



Delta Development

Cradle to Cradle® and Whole Life Carbon

WE ARE BUILDING THE FUTURE WE WANT TO LIVE.



Future ForeverTM

This is our manifesto. It's a promise to the people we share our planet with, the investors and clients we partner with and the places our developments change. At the heart of everything we undertake, it embeds our commitment to building a better world, where people and the places we live and work, thrive, now and into the future.

We build for change

We build-in reusability, creating modular, dismantable buildings and fixtures, according to the Cradle to Cradle philosophy and circular principles. We view our developments as 'material banks' for the future – the legacy we leave will one day become the raw materials for a new generation to use in building their world.

We build for people

We prioritise the human experience not only of the building, but beyond, designing for the neighbourhoods that surround our developments and everyone involved in supply chain, production and build. There should be no human price for our work.

We will find a better way

Don't tell us it can't be done – it is always possible to make something better with innovation, creativity or technology. To us, better means enduring, adaptable, green, recyclable and fit not only for purpose, but pleasure: when places and the experiences they enable are enjoyed, they endure.

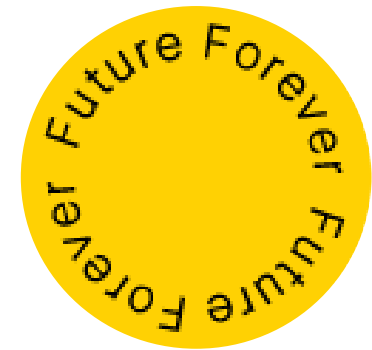


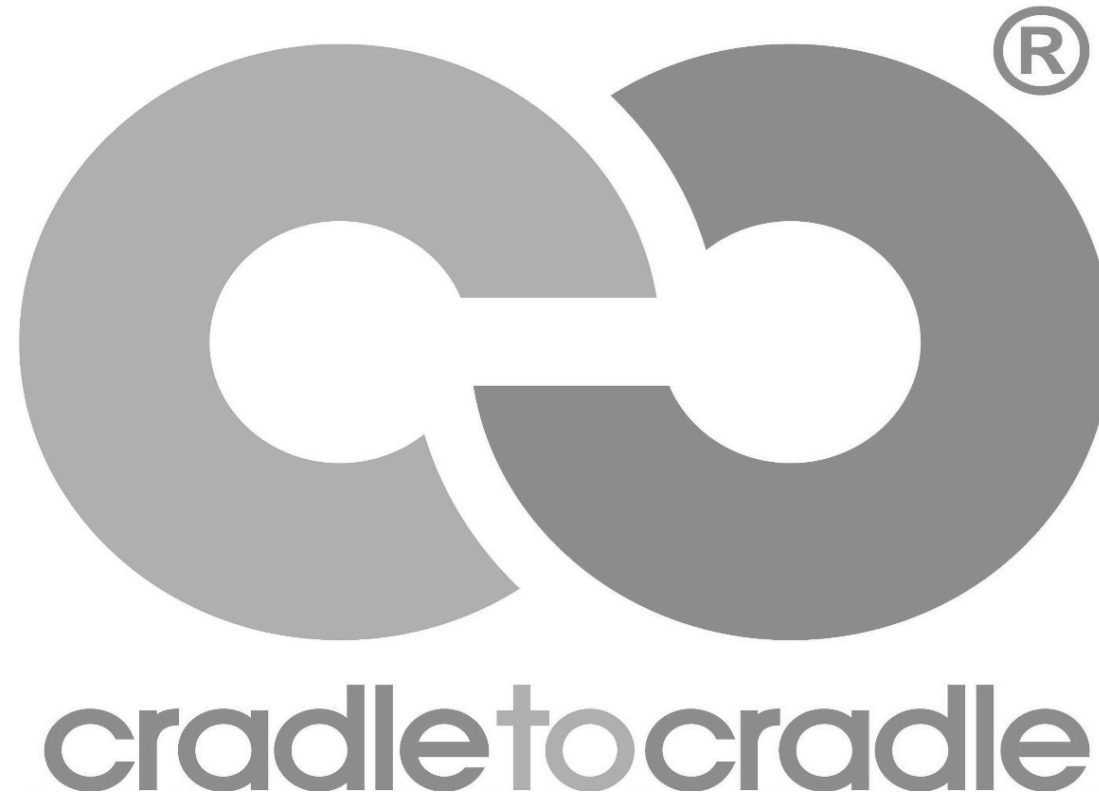
We own
every choice

We're going to have to stand by our decisions for a long time, so we aim for every project and its impact to be something we can be personally and professionally proud of, and answerable for.

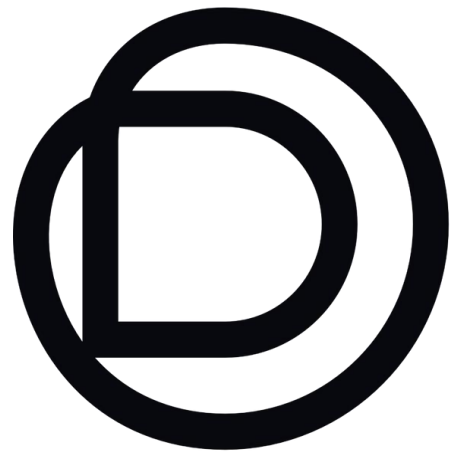
We'll share and
collaborate to build
a better future

We find ways to share knowledge, engage in conversations and contribute to the global movement for inventive, sustainable development, circular principles and progressive practice.





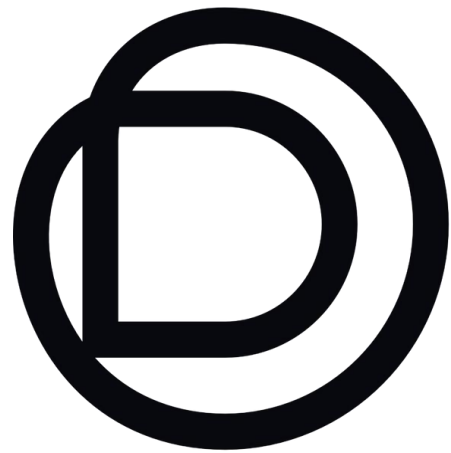




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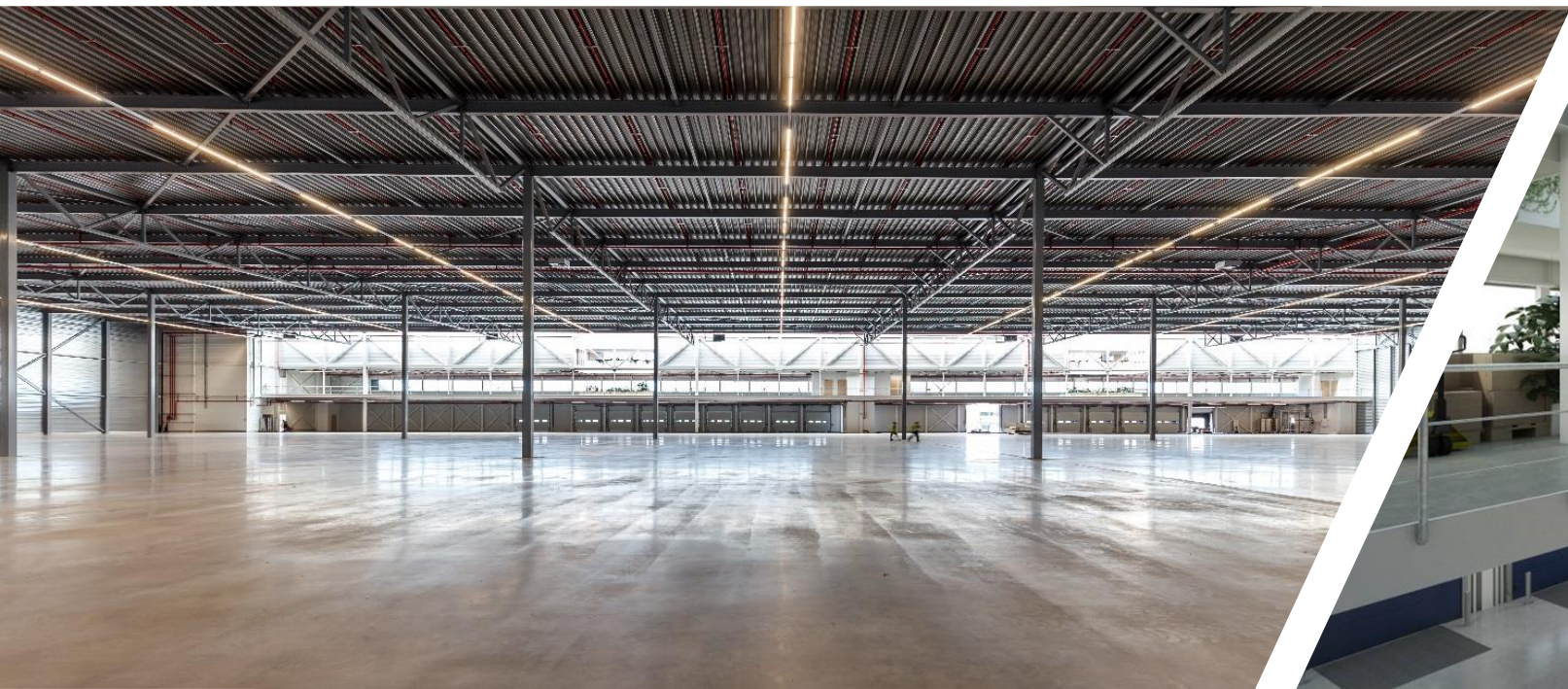
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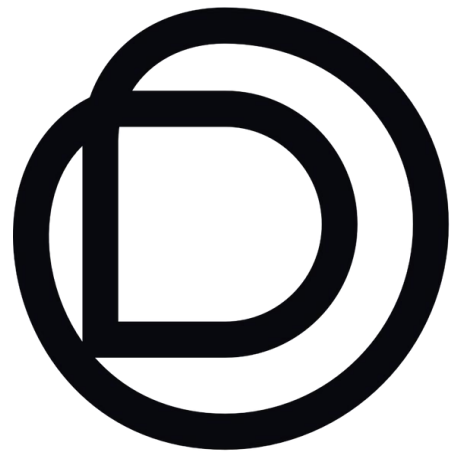




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LOGISTICS: FOKKER LOGISTICS PARK (2016)





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Development

LOGISTICS: ABC SQUARE & HELLOWORLD (2021 - 2023)





Reclame



Energie label utiliteitsbouw	Registratienummer 557909727	Datum registratie 29-08-2022	Geldig tot 04-07-2032	Status Definitief
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Dit gebouw heeft energielabel **A+++++**



Isolatie	Installaties	Hoofdsysteem	Verbetering aanbevolen?
Gevels: ++	Verwarming: Warmtepomp		nee ja
Gevelpanelen: +/- ++	Warm water: Elektrische boiler		nee ja
Daken: ++	Ventilatie: Balansventilatiesysteem		nee ja
Vloeren: + ++	Koeling: Compressiekoeling		nee ja
Ramen: + ++	Verlichting: 10,4 W/m ² gemiddeld geïnstalleerd vermogen		nee ja
Buitendeuren: +/- ++	Zonnepanelen: 531.286 Wp		nee ja

Dit gebouw wordt niet verwarmd via een aardgas aansluiting

Aandeel hernieuwbare energie: **807,2 %**

Over dit gebouw

Adres
Airborne Avenue 77
2133LV Hoofddorp
BAG-ID: 0394010001016613

Bouwjaar
2020

Detailaanduiding

Compactheid
1,09

Gebruiksfunctie
100% Kantoor

Gebruiksoppervlakte
527 m²

Opnamedetails

Naam
R.J. In 't Veld

Examennummer
881896

Certificaathouder
EP labels & advies B.V.

Inschrijfnummer
EPG2020-54

KvK-nummer
82775354

Soort opname
Detailopname

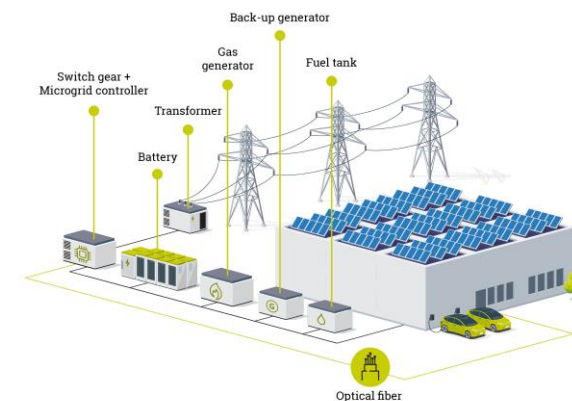
Certificerende instelling
EPG-Certificering



BREEAM[®] EXCELLENT

TOTALE BREEAM-NL SCORE INCL. EP
BREEAM-NL KWALIFICATIE **78,15%**
★★★★

MPG **0,319**





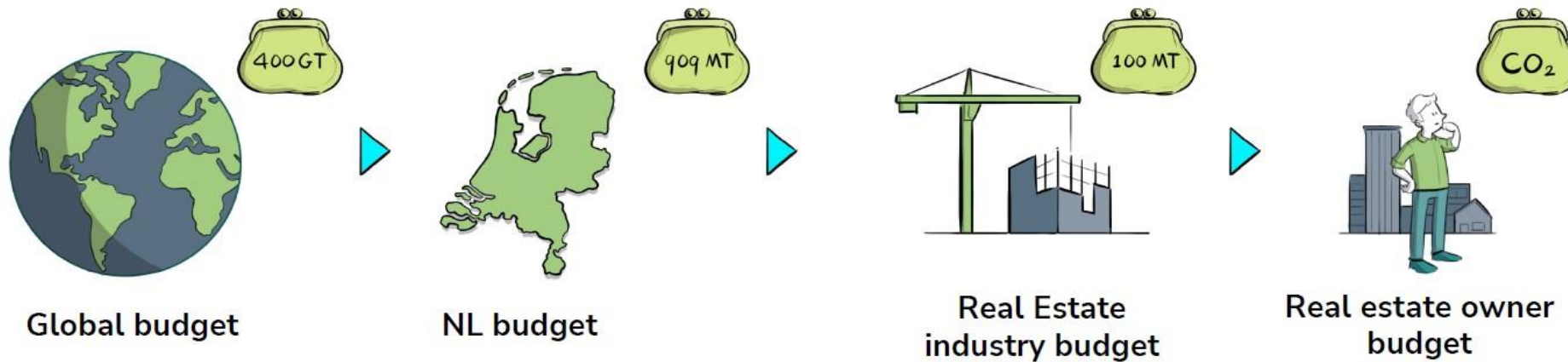
WiseBrick enables developers & building owners to define, benchmark and optimize the decarbonization pathway of their real estate towards and beyond Net Zero

WiseBrick brings to the tip of your fingers actual, actionable and certified insights for the whole life carbon performance of your building or portfolio of buildings ... at any moment in the lifecycle, including the usage phase.

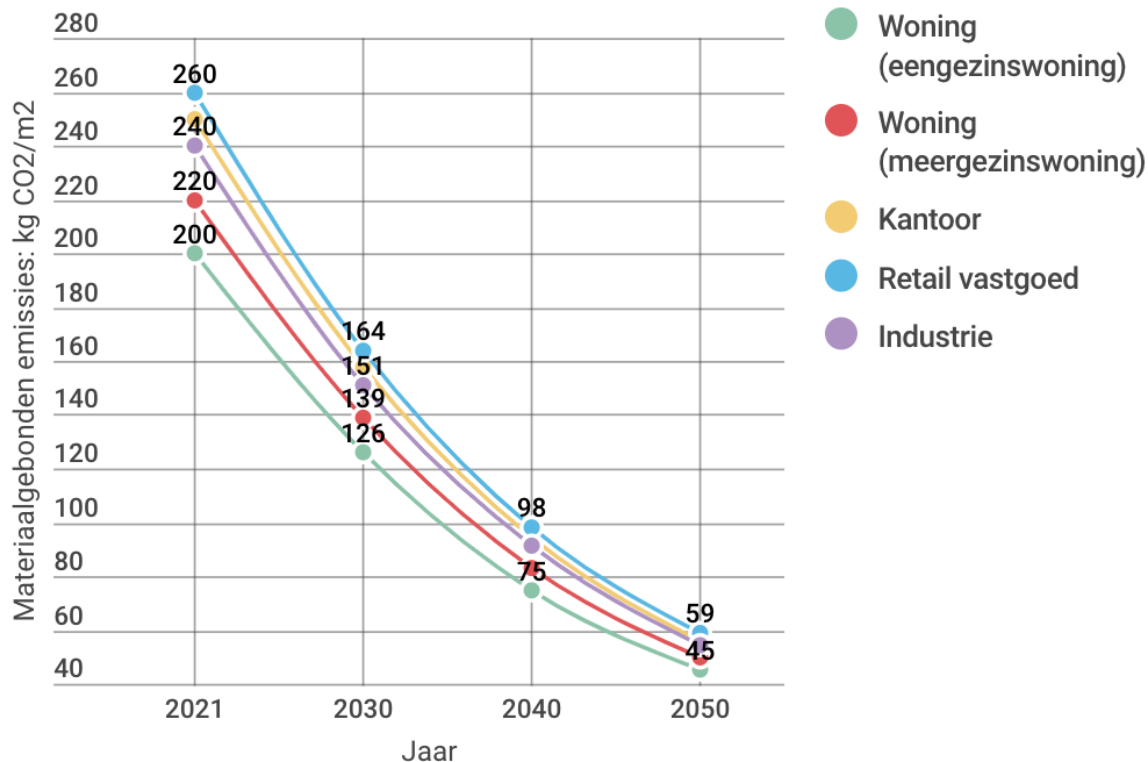


We have a limited carbon budget till 2050 to be able to achieve Net Zero Carbon, the most critical Sustainability Development Goal

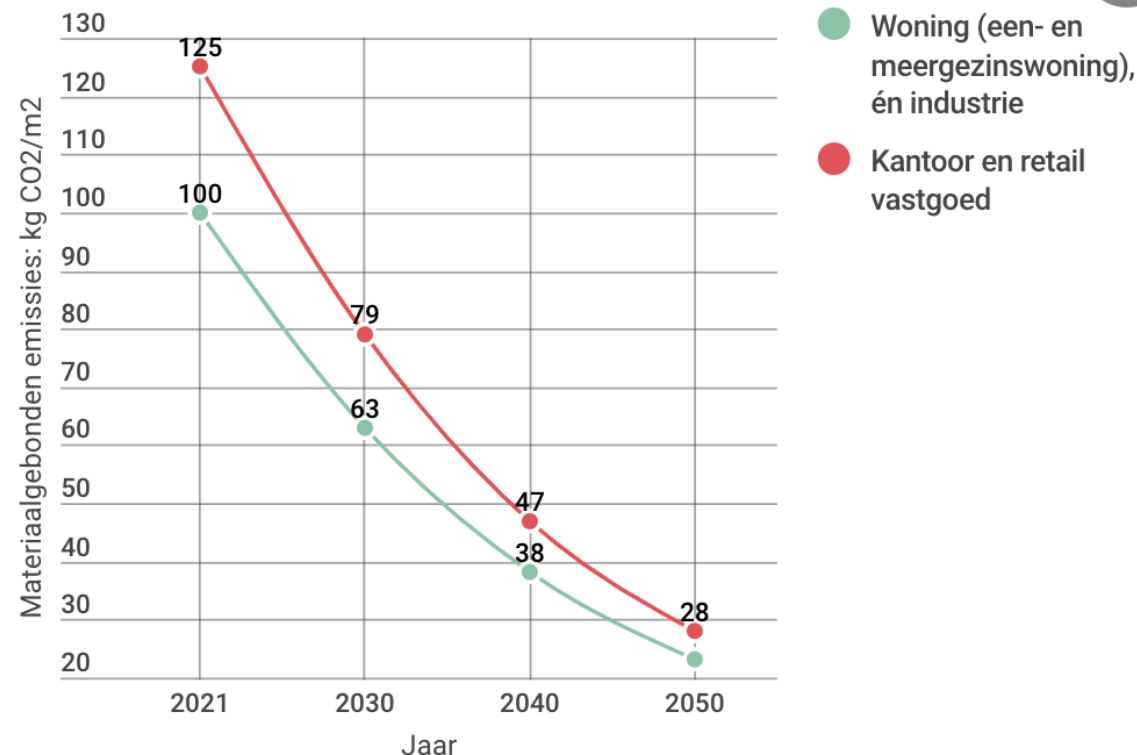
The real estate industry in NL has only 100 Mt CO₂e to spend for the next 28 years, to ensure they are “Paris proof”.



Grenswaarden materiaalgebonden emissies voor nieuwbouw



Grenswaarden materiaalgebonden emissies voor renovatie



The real estate carbon budget is translated to specific variable embodied carbon limits per m2 per year for every real estate owner or occupant, based on building type they own or use.



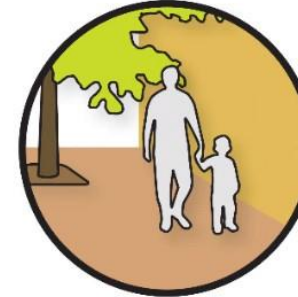
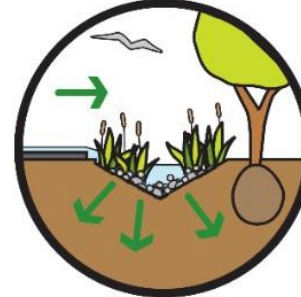
**USE HEALTHY AND SAFE
MATERIALS IN BIOLOGICAL AND
TECHNICAL NUTRIENT CYCLES**



USE RENEWABLE ENERGY
OPTIMIZE ENERGY USE AND INTEGRATE
CLEAN ENERGY PRODUCTION



**PROMOTE COMMUNITY HEALTH
AND WELL-BEING**



**PROMOTE REVERSE LOGISTICS,
CONTINUOUS, ENDLESS RE-
USE, AND THE CREATION OF
NEW BUSINESS MODELS**

**TREAT WATER AS A PRECIOUS
RESOURCE**

PROTECT, IMPROVE, OR RESTORE
WATER QUALITY, HYDROLOGY, AND KEY
NATURAL HERITAGE FEATURES AND THEIR
FUNCTIONS.

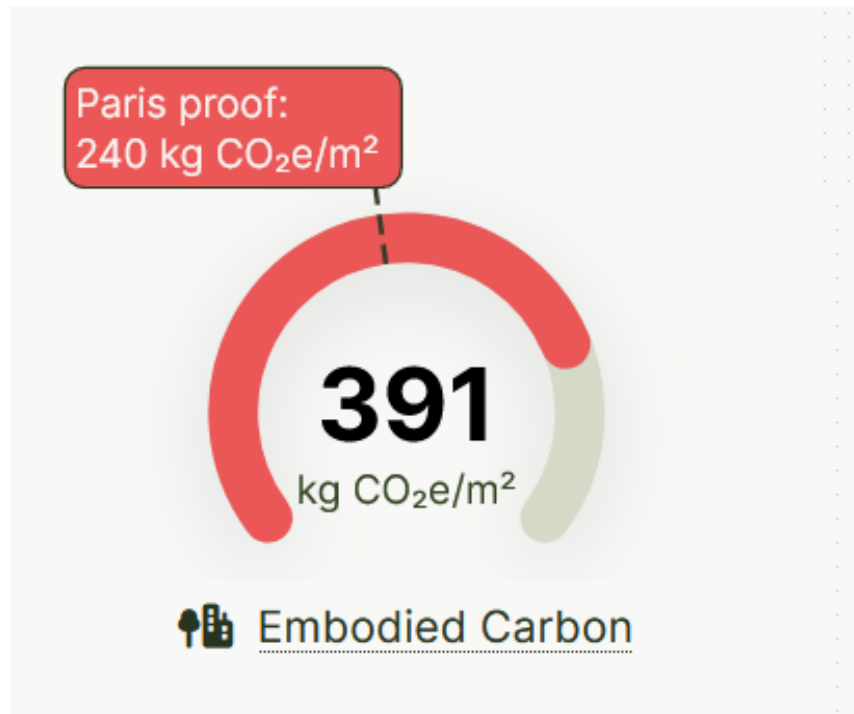


STIMULATE BIODIVERSITY

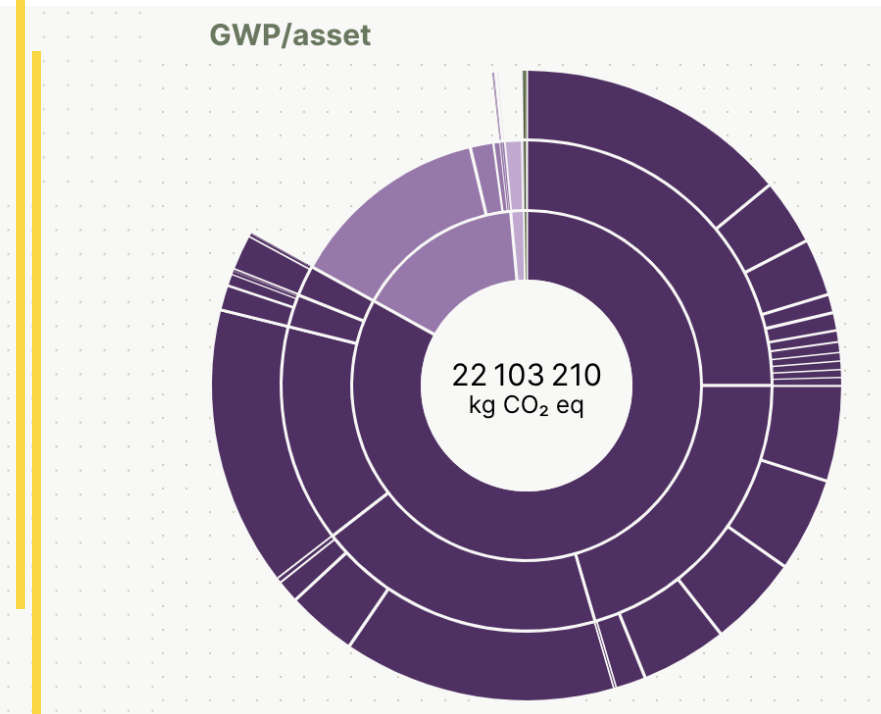
As it is, Cradle to Cradle measures have a positive effect on Whole Life Carbon:

- The selection of C2C and particularly bio-based materials has a positive influence on embedded carbon.
- Design for disassembly and circularity keeps embedded carbon longer in flow and leads to lower Whole Life Carbon.
- The use of renewable energy lowers or eliminates operational carbon.
- The stimulation of biodiversity and particularly building green roofs and facades increase the sequestration of carbon.

Embodied Carbon impact [m² / year]



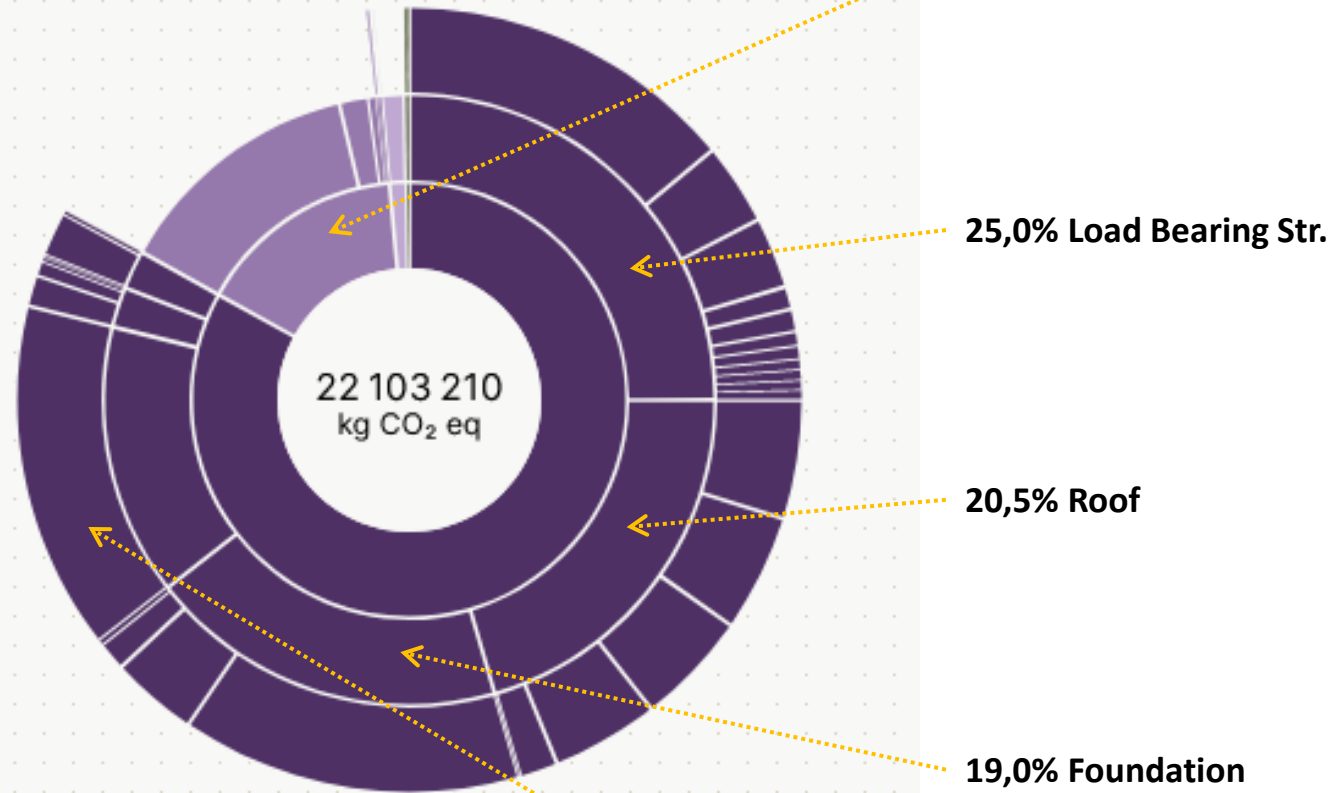
Total Embodied Carbon impact [building & terrain]



- » LCA Category III data, without 30% uplift
- » A journey ... data input and validation in progress
- » Scenarios and insights based on innovative and holistic view on CO₂e

Embodied Carbon

GWP/asset



Asset	kg CO ₂ eq
Magazijngebouw	18 353 643
Kavel	3 426 113
Bouwwerk (Wateropslagtank)	281 747
other	41 706

Concrete ...

the “lion share” of carbon impact!

- 64% of applied building elements contain (embedded) concrete
- Reducing the cement-mix in concrete could lower the total Embodied Carbon impact with **6.000 tons of CO₂e!**



Warehouse

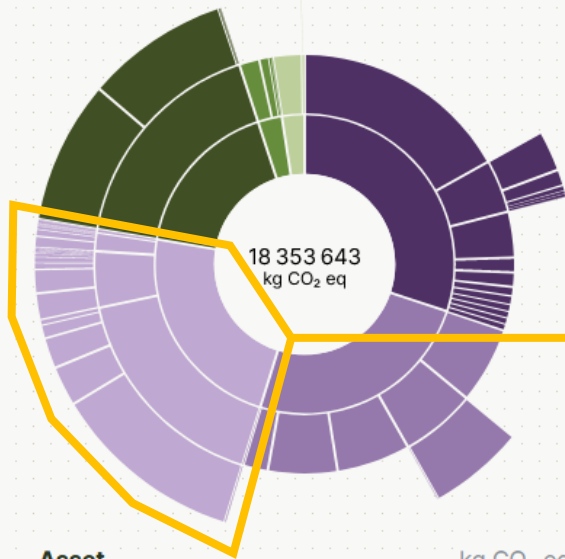
Foundation

Foundation Pile(s)

Embodied Carbon



GWP/asset

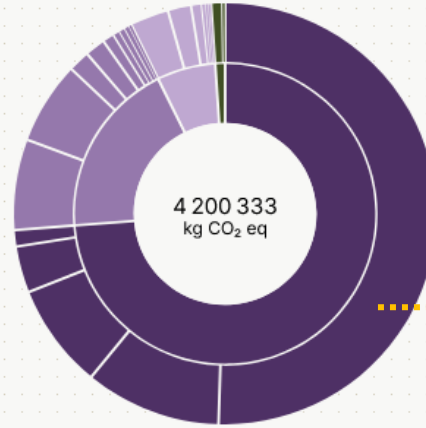


Asset	kg CO ₂ eq
Draagconstructie	5 523 769
Dak	4 532 368
Fundering	4 200 333
other	4 097 174

Embodied Carbon



GWP/asset

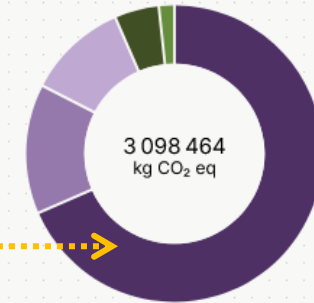


Asset	kg CO ₂ eq
Cluster (Funderingspalen)	3 098 464
Cluster (Poeren)	794 310
Cluster (Funderingsbalken)	263 367
other	44 191

Embodied Carbon

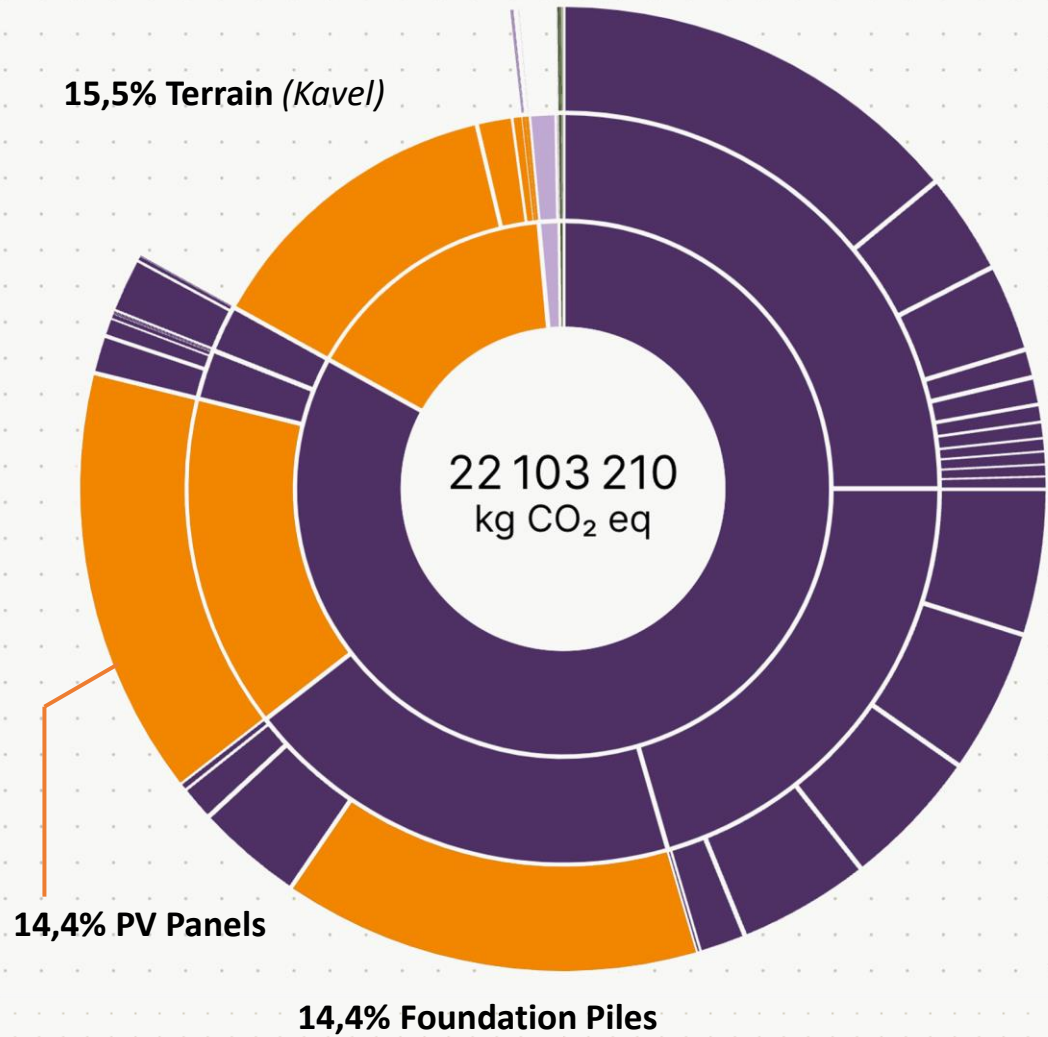


GWP/asset



Asset	kg CO ₂ eq
Funderingspaal rond (180 [mm] v...	2 121 234
Funderingspaal vierkant 290×290...	437 471
Funderingspaal vierkant 350×350...	337 697
other	202 062



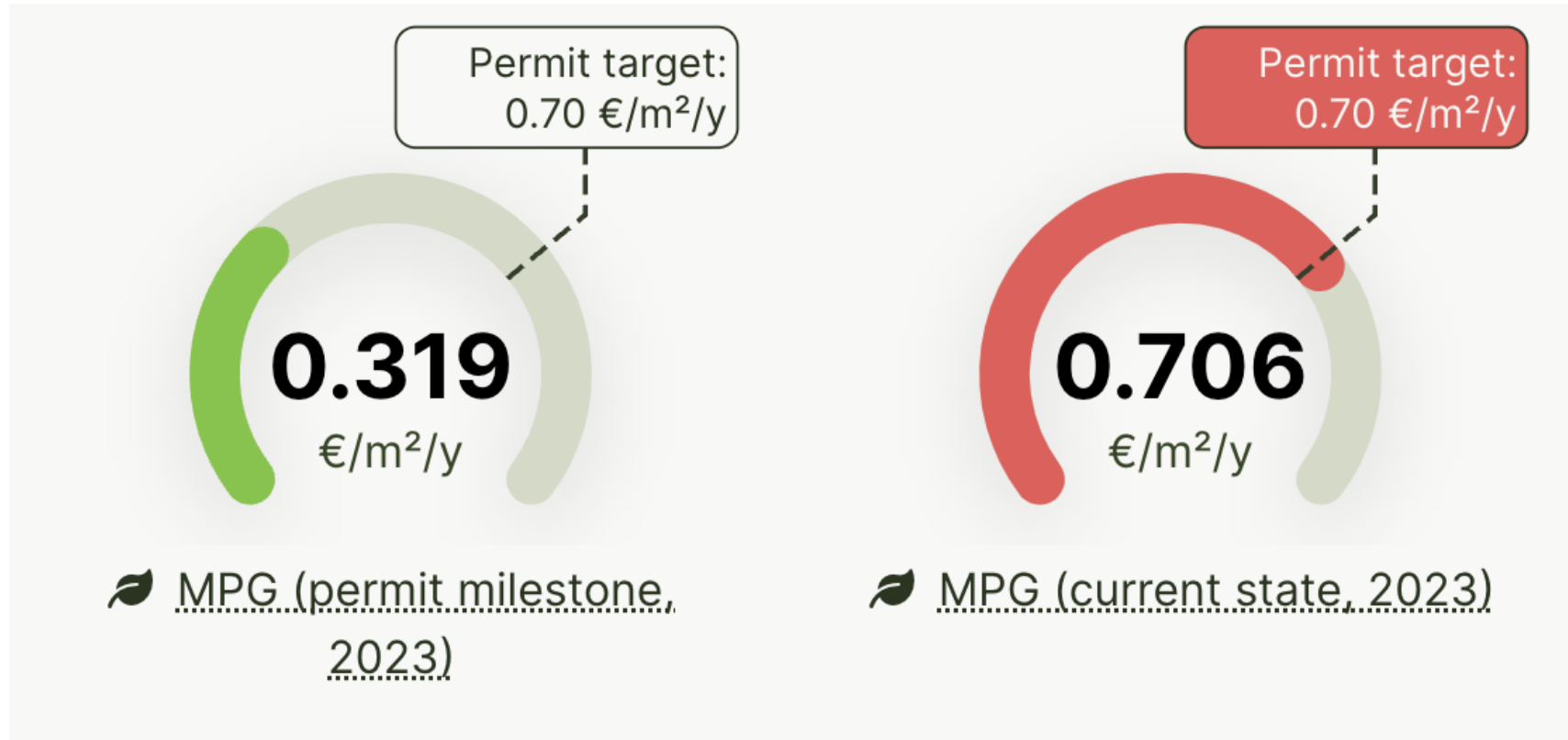


The impact of the “*hidden*” carbon contributors account for approx. **44 %** of total impact ...

these building elements are not always part of the MPG- and GWP calculations



The MPG* requires 'continues maintenance' during all lifecycles of a building



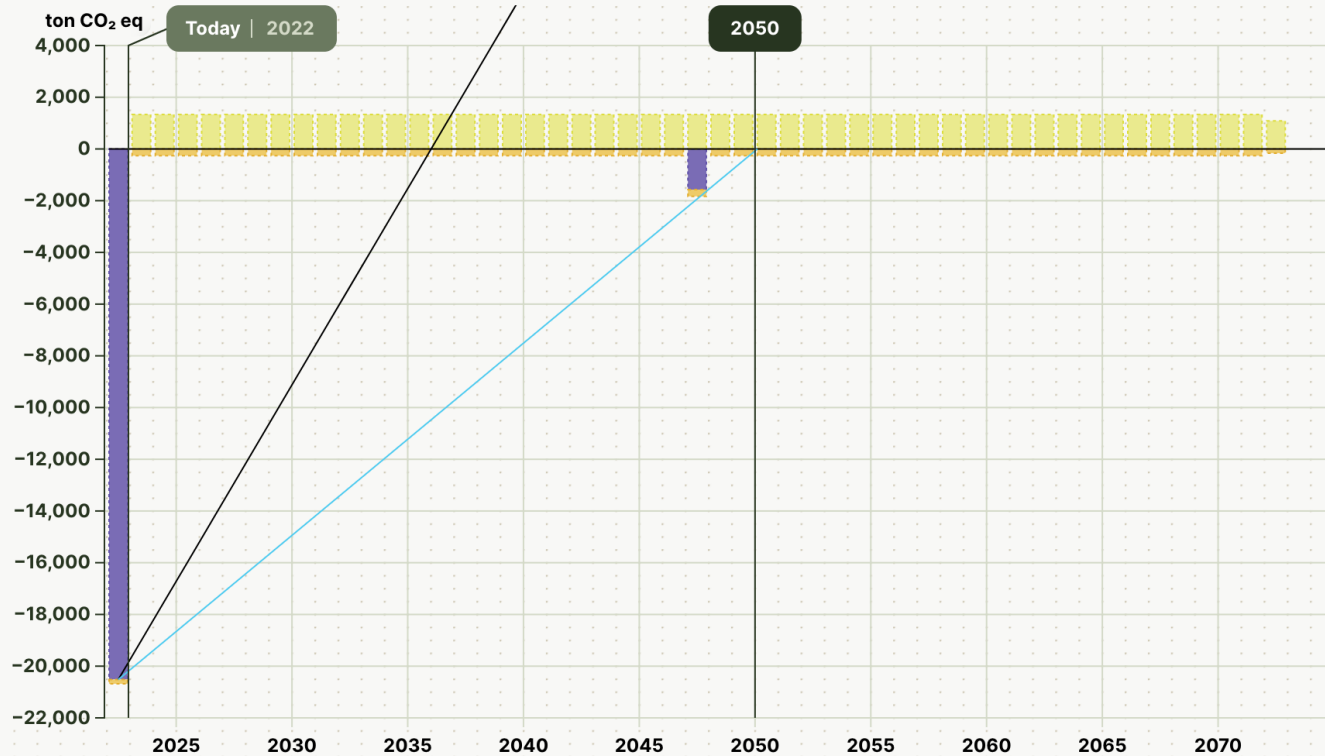
*MPG score (*Milieu Prestatie Gebouw*) is required in the Netherlands to obtain a building permit and provides an environmental impact score of applied materials

Portfolio / base

Scenario 'Surplus Energy Used' of real estate Hello World! - Delta Development Group

Search property Search Surplus Energy Used

Decarbonisation Pathway of Whole Life Carbon



Projected Net Zero **2036**

Positive GWP in 2050 **20 428**
ton CO₂ eq

Embodied Carbon Depreciation

- Surplus Energy Used 2036
- Target 2050

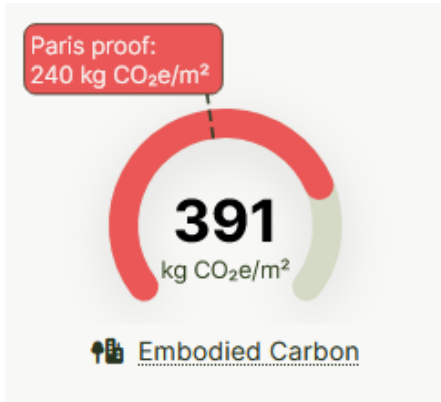
Accumulated Carbon ton CO₂ eq

Embodied	+	0.00
	-	22 103
Operational	+	66 461
	-	12 941
Sequestration	+	0.00

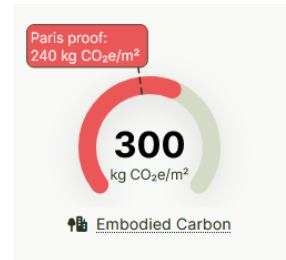


Focus on Embodied Carbon

Baseline

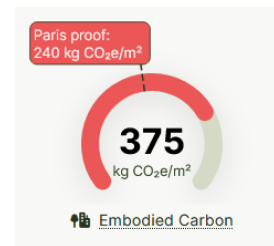


Scenario Reduced Cement- Mix in Concrete



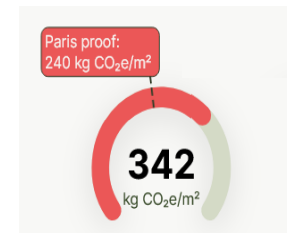
- 91

Scenario Replace roof insulation from PIR/ rockwool to Wood Fibre Board



- 16

Scenario Circularity Potential Bonus



- 49

391

- 156

=

235 CO2e/m2

Paris proof:
240 kg CO₂e/m²



We need better materials:

- This study underlines the need to reduce embodied carbon now.
- In terms of materials, that means a choice of materials with as little impact (lower LCA values) as possible.
- Steel, iron and concrete have the most impact.
- The need for suppliers of these materials to take rapid steps towards sustainability in extraction and production is high here, as is the need for designers of buildings to determine when which materials can be used.
- Biobased materials and Cradle to Cradle® certified materials are a good answer for reducing embodied carbon.



