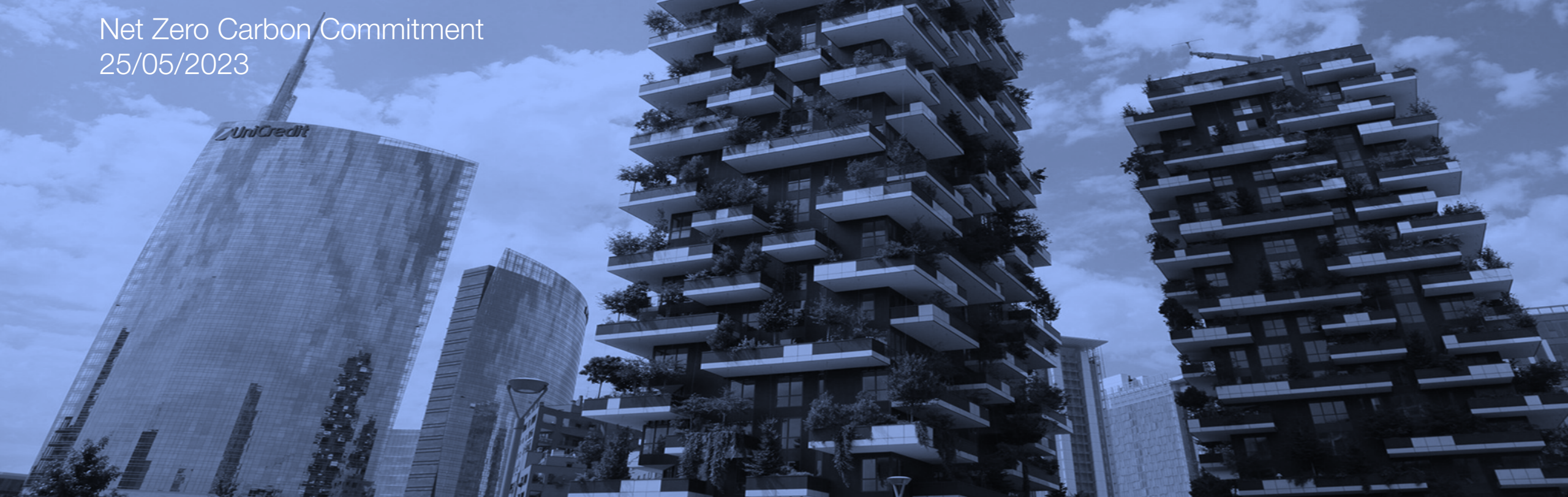


Engineering Today the Sustainable Buildings of Tomorrow

Net Zero Carbon Commitment
25/05/2023



An European leader in engineering consultancy for technical systems and high performance buildings



Offices in
8 countries
15 offices
~ **500** experts

Projects:
~ **1000** / year

52M € Turnover
In 2021

Created in 1928

MEP,
Sustainability strategy
Smart & Connected
Buildings
Health & Wellbeing
design

Member of
The Green Grid,
several
Green Building
Councils
(GBC's) and
IWBI

> 130 projects
Certified BREEAM ,
LEED, HQE, DGNB, WELL



Decarbonization @Deerns

Our Commitment to Decarbonisation

Net Zero Carbon Buildings



Business

City

States & Regions



DEERNS

Global engineering firm

Tenant

Deerns is an international consulting and engineering firm, specialised in engineering design, sustainability and smart building strategies, with a mission to passionately create a positive impact on the built environment: tailored to its users and future-ready.



Net Zero Carbon Buildings Commitment

Certificate of Recognition

Deerns Group

on Tuesday 3 December 2019

Brussels, Belgium

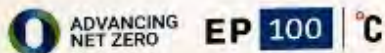
This certificate recognises that the above named organisation will join the Commitment and meet all the requirements contained within.

They have demonstrated a level of ambition and impact equivalent to the leadership required by the Commitment towards the goal of reaching net zero operating emissions in their portfolio by 2050, and to advocate for all buildings to be net zero carbon in operation by 2050.

The Net Zero Carbon Buildings Commitment forms part of EP100, a global corporate leadership initiative for energy smart companies, delivered by The Climate Group in partnership with the Alliance to Save Energy.

Cristina Gamboa

Cristina Gamboa
Chief Executive Officer
World Green Building Council



1 Commit
Commit to all Deerns occupied offices to operate at net zero carbon by 2025.

2 Disclose
Annual calculation of carbon footprint, considering Scope 1, 2 and 3 emissions. Calculation of 'Deerns Multiplier Indicator', resulting of the ratio between avoided emissions (through the energy efficiency of the projects designed) and own direct CO₂ impact.

3 Act
Set a decarbonisation plan with measurement of progress every year and recommendation of improvement measures: energy consumption reduction, transition to green/renewable energy contracting by encouraging landlords, and offsetting where decarbonisation is not possible.

4 Verify
Deerns ISO 14001 certified offices have their carbon footprint verified via 3rd party audits. Reporting and publication of annual results.

5 Advocate
Commit to educating and influencing industry to make net zero carbon mainstream. Support market transformation through awareness raising, capacity creation and knowledge sharing, and increasingly delivering future-ready, carbon neutral designs which enable a vital transition into a healthy, resource efficient and resilient society. Development of policy and plans to reduce waste and transport-related carbon footprint (mobility plans and electrical vehicle fleet). Calculating avoided emissions from nZEB projects developed each year.

15 buildings
1,820 tCO₂e portfolio carbon emissions
9,738m² total floor area
7 countries of operation

Deerns
a member of 4 Green Building Councils

EP 100 °C

Our Commitment to Decarbonisation

Net Zero Carbon Buildings



Why is Deerns engaging ?

As a signatory, we can demonstrate a level of ambition and impact equivalent to the leadership required by this Commitment Signatories through:

- Our international presence to stimulate **global markets**;
- Our significant **national presence** through our N.O.s;
- Our significant **capacity to influence** the built environment;
- The high level of **carbon emissions** within the **sectors** we provide advisory for;
- Our high **potential for advocacy** to increase uptake within industry.

Our goal :

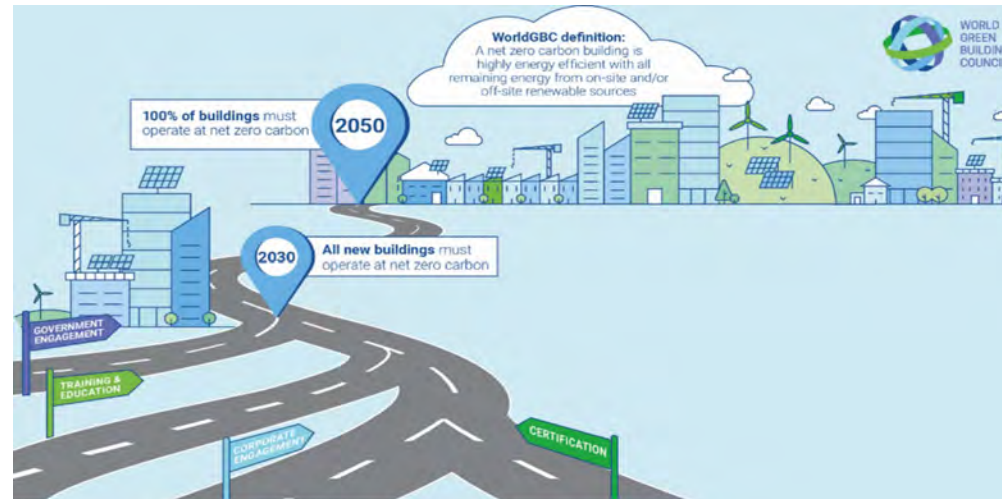
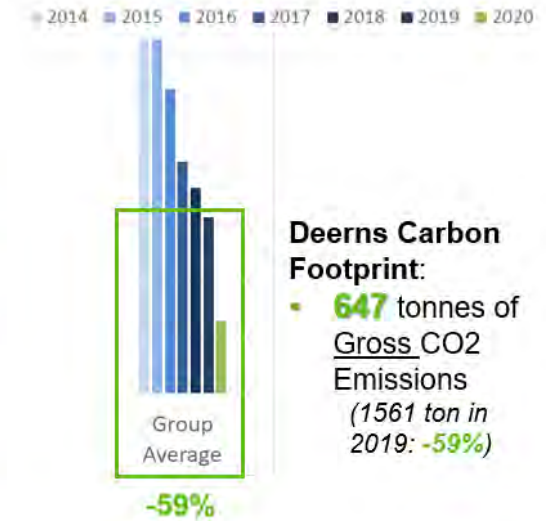
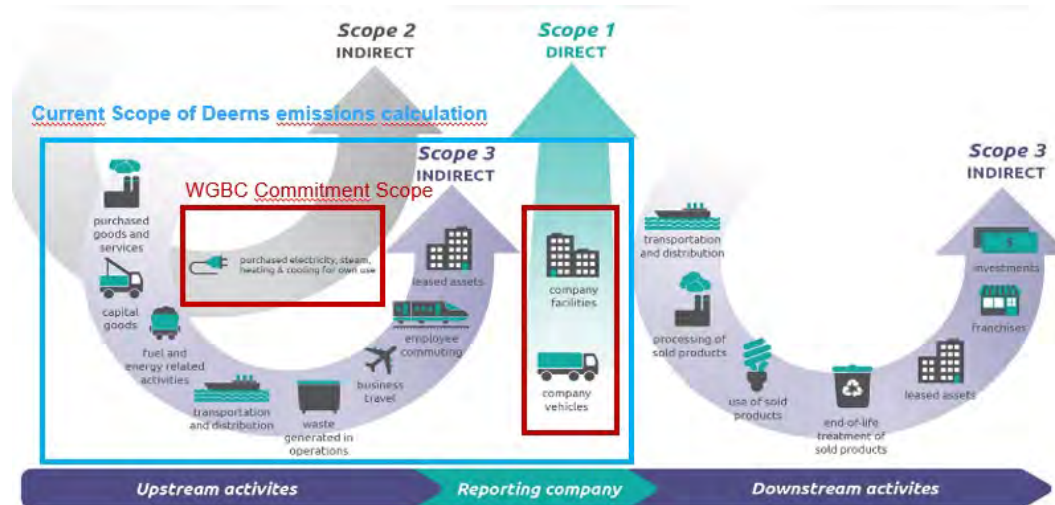
- To demonstrate **proactive climate leadership** to ensure the carbon emission reduction goals of the Paris Agreement are achieved through urgent and immediate action.
- Responsible Procurement: Demonstrate to be a legitimate **sustainable Service Supplier** for **our net zero carbon committed clients and partners**

Our Response to a Global Call for Action:

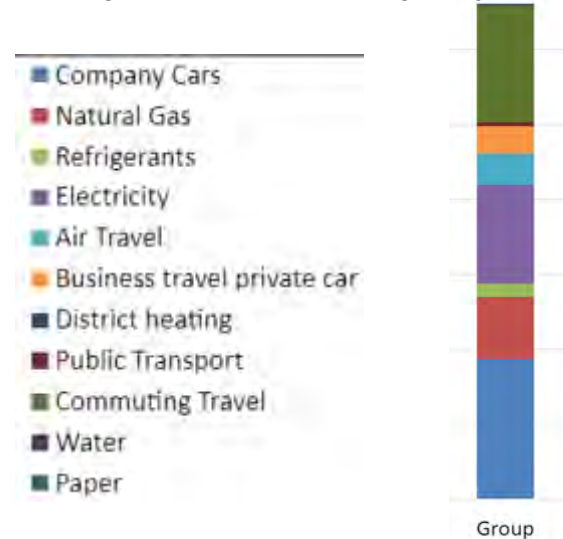
- To develop **globally ambitious yet locally relevant**, flexible and universally viable **solutions** for our assets and portfolio to both **reduce energy demand** and achieve net **zero carbon** emissions

Deerns Commitment to Net Zero Carbon: address Whole Life Carbon

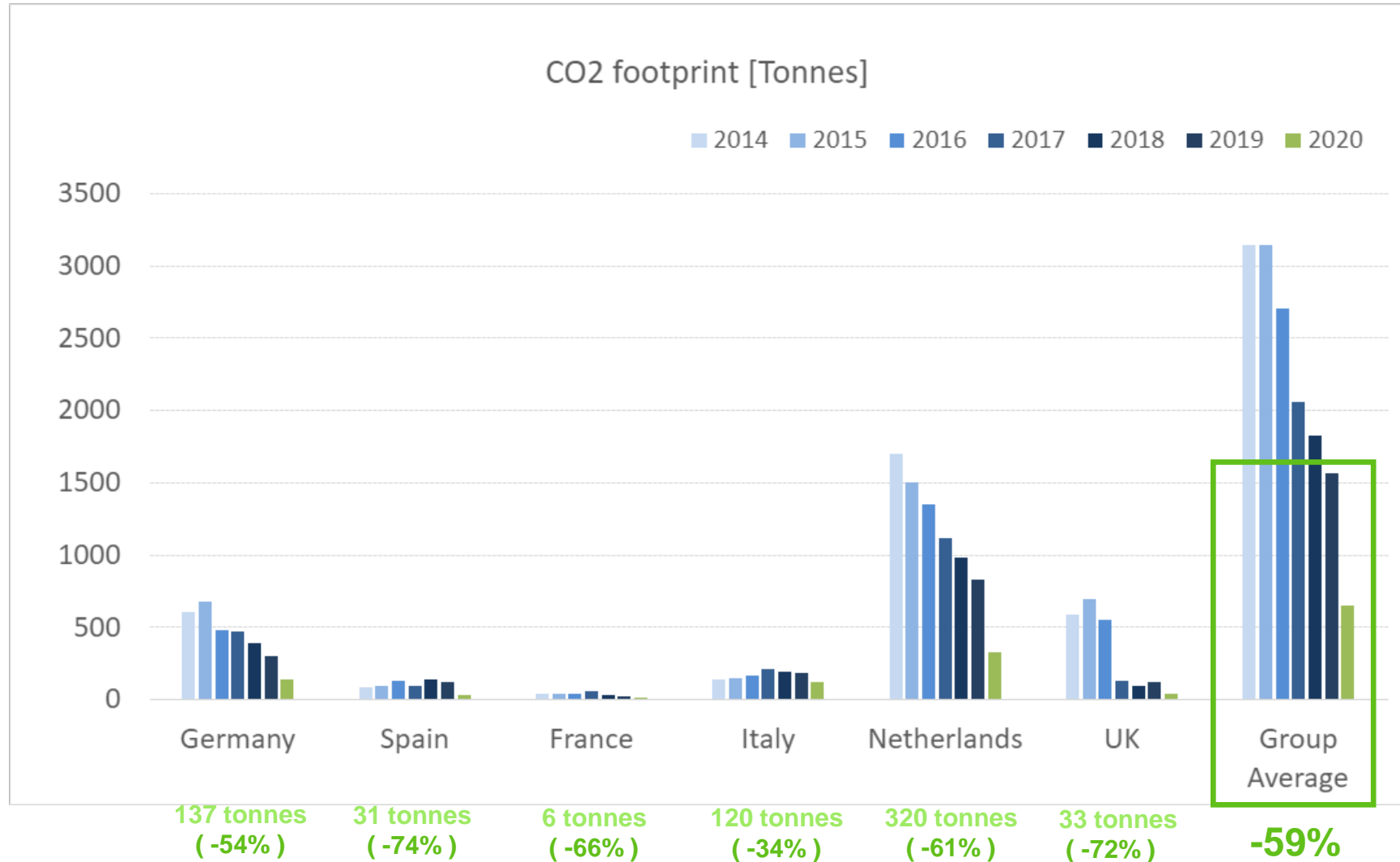
- **Carbon Goal** : net zero by 2025
 - Establish targets & action plan
 - Structure Measurement
 - Track Progress.



CO₂ Footprint Deerns National Offices 2020 (Ton CO₂)



Deerns CO2 Footprint– per N.O. and Total (2020)



Deerns Carbon Footprint:

- **647** tonnes of Gross CO2 Emissions
(1561 ton in 2019: **-59%**)

At **Group level**, our CO2 footprint reduced approximately **59%** in the past year. Good progress, continuing the CO2 emissions decrease of past years.

All N.O.'s reduced their total impact.
Covid19 restrictions limited the Client- or Project-related traveling and office occupation.

Deerns Commitment to Net Zero Carbon: address Whole Life Carbon

- **Carbon Goal** : net zero by 2025
 - Establish targets & action plan
 - Structure Measurement
 - Track Progress.
- **Consistency & Purpose:** from Operational to Whole Life Cycle considerations ourselves.
 - **As Tenants** → Office features & Procurement criteria
 - **As Services Providers** → enhancers of change through Positive Impact services

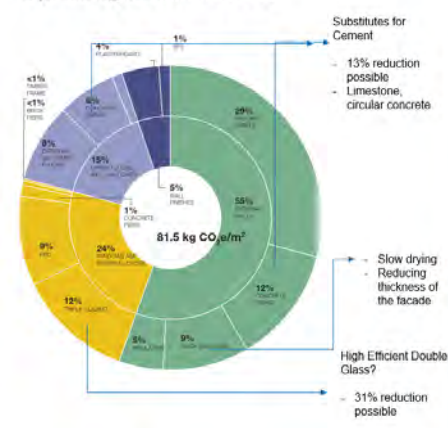
Real Estate DECARBONISATION – Our services



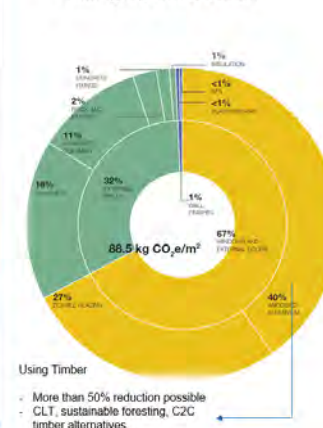
- **Staff engagement:** Create awareness and highlight of our Services contribution to Decarbonisation
- Translate contributions → **Decarbonisation support Services**

Embodied Carbon

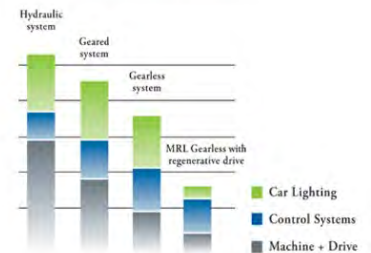
Optimizing the current ideas



Changing some ideas



DID YOU KNOW?
Lifts can consume 2-10% of the buildings power depending on the **Height** and the **Intensity of Use**.



Deerns Commitment to Net Zero Carbon: address Whole Life Carbon

- **Carbon Goal** : net zero by 2025
 - Establish targets & action plan
 - Structure Measurement
 - Track Progress.
- **Consistency & Purpose:** from Operational to Whole Life Cycle considerations ourselves.
 - As Tenants → Office features & Procurement criteria. Global scale Company & Staff consultation for engagement on decarbonisation plan.
 - As Services Providers → enhancers of change through Positive Impact services
- **Advocacy:** Accelerating and supporting market transformation initiatives related to Whole Life Carbon in Buildings



Deerns is #Building Life Ambassador in 3 Countries:

- France (with Alliance HQE-GBC)
- Netherlands (with DutchGBC)
- Italy (with GBC Italia)



Whole Life Carbon Position Paper



*Digital Library
of Materials*



*Materials Reuse
Booster Platform*



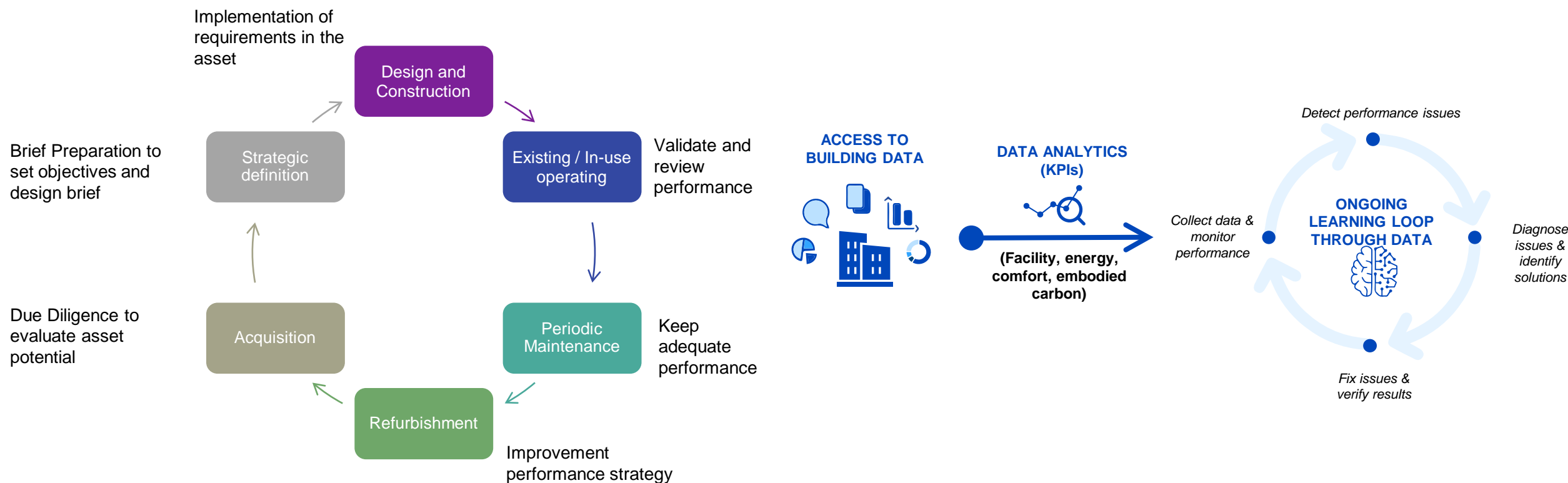
*Studies Contribution to Net Zero
Carbon Renovation Initiative*

The key role of Engineering

Our approach to decarbonization

Integrate Carbon and Climate change risks into Asset & Portfolio valuations

When decarbonization has to be considered during buildings lifecycle

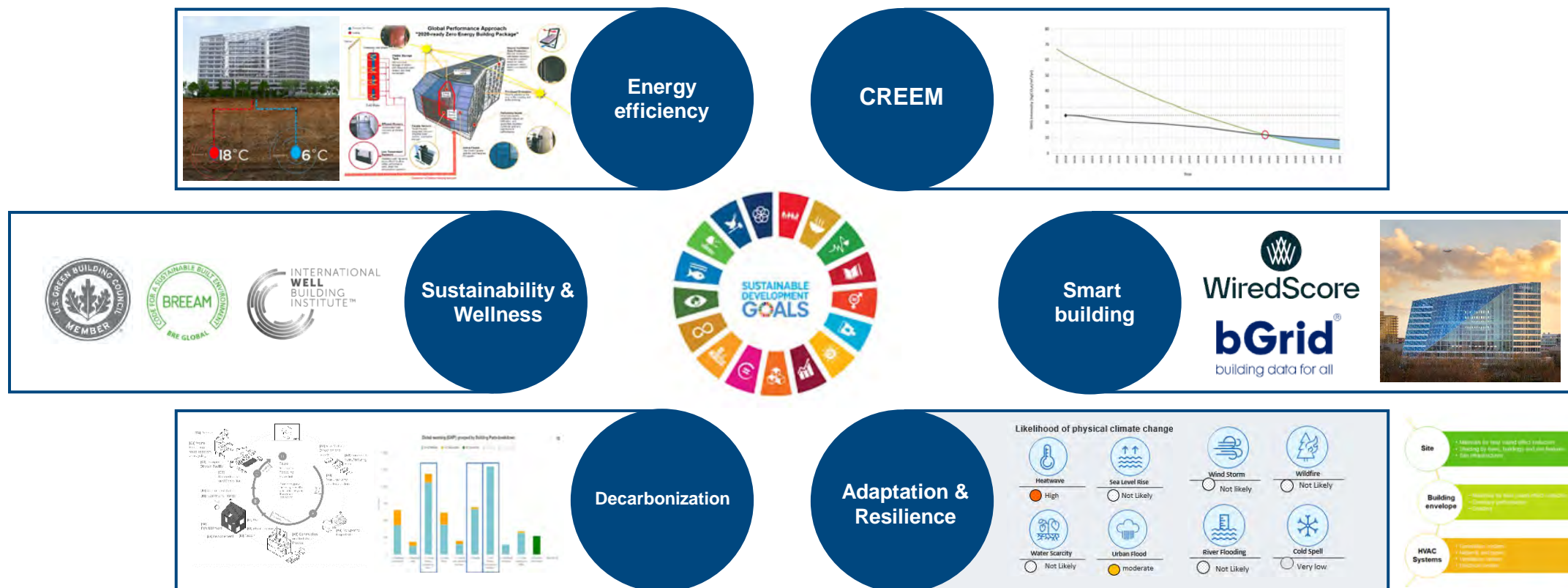


Our approach to decarbonization

Integrate Carbon and Climate change risks into Asset & Portfolio valuations

Criteria to be assessed

Environmental and Governance issues are perceived as top priorities and the most complex issues to tackle



Decarbonising Real Estate assets & ensuring their resilience

Challenging the boundaries of the Sustainability concept



**BOSCO
VERTICALE**
Biodiversity
LEED
Mutual
Energy
centre



THE EDGE

Net Zero
Energy
&
Smart



MAISON IDF

100% Solar
Strategy

Water tanks for
Energy Thermal
Storage



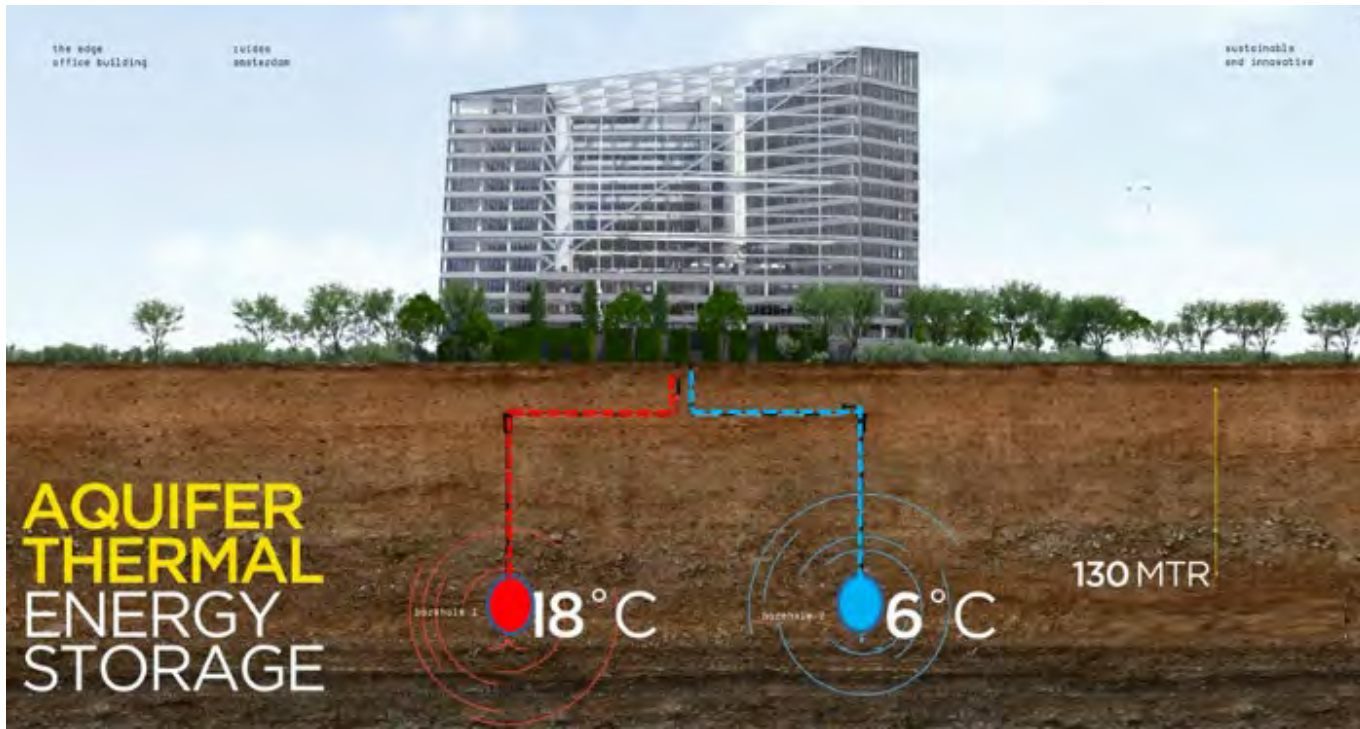
TRIODOS HQ

Net Zero Energy,
Smart, Wood,
Circular, Digital
Twin &
Demountability

The Edge, Netherlands (Deloitte HQ)

The smartest and most sustainable office

MEP, Sustainability and Smart Building
Strategy designed by Deerns



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TRIODOS HQ

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Demountability

Maison Île de France 100% Solar Powered Building anticipating nZEB regulation

Client's Challenges

Trend setting building, anticipating 2020 Regulation.

Zero Carbon & Zero Energy student's residence (for all uses), with low operating costs and low impact.

Make comfortable and healthy, a building located in a noisy and air-polluted site.

Our Added Value

1st 100% solar strategy building of such scale in Europe.

Showcase of effective innovation: 2 giant water tanks for interseasonal heat storage heated by Solar Panels.

Award-winning Project with ADEME (French Energy Agency) subvention

« Once delivered, Maison Île de France » will be one of the most unique constructions in France, regarding its performance »

LeMoniteur.fr



2) Maison Île de France 100% Solar Powered Building anticipating nZEB regulation

Our Approach

Collaborative consultancy with architect, from competition stage

100% solar strategy with giant water tanks designed for the 1st time in France at this scale.

Energy & Environmental strategy, designing an autonomous buildings for all energy uses

Characteristics

5000 m² Students residence

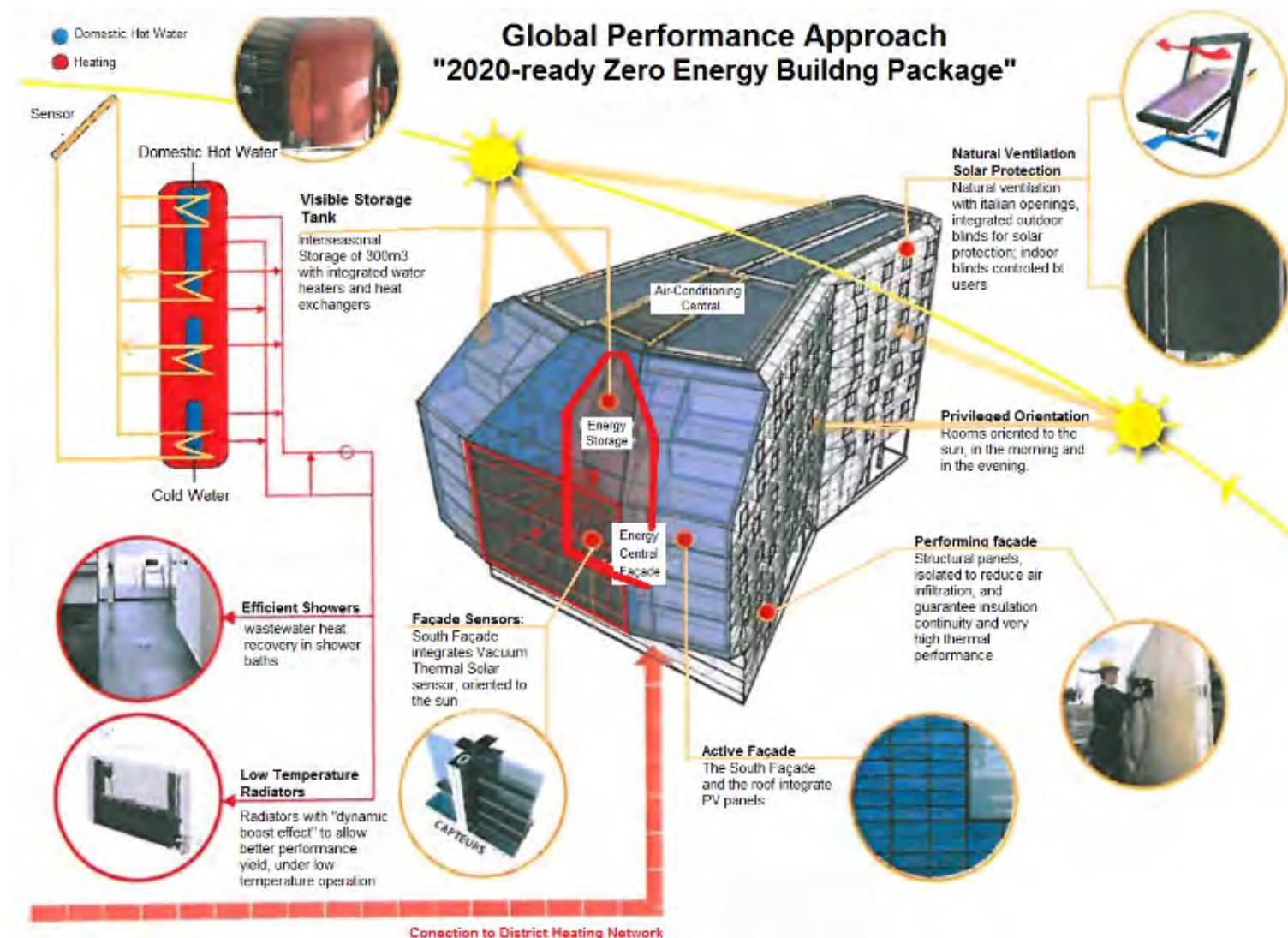
170.000 liters tanks for interseasonal heat storage.

Heat recovery from showers water and natural ventilation.

Occupation-based management of room consumptions.

Development of strategy to improve users' awareness and limit their consumptions.

Positive-Energy building complying with 2020 regulation



Decarbonising Real Estate assets & ensuring their resilience

Challenging the boundaries of the Sustainability concept



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Water tanks for
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TRIODOS HQ

Net Zero Energy,
Smart, Wood,
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Demountability

Triodos HQ, Utrecht: The new Frontier

Zero Energy & Circular Building - Reversability

Surrounding
trees as
shading of
facade

Complete
wooden
structure

Biomimicry
design
**Learning of
nature**

Architecte:
Thomas Rau

MEP &
Sustainability :
Deerns



Triodos HQ, Utrecht: The new Frontier

Client's Challenges

Realize a new branch on the De Reehorst estate in Driebergen-Zeist, blending in with the surroundings and in parallel with the development of the new nearby infrastructure.

Provide an inspiring environment for the employees and visitors of the building and the estate.

Our Added Value

- Provide energy strategy and design leading to achieve BREEAM Outstanding certification and Zero Energy building status.
- Deliver a concept containing sophisticated technology for building's efficiency and user comfort.
- Contribute to the implementation of a highly developed building envelope that perfectly integrates efficiency with environmental integration.



Triodos HQ, Utrecht: The new Frontier

Our Approach

Collaborative consultancy with **RAU** from the very first design stages.

Implementation of real zero energy strategies: ATES (Aquifer Thermal Energy Storage); triple glazing ($U_{\text{window}} = 0,9$); Operable windows; 3,300m² of solar parking with charging stations.

Energy consumption max. 29 kWh/m².

Characteristics

Unique biomimicry design (learning from nature) with building shape adapted to the routes of flying bats.

Complete wooden structure, entirely disassemblable.

Large roof lights above the elliptical cores connecting the workplaces at the different floor levels provide daylight in the voids and on the stairs.

Surrounding trees providing natural shading to the facades.

