



Sustainability at Scheldebouw ▪

CO₂ Performance Ladder ▪

Intermediate Report FY24

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Revisions

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00		First issue

Proprietary Note

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01 Introduction

The construction industry has realised that we have to act now and start improving the human impact on the environment, if we want future generations to enjoy our planet the same way as previous generations did. Sustainability has finally become a key performance criterion in facade design, which allows us to create solutions and make decisions which were not viable before.

Our mission

Scheldebouw strives to be a front runner in the facade industry with our sustainability approach

To achieve this, we need to:

- Understand our environmental impact
- Develop knowledge and tools
- Deliver what we promise on the projects
- Show it to the world

01.1 CO2 Performance Ladder

The CO2 Performance Ladder is a Dutch initiative for companies in the construction sector that want to be pro-active and set ambitious targets to reduce their carbon footprint as a company. The initiative is chosen by Scheldebouw, because it provides a structured framework to manage our sustainability developments. It is aligned with current and expected European legislation and helps us to stay ahead of what is strictly mandatory.

On 19th October 2023 the initial audit took place and Scheldebouw has been awarded the level 4 certification on the CO2 Performance Ladder. In this report we present an intermediate review of Scheldebouw's CO2 Performance, Targets and Reduction Plan during Fiscal year 2024.

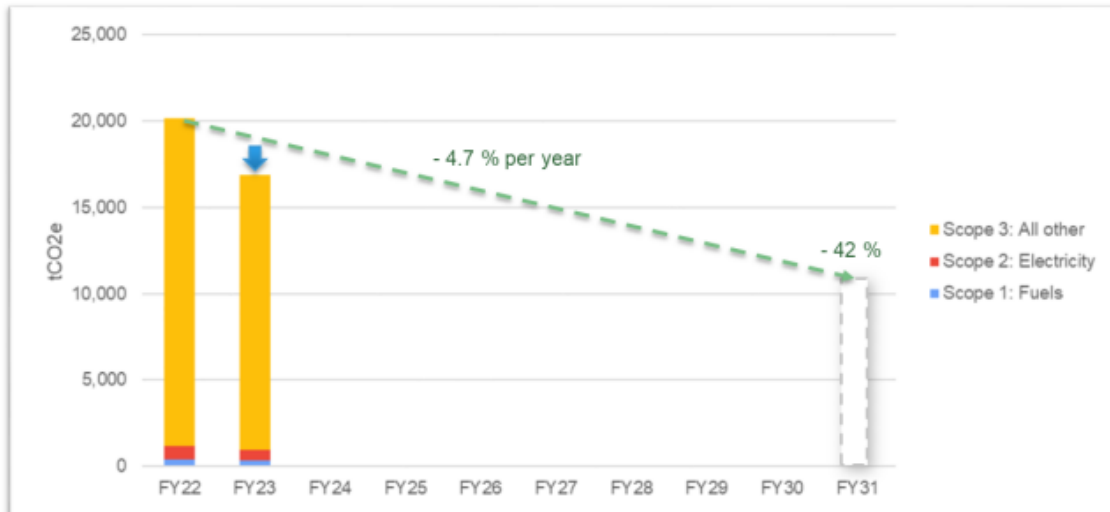
01.2 CO2 Reduction targets

In line with Paris agreements we need to reduce our CO2 emissions and waste to zero before the year 2050. Because this is a worldwide target, the general consensus is that developed countries need to reach this goal well before 2050 (around 2040) to compensate for developing countries. Before 2030 we already need to be halfway our reduction target to make sure that we don't exceed the total "carbon budget".

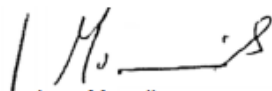
The Science Based Targets initiative (SBTi) is the most established initiative that encourages organisations to set targets to reduce their Green House Gas (GHG) emissions. Their set of standards and guidelines helps target setting on different levels and with different scopes. Scheldebouw sets their short term targets based on the following assumptions:

- Absolute Contraction Approach
- 1.5°C pathway
- Base year FY22
- Target year FY31

Scheldebouw’s “CO2 Performance Report FY23” is available upon request, in which our organisation commits to these targets:




Hereby Scheldebouw states that it is committed to achieve the above Carbon Reduction Targets, as part of the CO2 Performance Ladder certification. In the Townhall Meetings on the 28th and 29th of September these targets were introduced and explained to the organisation. To achieve these targets carbon reduction measures have been proposed, which are described in our Carbon Reduction plan and are also summarised in this document. The information will be shared with our employees. We implement these measures to achieve our targets, in collaboration with all our employees.



Jens Mönnikes
General Manager



Janneke Verkerk-Evers
Sustainability Leader



Remco Riemens
HSE Officer

01.3 CO2 reduction approach

Scheldebouw’s carbon reduction strategy focusses on:

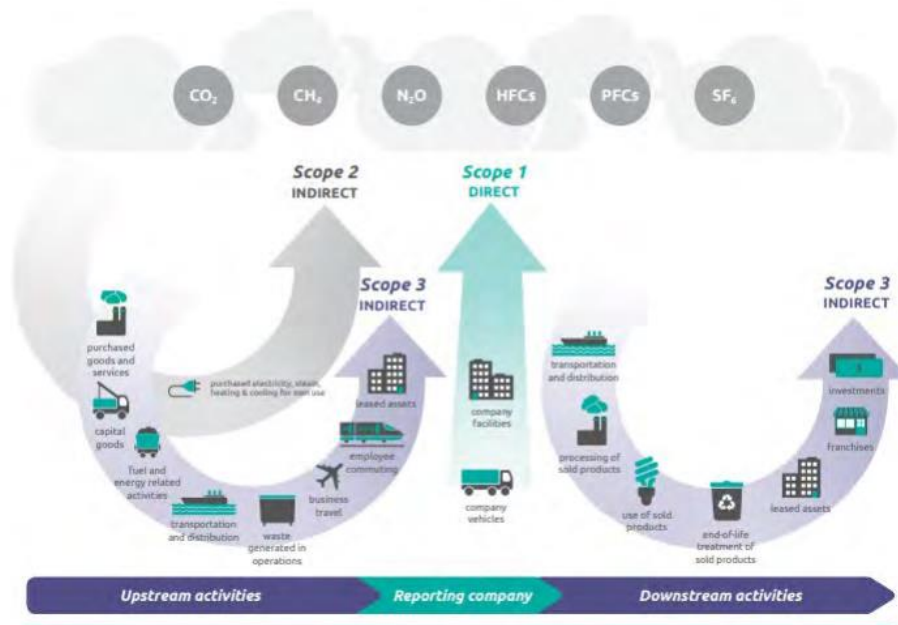
- Scope 1 & 2: CO₂ emissions that are directly influenced by the company (its own energy use)
- Scope 3: embodied carbon emissions during the production of our façades (value chain emissions)

Using the LCA (Life Cycle Analysis) method, we went through the entire life cycle of our façades and mapped out the environmental impact per phase. Our expectation was confirmed that currently the choice of our suppliers and the further agreements with them in particular determine the CO₂ footprint of our product. Transportation, waste and the activities in our own assembly facilities and on the building site have a much lower impact. Still they cannot be neglected, if only because they are important for the visibility and awareness of our CO₂ reduction policy, both internally and externally.

The sustainability developments at Scheldebouw therefore focus on providing better insight for the project related design, engineering and purchasing decisions we have to make together with our clients. By comparing the environmental impact of different design and material related alternatives, we are able to make better informed decisions. We provide embodied carbon calculations from the early design stages on, update those regularly during the project execution phase and finalise the process by going through a full third party verification to obtain official Environmental Product Declarations (EPDs) for the specific design of that project. All of this in close collaboration with our client's project team to make sure that we meet their expectations, requirements and architectural design intent. With this approach we try to reduce the embodied carbon of our products in a holistic way instead of focussing on specific solutions.

02 CO2 Performance of Scheldebouw

The CO2 emission inventory for the CO2 Performance Ladder is drawn up in accordance with ISO 14064-1 §9.3.1. Depending on the level on the CO2 Performance Ladder, the CO2 emission inventory comprises direct and indirect emissions as a result of the organisation’s activities, subdivided in scope 1, 2 and 3 emissions. Indirect scope 3 emissions can originate upstream as well as downstream. As of CO2 Performance Ladder level 3, the organisation has to map out the CO2 emission (scope 1 & 2 emissions and business travel (in scope 3)) of the organisation. As of level 4, an organisation must also report about its scope 3 emissions.



Scope diagram of the GHG Protocol Scope 3 Standard

02.1 Data improvement and corrections

Since Scheldebouw’s certification for level 4 of the CO2 Performance Ladder the following improvements on data collection and accuracy have been achieved:

- Data collection is centralised in one Google Drive folder with clear task division and fixed format
- Data split from yearly totals to quarterly values for better performance monitoring
- Google spreadsheet dashboard for performance monitoring, including forecast

The following corrections have been applied, which lead to minor updates of the values previously reported:

- By refining the data to quarterly values, also the correct carbon factors are now applied to each month. Previously the carbon factor for calendar year 2021 was applied to fiscal year 2022 (1 April 2021 – 31 March 2022) etc.
- Leased cars (petrol) FY22 value for tanked litres corrected
- Flights (intercontinental and Europe) FY22 distances corrected
- Employee commuting by car FY22 and FY23 values corrected to actual compensated kilometres
- Monetary values FY22 and FY23 for “other services” corrected

The following actions are in progress or planned:

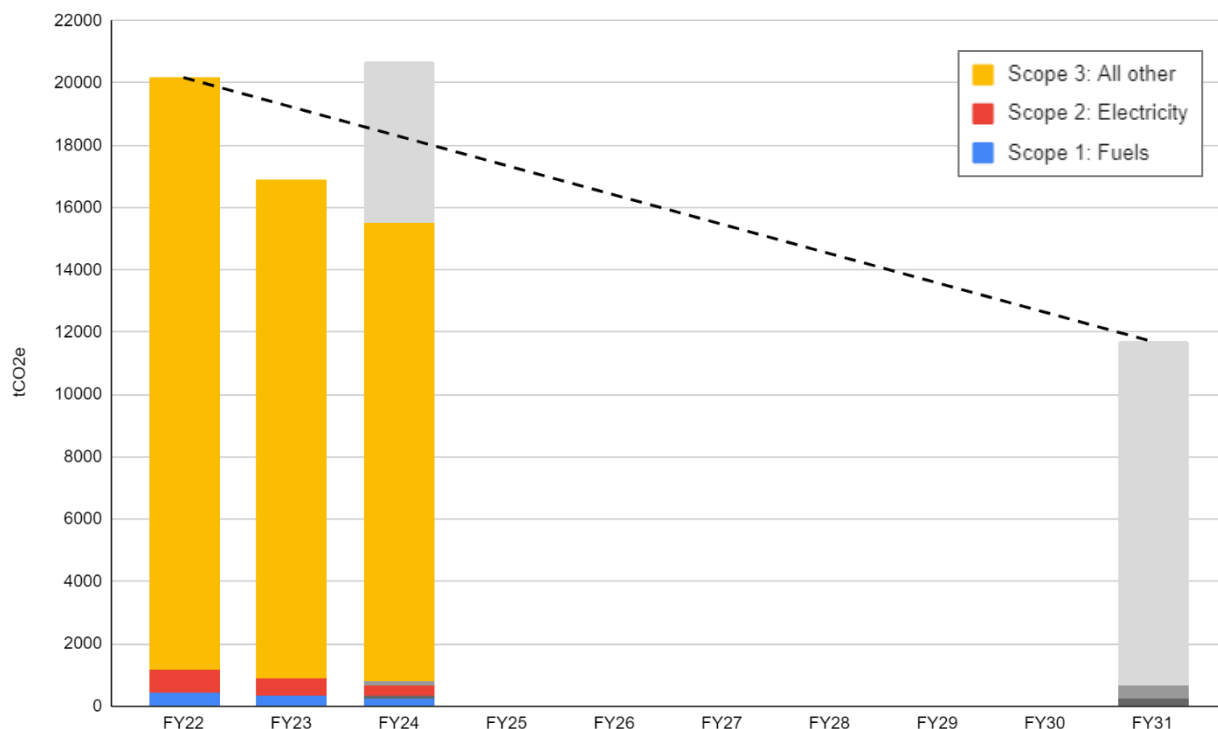
- Sub-metering of energy consumption between office and factory in Middelburg (to be completed before 1 April 2024)
- Survey of site energy consumption (starting April 2024)
- Aluminium extrusions and glazing quantities in kilograms and no longer in monetary values (first results expected in April 2024)

The corrections lead to the following set of updated targets:

	Base year (FY22)	Target year (FY31)	% Reduction
Scope 1	431 tCO ₂ e	241 tCO ₂ e	-44.0%
Scope 2	739 tCO ₂ e	429 tCO ₂ e	-42.0%
Scope 3	19,004 tCO ₂ e	11,023 tCO ₂ e	-42.0%
Total	20,174 tCO ₂ e	11,692 tCO ₂ e	-42.0%

02.2 Overall results

In the following figure the results are shown of the CO₂ emission inventory for the financial years FY22, FY23 and FY24. For FY24 the actual results of quarter 1, 2 and 3 are shown and a forecast is made for quarter 4 by using the values of the preceding year.



Updated performance evaluation of FY23

	Base year FY22	Target FY23		Achieved FY23	
Scope 1	431 tCO2e	410 tCO2e	-4.9%	320 tCO2e	-25.6%
Scope 2	739 tCO2e	705 tCO2e	-4.7%	593 tCO2e	-19.7%
Scope 3 total	19,004 tCO2e	18,118 tCO2e	-4.7%	15,984 tCO2e	-15.9 %
Scope 1, 2 & 3 total	20,174 tCO2e	19,232 tCO2e	-4.7%	16,898 tCO2e	-16.2%

The corrections explained in paragraph 02.1 cause a slight modification of the values in base year FY22 and FY23, but the overall conclusion remains the same. The measures to reduce our scope 1 and 2 emissions were very effective and we achieved our reduction targets for FY23 with a big margin. Overall our total scope 3 emissions also reduced more than sufficiently to achieve our targets.

Intermediate performance evaluation of FY24

	Base year FY22	Target FY24		Forecast FY24 (achieved)	
Scope 1	431 tCO2e	389 tCO2e	-9.8%	346 (225) tCO2e	-19.6%
Scope 2	739 tCO2e	670 tCO2e	-9.3%	453 (318) tCO2e	-38.7%
Scope 3 total	19,004 tCO2e	17,231 tCO2e	-9.3%	19,898 (14,695) tCO2e	+4.7%
Scope 1, 2 & 3 total	20,174 tCO2e	18,289 tCO2e	-9.3%	20,697 (15,238) tCO2e	+2.6%

In FY24 a substantial reduction of Scheldebouw's Scope 1 & 2 emissions has been achieved so far and the forecasts show that this will be maintained at the end of the year. For Scope 3, however, an increase of the emissions is expected in FY24. The increase of CO2 emissions in our value chain is analysed in more detail in paragraph 02.4.

02.3 Energy use of factory and offices

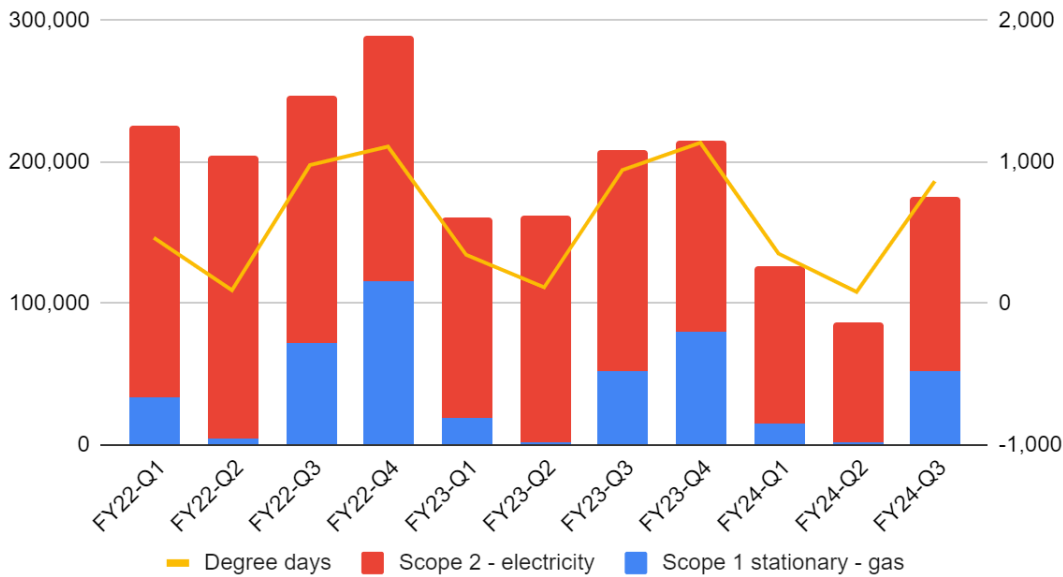
In the following figure the CO2 emissions of Scope 1 Stationary and Scope 2 activities are shown per quarter. Overall the CO2 emissions related to the energy use of our buildings have decreased significantly over the past two years. Due to the seasonal fluctuations of the external temperatures, also the emissions fluctuate over the year, though. The degree days method is invented to account for this effect. In the graph the degree days are plotted for reference (on a different scale).

Degree days

The basic principle is that you do not use gas during a 24-hour period in which the average outside temperature is higher than the average inside temperature. However, if the outside temperature is lower, you start heating and degree days have to be counted. Usually 18 °C is taken as the value for the average indoor temperature in the degree day calculation.

The daily average outside temperature of a colder day is subtracted from the daily average indoor temperature of 18 degrees. If it was an average of 10 degrees outside on a day, you calculate as follows: 18 - 10 = 8 degree days. If the average outside temperature over 24 hours was higher than 18 degrees, you will always end up with 0 degree days. (source: www.mindergas.nl/degree_days, translated by Google Translate)

Energy use



		Q1	Q2	Q3	Q4	Total
Scope 1 stationary – gas [tCO2e]	FY22	33,958	4,025	72,428	116,282	226,694
	FY23	19,040	2,518	52,602	79,952	154,111
	FY24	15,469	1,733	52,827	79,952*	149,981*
Scope 2 – electricity [tCO2e]	FY22	191,116	200,906	174,538	172,475	739,035
	FY23	142,200	159,824	156,040	135,251	593,315
	FY24	110,648	84,298	122,812	135,251*	453,010*
Degree days [° days]	FY22	464	94	978	1,110	2,647
	FY23	345	114	944	1,138	2,540
	FY24	353	83	864	1,138*	2,438*

* Forecast of Q4 by using the values of the preceding year

In reality only part of the CO2 emissions in the graph are related to degree days i.e. heating. Another part of the emissions are related to either cooling, lighting, office equipment or manufacturing activities for façade production. At the moment no separate data are available for these activities, so a more detailed analysis is not possible.

- The installation of separate energy meters for different activities is planned to be completed before the start of the next fiscal year (1 April 2024), allowing for a better assessment of which new measures will have the biggest effect.

Recently completed and planned energy reduction measures:

- Solar panels: in June 2023, 738 solar panels were installed. These supply approximately 300,000 kWh of electricity per year. Effects are visible in the results of FY24.
- Towards all-electric: as a result of the new office facade, the existing air conditioners were removed and replaced by a new air treatment system for heating, cooling and ventilation in autumn 2023. Replacement of the gas-fired heaters by heat pumps is being investigated for the production department. This will allow Scheldebouw to remove the gas connection.

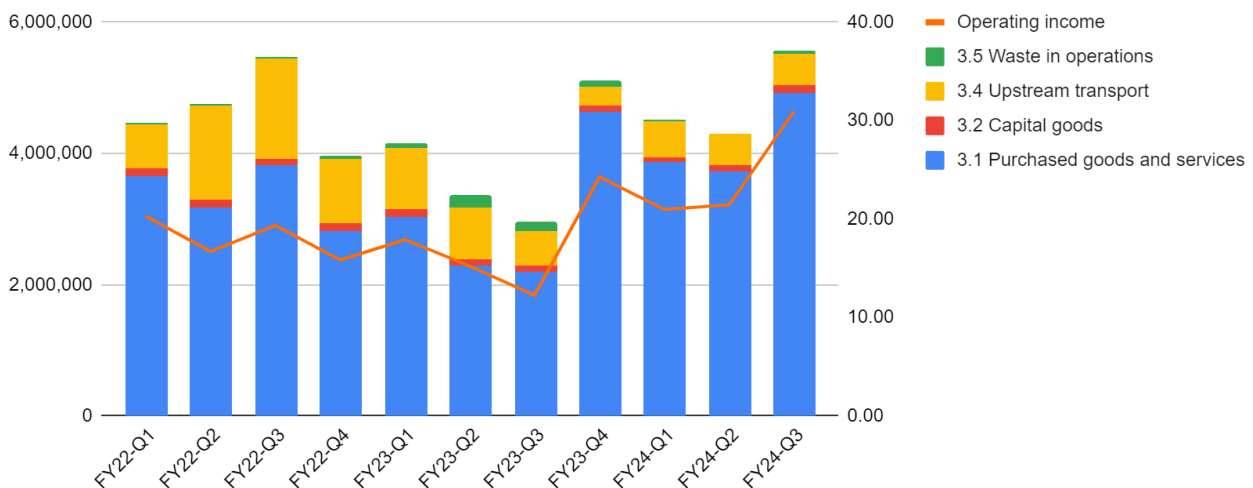
02.4 Embodied carbon of our products

In the following figure the CO2 emissions in our value chain (Upstream Scope 3) are shown per quarter. On a different scale also the operating income is plotted in the same graph. The increase of CO2 emissions in our value chain is likely caused by an increase of purchased materials corresponding with an increased operating income.

At the end of FY24 the aim is to evaluate Scheldebouw's CO2 performance more accurately by:

- Quantifying the CO2 emissions related to the production of aluminium extrusions and glazing with carbon factors per kilogram material and no longer in monetary values, so that the effect of purchasing aluminium extrusions with a lower embodied carbon per kilogram material will be visible.
- Investigating an intensity based method for target setting instead of the absolute contraction approach, to account for the company's increased production.

Scope 3 upstream



		Q1	Q2	Q3	Q4	Total
3.1 Purchased goods and services [tCO2e]	FY22	3,649,254	3,172,802	3,811,683	2,816,902	13,450,642
	FY23	3,033,187	2,284,271	2,188,698	4,630,870	12,137,026
	FY24	3,857,781	3,726,994	4,929,229	4,630,870*	17,144,874*

3.2 Capital goods [tCO2e]	FY22	118,693	121,095	104,144	114,868	458,801
	FY23	111,779	95,038	96,777	100,715	404,310
	FY24	82,582	92,207	123,256	100,715*	398,760*
3.4 Upstream transport [tCO2e]	FY22	683,067	1,440,027	1,529,428	985,225	4,637,747
	FY23	948,988	792,738	526,099	294,719	2,562,544
	FY24	551,147	473,069	462,597	294,719*	1,781,533*
3.5 Waste in operations [tCO2e]	FY22	25,518	24,749	19,502	38,390	108,158
	FY23	59,391	186,540	140,609	85,230	471,770
	FY24	31,451	14,393	48,248	85,230*	179,322*
Operating income [mln €]	FY22	20.29	16.70	19.35	15.83	72.18
	FY23	17.92	15.21	12.26	24.28	69.67
	FY24	20.97	21.45	30.95	24.28*	97.65*

* Forecast of Q4 by using the values of the preceding year

The sustainability developments at Scheldebouw focus on providing better insight to our clients about the environmental impact that different design alternatives have, so that they (and we) are able to make better informed decisions.

The design options focus on a combination of the following aspects to achieve the biggest impact:

- Optimising the design to reduce the quantities of a material
- Comparing different materials, e.g. aluminium sheets vs. terracotta
- Comparing different suppliers and/or production methods, e.g. low-carbon aluminium billets

Recently completed and planned actions to reduce the embodied carbon of our products:

- Embodied carbon calculation now standard part of tender bid, even without client request (implemented)
- Using aluminium extrusions in our facades from billets produced by hydro-electricity (First project currently in production, second project in progress)
- Engagement with suppliers to stay informed about developments and technical and commercial feasibility (First contacts established, working on a more structured approach)

02.5 Sustainable company culture

To engage internal and external stakeholders we believe that it's not sufficient to focus on measurable quantities and numbers alone, but our actions should also be visible. For this reason we have a working group from various people of all departments throughout the company that come up with initiatives to improve our sustainable company culture and that collect ideas from other employees. They are also involved in the Sustainability Newsletter that is circulated three times per year.

03 Conclusion

The CO₂ performance ladder is a Dutch initiative for companies in the construction sector that want to be proactive and set ambitious targets to reduce their carbon footprint as a company. The initiative is chosen by Scheldebouw, because it provides a structured framework to manage our sustainability developments. It is aligned with current and expected European legislation and helps us to stay ahead of what is strictly mandatory. On 19th October 2023 the initial audit took place and Scheldebouw has been awarded the level 4 certification on the CO₂ Performance Ladder.

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Currently the choice of our suppliers and the further agreements with them in particular determine the CO₂ footprint of our product. Transportation, waste and the activities in our own assembly facilities and on the building site have a much lower CO₂ impact. By providing in house Life Cycle Analysis (LCA) services to optimise the design we try to reduce the embodied carbon of our facades in a holistic way instead of focussing on specific solutions. The process is finalised by obtaining project specific, fully externally verified Environmental Product Declarations (EPDs).

Based on the guidelines and standards of the Science Based Targets initiative (SBTi) carbon reduction targets have been defined so that we can check if our reduction measures are sufficiently effective. Based on our predicted results over FY24 the measures to reduce our scope 1 and 2 emissions are very effective and we expect to achieve our reduction targets for FY24 with a big margin. Our scope 3 emissions, however, are expected to increase, because of a significant increase of production in the current year. We are investigating intensity based target setting methods as an alternative to the current absolute contraction approach.