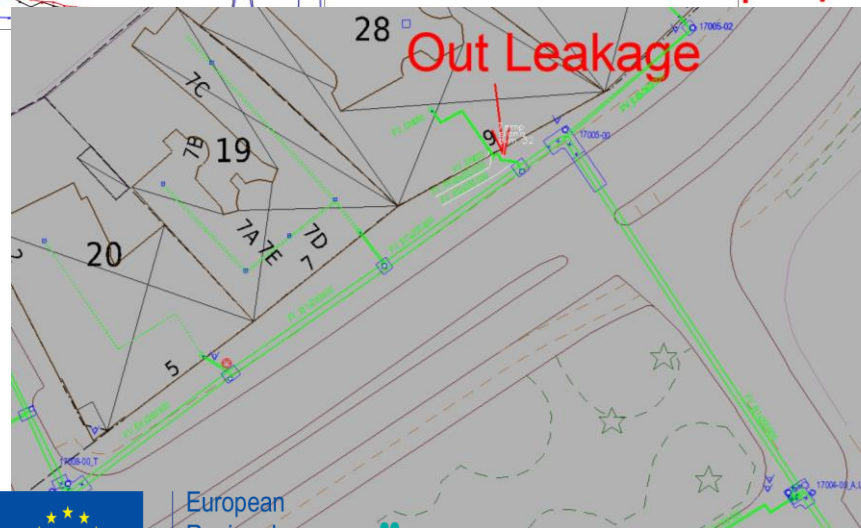
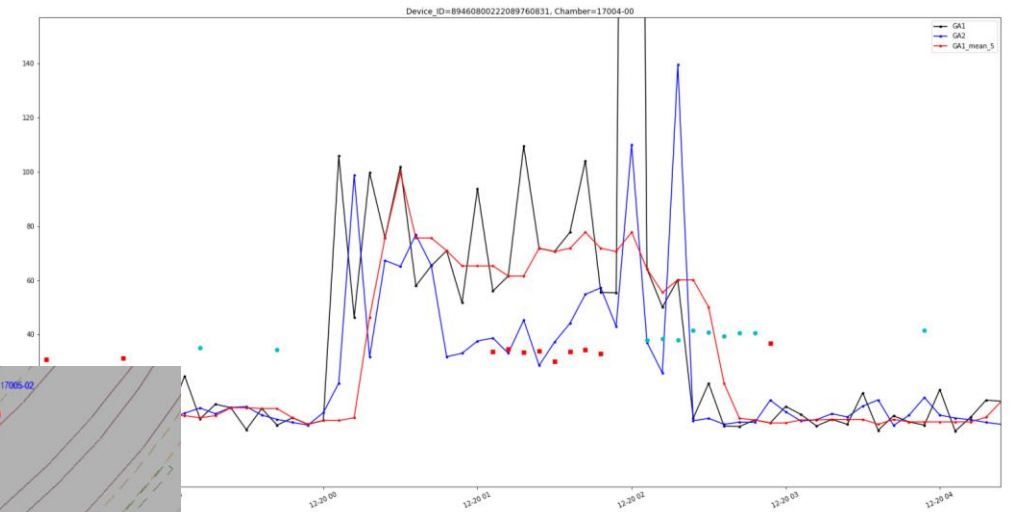


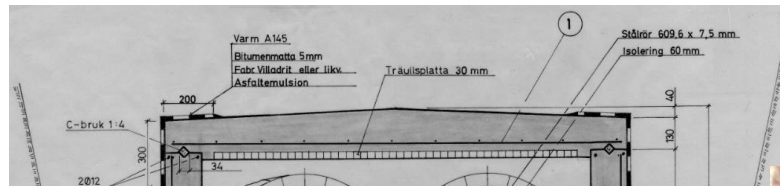
Also leak detection

17008-00



17004-00





11 km

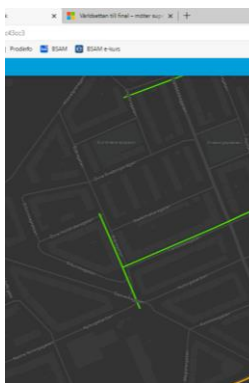


66 000 000



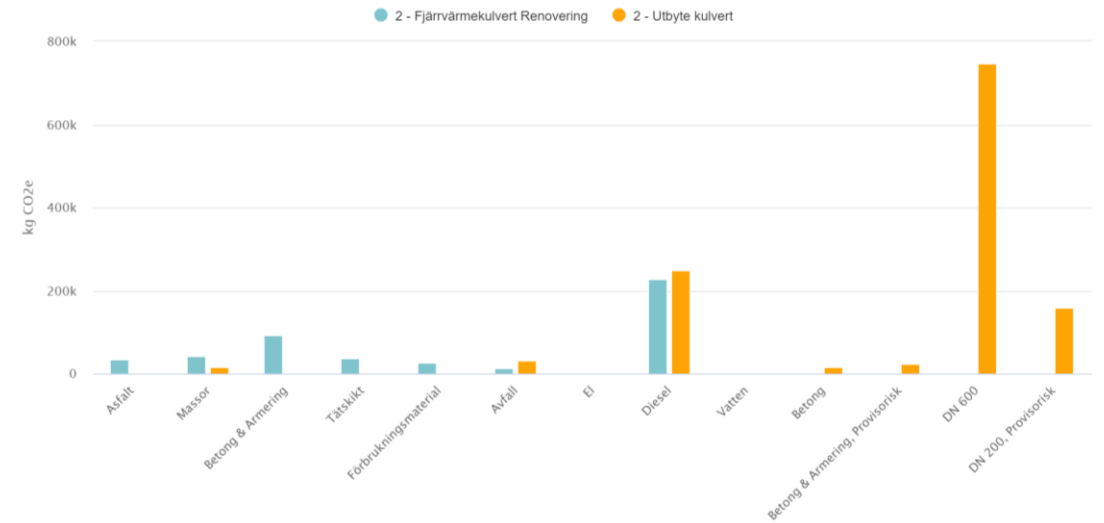
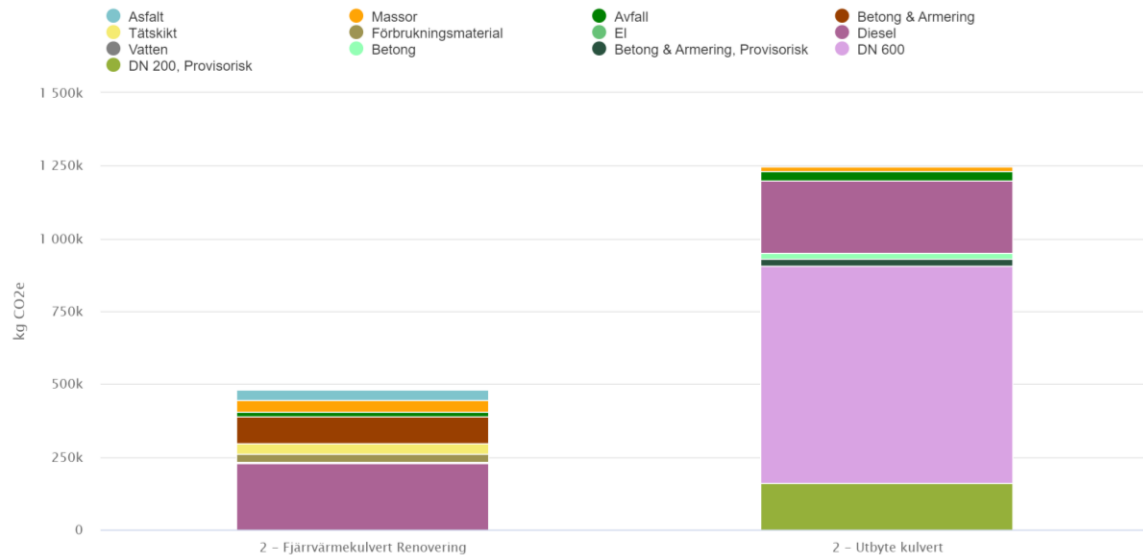
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0 894608022089760146	1202-00
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0 894608022089761763	17252-00
0 894608022089761318	17253-00
0 894608022089756870	17303-00



Sustainability

- CO2 equivalents
- Same place
- Pipes are a big enviromental load



The bitterness of low quality
remains long after the sweetness
of low price is forgotten

Smart Active Box

Magnus Ohlsson

