SGBC NollCO$_2$ certification

Net zero carbon certification for new buildings developed by Sweden Green Building Council and its members.

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Why NollC0$_2$-certification of buildings?

In 2015:
- Sweden's total domestic greenhouse gas emissions were 53,461 thousand tonnes CO$_2$e
- Sweden's total emissions from the construction and real estate sector were 20,400 thousand tonnes of CO$_2$e

Sweden aims to achieve net zero carbon by 2045
NollCO2 is an add-on certification

NollCO2

OR

BREEAM® SE

OR

MILJÖ BYGGNAD
NollCO\textsubscript{2} - Net Zero Impact Model

- Embodied carbon
- Operational carbon
- Installation of renewable electricity
- Offset programs

- A1-A5 Limit 300 kgCO\textsubscript{2}e/m\textsuperscript{2}

Greenhouse gas emissions in the project

Reductions or uptake of greenhouse gas emissions outside the project
Process step 1-4

1. Reduction target
   1.1 Calculate project baseline
   1.2 Verify that limit is possible to reach

2. Reduce embodied carbon
   2.1 Embodied carbon calculation
   2.2 Early dialogue with architect, manufacturers and entrepreneurs

3. Reduce operational carbon
   3.1 Operational carbon calculation
   3.2 Dialogue with engineers

4. Renewable electricity (RES-E) production
   4.1 RES-E production (and economics) calculation
   4.2 Offset calculation
Process step 5-7

5. Offset remaining embodied carbon
   - 5.1 Choose offsetting strategy
   - 5.2 Compensate within 5 years after finished building

6. Offset remaining operational carbon
   - 6.1 Choose offsetting strategy
   - 6.2 Compensate yearly using actual energy usage values

7. Verify and report
   - 7.1 Verify for finished building
   - 7.2 Report 2:nd, 5:th year and thereafter each 5:th year
Lidl Visby
Sweden’s First Climate-Neutral Building
Lidl International

LIDL US
June 15th 2017

30 countries
10,500 stores
260,000 employees
Lidl Sweden

• Lidl aims to be Sweden's leading sustainable retail chain
• Transforming the image of Lidl by highlighting its high sustainability aims and achievements
• The long-term goal – attract future employees as well as the conscious consumers of today and the future
Lidl stores’ sustainability certifications

- Lidl Växjö
  BREEAM Outstanding!

- Winners SGBC
  Awards 2018!

- Winners BREEAM
  Awards 2017!

- Lidl Visby
  Swedens first climate neutral building!
Lidl strategy for NoIllCO2 store in Visby

Material
- Mat.
- Calculations
- Specification etc
- Materials with low CO2-emmision
- Decrease material-use

Energy
- Energy supply
- Onsite production
- Technical system
- Re-use energy
- Decrease energy-use

CO\textsubscript{2}e from material and construction phase
- kgCO\textsubscript{2}e/m\textsuperscript{2}
- Climate compensation

CO2e from energy-use during operation
- kgCO2e/m2
- Climate compensation (solar PV)
Lidl Visby comparison

kg CO2e / m2

Lidl Visby
NollCO2 limit
Reference building
Lidl Visby – CO2 emissions per building element

- Concrete: 43%
- EPS insulation: 11%
- Rebar: 7%
- Glazing: 33%
- Gypsum Board: 7%
- Cross-Laminated Timber: 7%
- Fibreglass Insulation: 7%
- Masonry: 7%
- Structural Steel Members: 7%
- Plywood
- Waterproofing
- Steel Plate
- Glulam Beams
- Fasteners
- Other
Thank you!

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