

# Castellum Shades of Green assessment<sup>1</sup>

June 11, 2024



**Sector: Real Estate**



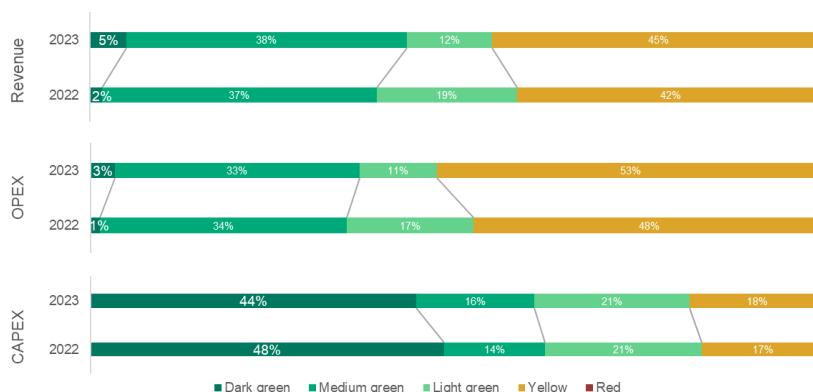
**Region: Nordics**

This report was produced by Shades of Green using Shades of Green Methodology.

On December 1, 2022, S&P Global acquired Shades of Green from CICERO.

## Executive Summary

**Castellum is a real estate company in the Nordic region.** Business operations concern property development, management, acquisition, and sale of commercial premises. At the end of 2023, its property value was approximately 160 billion SEK and total leasable area was 5,485,000 square meters. The company is active throughout Sweden, in Copenhagen and the Helsinki area, and in Norway through its associated company Entra.



**Figure 1: Shading of revenue, operating costs and capital expenditures for Castellum from 2022 to 2023.**

**In 2023<sup>2</sup>, 55% of rental revenue, 47% of operating costs (OPEX), and 82% of investments (CAPEX), came from properties with some Shade of Green.** The Shade of Green assigned reflects the underlying property’s overall climate risk and environmental impact, where we take into account if it is new construction, a major redevelopment or an existing building. From a climate perspective, it is better to renovate existing buildings rather than build new ones, especially in the Nordic context where embodied emissions in building materials typically make up 50% of total lifecycle emissions. Castellum’s focus on energy management and climate resilience on a property level mitigates some potential risks regarding transition and physical climate risks and were key shading considerations.

**The Shade of Green assigned to Castellum’s properties reflects the energy use of the building, the level of environmental certifications and the focus on sustainable materials.** Dark Green is allocated to highly energy efficient existing properties with the

## Nasdaq Green Designation<sup>1</sup>

Shades of Green assesses that Castellum meets the requirements for Nasdaq Green Equity Designation set out in the Nasdaq Green Equity Principles.



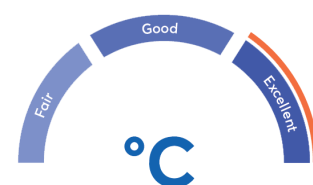
<sup>1</sup> Shades of Green is an approved reviewer to assess alignment with the Nasdaq Green Equity Principles, [Nasdaq.com/Solutions/Nasdaq-Nordic-Green-Designations](https://www.nasdaq.com/Solutions/Nasdaq-Nordic-Green-Designations)

<sup>2</sup> Shades of Green previously conducted a Company Assessment for Castellum in 2022. In response to updated industry guidance on identifying the top 15% of energy-efficient buildings within national building stock, this updated report incorporates revised criteria in its shading methodology.

highest levels of certifications or where reused materials were used in renovations, to support the fact that in a low carbon and climate resilient future, it is needed to reuse more and produce less new. Further, for new construction, it is crucial to reduce embodied emissions from materials compared to the norm, and therefore new properties also need to focus on materials and the climate impact when building. Medium Green is allocated to highly energy efficient properties, and energy efficient properties with either a high level of certification or a focus on reducing embodied emissions. Light Green is allocated to properties that have a high level of environmental certification, but do not qualify to be among the most energy efficient buildings compared to national building stock. For these buildings, the energy performance has been assessed to ensure that no buildings with an EPC label of D or below qualified for Light Green. These buildings were shaded Light Green because of the environmental benefits associated with the certifications achieved by these buildings. Two of the properties that have received a green shading is linked to fossil fuel heating, however there are plans to phase this out. These properties constitute less than 2% of Castellum’s green-shaded portfolio. Properties that do not qualify for any of the criteria for a Shade of Green are allocated a Yellow shade.

**Governance Assessment**

**Castellum has a solid sustainability strategy and its business structure facilitates sustainable business decisions.** Climate targets are integrated into decision-making processes. Its strategy to be net-zero across scope 1, 2 and 3 emissions by 2030 is accompanied by sub-targets for the years to come to make it easier to measure how it is performing on its main target. Castellum’s net-zero target is encouraging and is planned to be achieved through activities that directly deliver emissions reductions, although in line with the SBTi a maximum of 10% of emissions can be compensated. It is especially encouraging that all of Castellum's new developments have started to include re-used/circular materials, where materials that are new must be able to be re-used when demolished. Also, its policies, procedures and reporting follow well-established standards, and climate targets are integrated into decision-making processes. We encourage Castellum to continue to improve the total energy performance of its portfolio.



**Figure 2: Shades of Green assess Castellum’s governance structure and practice to be Excellent.**

**EU taxonomy**

**The relevant EU Taxonomy activities for Castellum include the construction of new buildings, renovation of existing buildings, and acquisition and ownership of buildings.** Shades of Green assesses that 36.6% of revenue, 37.2% of OPEX, and 14.6% of CAPEX are likely aligned with the acquisition and ownership of buildings category. Since last year, Castellum has adopted the EU taxonomy threshold requiring a 30% improvement in Primary Energy Demand (PED) for the renovation of existing buildings. Future renovations are likely aligned with the criteria for climate change mitigation, However, not all buildings renovated in 2023 met this criterion, likely because their construction began before the implementation of the updated policy. For the construction of new buildings, all but one development in 2023 likely met the substantial contribution criteria. Swedish trade associations are seeking clarity on the Do-No-Significant-Harm (DNSH) criteria for the transition to a circular economy and pollution prevention and control. Castellum appears aligned with other DNSH criteria and fulfills the requirements of minimum social safeguards.

**Table 1: Sector specific metrics**

	Energy use (kWh/m <sup>2</sup> )	Environmentally certified (% of area)	Emissions intensity scope 1,2 and 3 (kg CO <sub>2</sub> e/m <sup>2</sup> )	Heated directly by fossil fuels (% of area)
<b>2023</b>	98	50	19.3	1
<b>2022</b>	96	45	24.3	0
<b>2021</b>	91	48	26.8	1
<b>2020</b>	75	39	69.6	1

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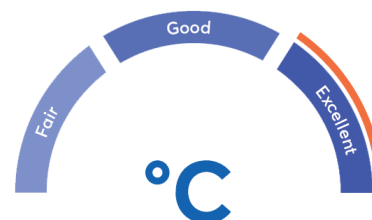
# Castellum sustainability governance

## Company description

Castellum is a real estate company in the Nordic region. Its business operations concern property development, management, acquisition, and sale of commercial premises. At the end of 2023, its property value was approximately 160 billion SEK and total leasable area was 5,485,000 square meters. The company is active throughout Sweden, in Copenhagen and the Helsinki area, as well as in Norway through its associated company, Entra. Castellum's asset portfolio has tenants in various industries, with one quarter coming from public sector tenants.

## Governance Assessment

Our assessment of Castellum's governance structure and processes gives it a rating of **Excellent**. Castellum has a business structure that facilitates sustainable business decisions, having solid procedures in place and senior management involved in both the development of the sustainability strategy and its implementation. Climate targets are integrated into decision-making processes. Its strategy to be net-zero across scope 1, 2 and 3 emissions by 2030 is accompanied by sub-targets for the years to come to make it easier to measure how it is performing on its main target. Castellum's net-zero target is encouraging and is planned to be achieved through activities that directly deliver emissions reductions, although in line with the SBTi a maximum of 10% of emissions can be compensated. Castellum's annual report outlines well its transition plans for how it will reach this target including for property management (mainly scope 1 and 2 emissions) as well as project development (scope 3) and the journey plan of their customers (scope 3).



It is especially positive that all Castellum's new developments and renovation and refurbishments have started to include re-used/circular materials, where materials that are new have to be able to be re-used when demolished.

Castellum has set policies based on best practices, for example by having its climate resilience strategy include the use of future climate scenarios. In 2023, Castellum worked with an external independent party to conduct further climate-risk assessments for properties that had previously identified as high risk. As part of this analysis it was estimated that the cost of mitigating the worst of these risks would require investments of SEK 82M, and the company aims to adapt these properties as part of already planned maintenance as well as future investments.

Castellum's policies, procedures and reporting follow well-established standards, as its targets have been validated by the Science-Based Targets Initiative and it reports according to the Task Force on Climate-related Financial Disclosures (TCFD). The reporting is transparent on the methodologies and assumptions that are used.

## Assessment of Castellum's activities

### Key performance indicators

#### GHG Emissions

Castellum's GHG emissions decreased across all scopes in 2023, with an overall reduction of 23% compared to 2022 levels. This translated into a reduction in emission intensity of 21% across the year. This reduction was mainly driven by a reduction in emissions related to purchased goods and services and downstream leased assets, both of which are measured under scope 3 emissions. Emissions related to purchased goods and services reduced due to reduced construction activities compared to the previous year, particularly new construction, as well as improved methods to allocate data into the correct sub-group of emissions. Meanwhile emissions related to downstream leased emissions reduced due to lower emissions factors in both Sweden and Finland.

Castellum continued its progress to phase out fossil fuels in 2023, including reducing the number of oil furnaces to two as at end 2023 (four in 2022). Furthermore, the company continues to make investments to improve energy efficiency, with SEK 381M invested in such projects over the year. At the same time the company reached its target to install 100 Solar PVs to properties by 2025, which also helped to reduce emissions associated with building energy use.

Castellum's use of district heating means that its carbon emissions are dependent on the fuel mix used by the district heating facilities. At present, Castellum engages with district heating suppliers, which represented 97% of the Group's total Scope 1 and 2 emissions in 2023. As at end 2023 45% of the company's district heating suppliers use renewable fuels, compared to 35% in 2022. Castellum is in dialogue with the district heating suppliers with the highest carbon emissions per kWh in order to influence these suppliers to reduce emissions.

**Table 2: The table summarises Castellum's CO<sub>2</sub>-emissions and main CO<sub>2</sub>-emission reduction targets**

Emissions	Total (tons CO <sub>2</sub> eq <sup>3</sup> )	Scope 1	Scope 2	Scope 3	Specific emissions (emissions intensity) (kgCO <sub>2</sub> eq/m <sup>2</sup> )
<b>Main Targets</b>	Carbon neutral by 2030				
<b>2023</b>	105,665	292	29,675	75,697	19.3
<b>2022</b>	137,996	550	31,091	106,355	24.3
<b>2021</b>	102,914	322	16,418	86,174	26.8
<b>2020</b>	308,857	284	18,128	290,175	69.6
<b>Change 2022- 2023</b>	-23%	-47%	-5%	-29%	-21%

<sup>3</sup> CO<sub>2</sub>e, carbon dioxide equivalent is a measurement term for greenhouse gas accounting.

<b>Main sources</b>		Refrigerants, business travel, natural gas, and oil	Electricity and district heating and cooling	Construction, waste, lease assets downstream and other fuel and energy related emissions in scope 3.	
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### Energy

In 2023 (with 2022 figures in paraesthesia), the total energy use was 456 GWh (472 GWh), corresponding to a measured energy intensity of 98 kWh/m<sup>2</sup> (96 kWh/m<sup>2</sup>) for the portfolio. As such, measured energy intensity increased by 2% over the year. The absolute energy use reduced primarily due to a reduction in number of properties that Castellum manages, to 709 as at end 2023 (749). The increase in energy intensity was due to generally colder weather in Sweden in 2023 compared to the year before, as well as a changing portfolio size in terms of m<sup>2</sup>.

On the other hand Castellum has set a target to reduce its energy consumption per square metre, for a like-for-like portfolio, by 11% in 2025 compared with 2021. The target, on a like-for-like basis, enables Castellum to track actual improvements in energy efficiency which are not simply related to changes in the portfolio, and is part of Castellum's management's incentive plan. Progress towards this target of 4% vs 2022 levels were made in 2023. According to the company, the key drivers for this improvement are related to their focus on energy efficiency measures and installation of on-site solar plants. Similarly, progress compared to 2021 levels is also 4%, meaning an approximately 7% improvement still needs to be made by end 2025 to meet the target.

The company also has further targets regarding the portfolio energy intensity. The short-term target is for 70% of the portfolio to have an energy intensity lower than 100 kWh/m<sup>2</sup> by 2025 (64% in 2023), and the long-term target is for all properties to have an energy intensity lower than 50 kWh/m<sup>2</sup> (27% in 2023). Additionally, the company targets to have 100% non-fossil fuel energy by 2030 at the latest. In 2023, it had 97% non-fossil fuel energy.

The energy mix by source has remained broadly consistent across the year.

<b>Table 3: Energy mix by source</b>		
<b>Energy source</b>	<b>2022</b>	<b>2023</b>
<b>Electricity (Renewable)</b>	23%	23%
<b>Geothermal</b>	1%	1%
<b>District heating</b>	75%	75%
<b>Fuels</b>	<1%	<1%

**Table 4: Energy use and main targets**

	Total (MWh)	Intensity (kWh/m <sup>2</sup> )
<b>Main Targets</b>		<ul style="list-style-type: none"> <li>- By 2025, 70% of the portfolio will have an energy consumption lower than 100kWh/m<sup>2</sup></li> <li>- Long-term goal is for the whole portfolio to have an energy consumption lower than 50kWh/m<sup>2</sup></li> </ul>
<b>2023</b>	455,606	98
<b>2022</b>	472,129	96
<b>2021</b>	294,111	91
<b>Change 2022-2023</b>	-3%	+2%

Castellum’s total waste reported from tenants increased by 27% increased in 2023 compared to 2022.

**Waste**

In 2023, the total waste generated by tenants where there was data available was 6,391 tons. The increase in waste reported compared to the previous year primarily reflects the increased scope of properties covered to 420 out of 709 properties in 2023 from 370 of 749 properties in 2022. Castellum provides waste management services for some of its properties, however currently does not provide a general waste management service due to the varying waste management setups and waste sorting methods used by different waste contractors in different cities. However, there are ongoing waste reduction initiatives within the organization. These initiatives include measures such as waste weighing, nudging activities, and providing information to tenants.

According to Castellum, it has a plan in place to establish a comprehensive waste management offering with the goal of reducing waste and enhancing waste sorting. This offering is planned to be accessible to all tenants by 2024, with pilots currently being carried out in collaboration with two different waste management companies. It is a part of the company's climate strategy for tenants and supports its science-based target to achieve carbon neutrality by 2030. The table below provides information on how waste was handled. Construction waste is not included in the table.

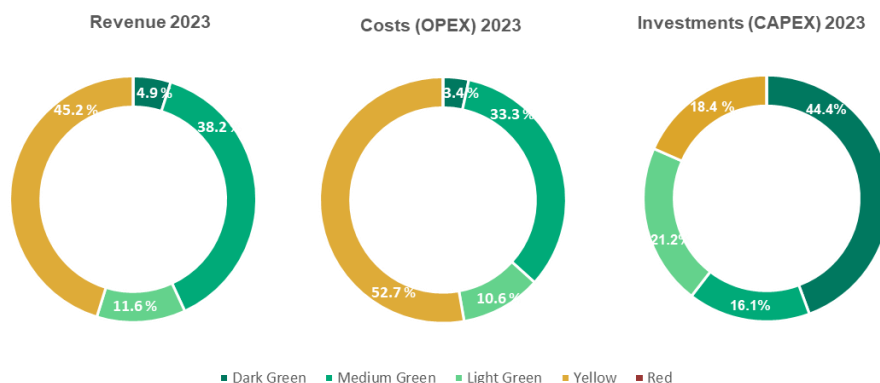
Castellum aims that by 2030, re-used and renewable materials will constitute ‘a significant element of all projects.’ To enable tracking of this objective, the company has implemented requirements to report amounts of re-used and renewable materials in its internal policies. Such reporting applies to all developments moving forwards.

Table 5: Management of reported waste from tenants					
	Non-hazardous waste sorting rate (%)			Waste (tonnes)	
	Landfill	Recycling	Incineration	Hazardous waste	Non-hazardous waste
<b>2023</b>	0.7%	46.0%	53.2%	68	6,322
<b>2022</b>	0.2%	40.6%	59.2%	61	4,985
<b>Change 2022-2023</b>	+237%	+13%	-10%	+11%	+27%

**Building certifications**

Castellum reached its target to have 50% of the asset portfolio (in sqm) environmentally certified by 2025 two years ahead of schedule (50% as at end 2023). This target has now been updated to aim for 75% of the asset portfolio to be environmentally certified by 2030. Examples of certifications used are EU Green Building, Miljöbyggnad, BREEAM, LEED and WELL, where BREEAM is the most used.

**Shading of Castellum’s revenue, operating expenses and investments**



**Figure 3: Shading of revenue, operating costs and capital expenditures in 2023 for Castellum**

The Shade of Green assigned to a property reflects its overall climate risk and environmental impact. We have assessed and allocated a shade of green to each property in the portfolio. The assessment has been positively influenced by our assessment of Castellum’s Governance Score of Excellent and the company’s ambitious sustainability strategy that is quantified and covers multiple important themes such as implementing re-use and recyclable materials in development projects.

Given Castellum’s governance and management of key issues, we have assigned a shade to each property, taking into account if it is new construction, a major redevelopment or an existing building. From a climate perspective, it is better to renovate existing buildings rather than build new ones, especially in the Nordic context where embodied emissions in building materials typically make up for 50% of total lifecycle emissions. Therefore, to qualify as green for newer buildings, the requirements for energy efficiency are higher than for existing buildings. For new buildings, we also assess material choices and how embodied emissions linked to the project are considered. Further, Castellum’s focus on energy management and climate resilience on a property level



mitigates some potential risks regarding transition and physical climate risks, which has influenced the shading for both existing and new buildings.

**Dark Green** is allocated to energy efficient properties with the highest levels of certifications or reused materials in renovations. For new construction, it is crucial to reduce embodied emissions from materials compared to the norm, and therefore new properties also need to focus on materials. Properties that qualify for Dark Green are:

- Existing properties that have an EPC of A and the highest level of certifications such as Miljöbyggnad “Guld” or LEED Platinum, and
- Existing properties with an EPC of A that also has reused materials in renovations.
- Existing properties with an EPC of B, that have onsite renewables, a high level of certifications or has been part of the reused materials initiative can also qualify for a Dark Green shading.
- New properties that can demonstrate an energy performance that is 30% better than regulation. They also have the highest level of certification, solar panels and are using low impact materials.
- There are a few properties that are not 30% better than regulation criteria that still have been allocated a Dark Green shading. These projects have an energy performance that is above 20% better than regulation and have been allocated a Dark Green shading because they are testing innovative technology such as waste-water recovery.
- For renovation projects, we shade the renovation activity itself to be dark green if the PED reduction is above 30%

**Medium Green** is allocated to properties that perform either with its energy performance or through its focus on reducing embodied emissions in the real estate sector. Properties that qualify for a Medium Green shading are:

- Existing properties with a high level of certifications accompanied with an EPC-label of B
- Properties with an EPC-label of A, that doesn't meet any of the other Dark Green criteria.
- Properties with an EPC-label of B or C, that have participated in Castellum's re-use and recycling of materials initiative.
- Existing properties within the top 15% of similar stock.
- New buildings that have an energy performance that is at least 20% better than current regulations, and a high level of certification.

**Light Green** is allocated to transition activities. Properties that qualify for Light Green are:

- Existing properties located in Sweden or Finland with a high level with an EPC-label of B, that does not qualify to be within the top 15% of similar stock.
- Existing properties in Sweden and Finland with a high level of certifications accompanied with an EPC-label of C
- Existing properties that have a design-phase certification with a high level, where there is no EPC-label
- New buildings that have a design-phase certification with a high level, but does not meet the criteria for Medium green
- For renovation projects, we shade renovation costs to Light Green if there are PED reductions that are below 30%

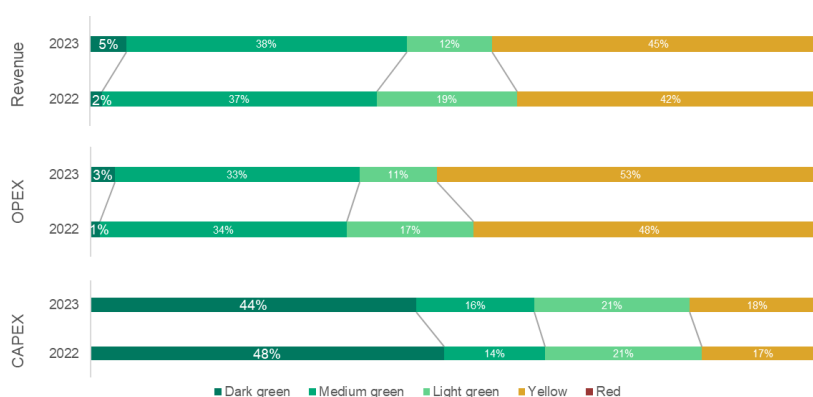
**Yellow** is allocated for properties that do not fulfil any of the criteria above.

No assets in Castellum's portfolio have been shaded Red, the shade allocated to projects and solutions that have no role to play in a low-carbon and climate resilient future. These are the heaviest emitting assets, with the most potential for lock in of emissions and is generally not applicable to Nordic real estate.

With these provisions, we find that for 2023 4.9% of rental revenue came from assets considered Dark Green, 38.2% from assets shaded Medium Green, 11.6% from assets shaded Light Green, and 45.2% from non-green assets shaded Yellow. Thus, 54.8% of the rental revenue came from assets with some shade of green.

Operating costs in 2023 were 3.4% Dark Green, 33.3% Medium Green, 10.6% Light Green and 52.7% was shaded Yellow. Thus, 47.3% of operating costs were associated with some shade of green.

Investments in 2023 were 44.4% Dark Green, 16.1% Medium Green, 21.2% Light Green and 18.4% was shaded Yellow. Thus, 81.6% of investments were associated with some shade of green.



**Figure 4: Shading of revenue, operating costs and capital expenditures for Castellum from 2022 to 2023.**

The total share of properties shaded green was 55% of revenues, 47% of OPEX and 82% of CAPEX in 2023 compared to 58% of revenues, 52% of OPEX and 83% of CAPEX in 2022. In total, 711 properties under management, nine new construction projects and five renovation projects in Castellum’s portfolio were assessed. The portfolio was relatively smaller in 2023 compared to 2022, as Castellum continued its plans to refine its portfolio geographically. Of the properties under management, we assessed 17 newly acquired properties, two of which were assigned light green. The other newly acquired buildings were all assigned a yellow shade as they did not meet any of the criteria outlined above required to achieve a green shade. There were no further new construction or renovation projects beyond those already assessed in 2023. However their shading was adjusted if their calculated energy performance compared to regulations had changed compared to the above-mentioned thresholds applied for shading.

The shading in this update is based on the same methodology Shades of Green used in 2023 to allow for a comparison of Castellum’s portfolio performance over time. Investors should be aware that our methodology is dynamic, as technology, regulations, and sector norms continuously evolve. If Castellum decides to complete a new full company assessment as required at the end of three years, we will use an updated methodology incorporating the latest sector information at that time.

Investors should note that our assessment is based on data reported or estimated by the company and has not always been verified by a third party. We analyse revenue, operating costs and capital expenditures, however there is typically not an explicit link between sustainability and financial data<sup>4</sup>. Our shading often requires allocating line items in financial statements to projects or products, for this we rely on the company’s internal allocation methods. In addition, there are numerous ways to estimate, measure, verify and report e.g. data on

<sup>4</sup> Most accounting systems do typically not provide a break-down of revenue and investments by environmental impact, and the analysis may therefore include imprecisions and may not be directly comparable with figures in the annual reporting

emissions, which may make direct comparisons between companies or regulatory criteria difficult and somewhat uncertain.

### Nasdaq Green Designation

Shades of Green confirms that Castellum meets the requirements for Nasdaq Green Equity Designation set out in the Nasdaq Green Equity Principles.

In 2023, 55% of Castellum’s turnover came from assets with some Shade of Green, exceeding the 50% threshold for green activities for company turnover. The sum of OPEX and CAPEX allocated a Shade of Green is 79%. This exceeds the 50 % threshold for investments, defined as the sum of CAPEX and OPEX. In 2023, Castellum had no turnover assessed shaded Red, meeting the threshold of less than 5% of the company’s turnover being derived from fossil fuel activities.

In addition, this report provides transparency on alignment of the company’s activities with the EU Taxonomy and transparency on the company’s environmental targets and KPIs is provided.

Investors should note that the statements above are the results of Shades of Green’s assessment. The awarding of the Green Designation to Castellum is subject to Nasdaq approval.

### EU Taxonomy Update

The mitigation criteria in the EU taxonomy includes specific thresholds and do no significant harm (DNSH) criteria for construction of new buildings, as well as acquisition and ownership of existing buildings.<sup>5</sup> Comments on alignment are given in the table below, and detailed thresholds, NACE-codes and likely alignment with DNSH criteria are given in Appendix 2.

**Table 6: Overall EU Taxonomy alignment**

<b>Overall EU Taxonomy alignment (Substantial contribution + DNSH + minimum safeguards)</b>	<b>Revenue</b>	<b>OPEX</b>	<b>CAPEX</b>
<b>Total share eligible (activities covered by criteria)</b>	100%	100%	100%
<b>Total share likely aligned to all criteria</b>	36.6%	37.2%	14.6%
<b>Total share likely aligned to substantial contribution criteria</b>	36.6%	37.2%	65.4%

**Table 7: Summary of alignment to 7.1 Construction of new buildings (NACE Code F41.1, F41.2)**

<b>Substantial contribution to mitigation</b>	<b>Full assessment from 2022</b>	<b>Updated comments on alignment</b>

<sup>5</sup> taxonomy-regulation-delegated-act-2021-2800-annex-1\_en.pdf (europa.eu)

<b>Mitigation Criteria</b>	<ul style="list-style-type: none"> <li>✓ 0% Revenue, 0% OPEX, 48.2% CAPEX</li> <li>✓ Castellum has provided information about 23 new building construction projects. We assess that all of the properties are likely aligned with the mitigation criteria. 48.2% of CAPEX is therefore likely aligned with the substantial contribution criteria</li> <li>✓ Castellum has confirmed that all its developments undergo testing for air-tightness and thermal integrity.</li> <li>✓ For buildings over 5000m2, the Global Warming Potential (GWP) of the building will be calculated.</li> </ul>	<ul style="list-style-type: none"> <li>✓ 0% Revenue, 0% OPEX, 52.7% CAPEX</li> <li>✓ Castellum has provided information about 9 new building construction projects. All except one are likely aligned with the mitigation criteria. 48.2% of CAPEX is therefore likely aligned with the substantial contribution criteria</li> </ul>
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<b>DNSH-criteria</b>	<b>Summary of assessment</b>	
<b>Climate Change Adaptation</b>	✓ Likely aligned	✓ Likely aligned
<b>Sustainable use and protection of water and marine resources</b>	✓ Likely aligned	✓ Likely aligned
<b>Transition to a circular economy (circular economy)</b>	<ul style="list-style-type: none"> <li>✓ Likely not aligned with 70% threshold for all projects started before end of 2022</li> <li>✓ Not possible to conclude on other circularity criteria due to uncertainty about interpretation of taxonomy thresholds</li> </ul>	<ul style="list-style-type: none"> <li>✓ Likely not aligned with 70% threshold for all projects started before end of 2022</li> <li>✓ Not possible to conclude on other circularity criteria due to uncertainty about interpretation of taxonomy thresholds</li> </ul>
<b>Pollution prevention and control</b>	✓ Not possible to conclude due to uncertainty about interpretation of taxonomy thresholds	✓ Not possible to conclude due to uncertainty about interpretation of taxonomy thresholds
<b>Protection and restoration of biodiversity and ecosystems</b>	✓ Likely aligned	✓ Likely aligned

**Table 8: Summary of alignment to 7.2 Renovation of existing buildings (NACE code F41 and F43)**

<b>Substantial contribution to mitigation</b>	<b>Full assessment from 2022</b>	<b>Updated comments on alignment</b>
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<b>Mitigation Criteria</b>	<ul style="list-style-type: none"> <li>✓ 0% Revenue, 0% OPEX, 13.4% CAPEX</li> <li>✓ Castellum has provided information about 12 renovation projects covered by this activity, where we have assessed that five of the projects are likely aligned to the mitigation criteria 2.8% of CAPEX is therefore likely aligned with the substantial contribution criteria.</li> </ul>	<ul style="list-style-type: none"> <li>✓ 0% Revenue, 0% OPEX, 10.9% CAPEX</li> <li>✓ Castellum has confirmed that it has included the requirement to reach a 30% reduction in primary energy demand (PED), for all new renovation projects, into its internal policies</li> <li>✓ Castellum has provided information about 5 renovation projects covered by this activity, where we have assessed that two of the projects are likely aligned to the mitigation criteria 2.6% of CAPEX is therefore likely aligned with the substantial contribution criteria.</li> </ul>
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<b>DNSH-criteria</b>	<b>Summary of assessment</b>	
<b>Climate Change Adaptation</b>	✓ Likely aligned	✓ Likely aligned
<b>Sustainable use and protection of water and marine resources</b>	✓ Likely aligned	✓ Likely aligned
<b>Transition to a circular economy (circular economy)</b>	<ul style="list-style-type: none"> <li>✓ Likely not aligned with 70% threshold for all projects started before end of 2022</li> <li>✓ Not possible to conclude on other circularity criteria due to uncertainty about interpretation of taxonomy thresholds</li> </ul>	<ul style="list-style-type: none"> <li>✓ Likely not aligned with 70% threshold for all projects started before end of 2022</li> <li>✓ Not possible to conclude on other circularity criteria due to uncertainty about interpretation of taxonomy thresholds</li> </ul>
<b>Pollution prevention and control</b>	✓ Not possible to conclude due to uncertainty about interpretation of taxonomy thresholds	✓ Not possible to conclude due to uncertainty about interpretation of taxonomy thresholds
<b>Protection and restoration of biodiversity and ecosystems</b>	✓ Likely aligned	✓ Likely aligned

**Table 9: Summary of alignment to 7.7 Acquisition and ownership of buildings (NACE Code L68)**

<b>Substantial contribution to mitigation</b>	<b>Full assessment from 2022</b>	<b>Updated comments on alignment</b>
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<b>Mitigation Criteria</b>	<ul style="list-style-type: none"> <li>✓ 100% Revenue, 100% OPEX, 38.4% CAPEX</li> <li>✓ In December 2022, Fastighetsägarna published an updated report defining the top 15% of the national building stock in Sweden. This report was used in the assessment to define the top 15% in Sweden.</li> <li>✓ For buildings built after 31 December 2020, the properties must meet the substantial mitigating criteria set by the activity 7.1 New construction. We find it reasonable to use the current building code (BBR29) as a proxy for Near Zero Energy Buildings (NZEB) in Sweden.</li> <li>✓ We currently have no information about the top 15% in Finland, and could therefore not assess alignment for buildings located in Finland.</li> <li>✓ According to Rådet for Bæredygtigt Byggeri<sup>6</sup>, buildings in Denmark need to have an EPC label of B or A2010 as a minimum. If the property is not covered by the requirement for energy labelling, an energy framework calculation for the building can be used for documentation. Buildings with an EPC of A or B were assessed to be aligned to the mitigation criterion.</li> <li>✓ 43.2% of revenue, 37.6% of OPEX, and 12.6% of CAPEX are likely aligned to the mitigation criteria.</li> <li>✓ Castellum has energy monitoring in place for all buildings, and works with its buildings to improve energy efficiency. Castellum is therefore likely aligned with the criteria stating that buildings should be efficiently operated through energy performance monitoring and assessment.</li> </ul>	<ul style="list-style-type: none"> <li>✓ 100% Revenue, 100% OPEX, 36.4% CAPEX</li> <li>✓ We still have no information about the top 15% in Finland, and could therefore not assess alignment for buildings located in Finland</li> <li>✓ The same thresholds as last year were applied in this year's assessment</li> <li>✓ 36.6% of revenue, 37.2% of OPEX, and 14.6% of CAPEX are likely aligned to the mitigation criteria.</li> </ul>
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DNSH-criteria	Summary of assessment	
<b>Climate Change Adaptation</b>	✓ Likely aligned	✓ Likely aligned

<sup>6</sup> The Council for Sustainable Construction is a Danish non-profit membership organization set up to promote sustainability in the construction and real estate industry.











## Terms and methodology

The aim of this analysis is to be a practical tool for investors, lenders and public authorities for understanding climate risk. Shades of Green encourages the client to make this assessment publicly available. If any part of the assessment is quoted, the full report must be made available. Our assessment, including on governance, is relevant for the reporting year covered by the analysis. This assessment is based on a review of documentation of the client’s policies and processes, as well as information provided to us by the client during meetings, teleconferences and email correspondence. In our review we have relied on the correctness and completeness of the information made available to us by the company.

### Shading corporate revenue and investments

Our view is that the green transformation must be financially sustainable to be lasting at the corporate level. We have therefore shaded the company’s current revenue generating activities, as well as investments and operating expenses.

The approach is an adaptation of the Shades of Green methodology for the green bond market. The Shade of Green allocated to a green bond framework reflects how aligned the likely implementation of the framework is to a low carbon and climate resilient future, and we have rated investments and revenue streams in this assessment similarly. We allocate a shade of green to the revenue stream and investments according to how these streams reflect alignment of the underlying activities to a low carbon and climate resilient future and taking into account governance issues.

Shading		Examples
	<b>Dark green</b> Is allocated to projects and solutions that corresponds to the long-term vision of a low-carbon and climate resilient future.	 Solar power plants
	<b>Medium green</b> Is allocated to projects and solutions that represent significant steps towards the long-term vision but are not quite there yet.	 Energy efficient buildings
	<b>Light green</b> Is allocated to transition activities that do not lock in emissions. These projects reduce emissions or have other environmental benefits in the near term rather than representing low carbon and climate resilient long-term solutions.	 Hybrid road vehicles
	<b>Yellow</b> Is allocated to projects and solutions that do not explicitly contribute to the transition to a low carbon and climate resilient future. This category also includes activities with too little information to assess.	 Health care services
	<b>Red</b> Is allocated to projects and solutions that have no role to play in a low-carbon and climate resilient future. There are the heaviest emitting assets, with the most potential for lock in of emissions and highest risk of stranded assets.	 New oil exploration

In addition to shading from dark green to red, Shades of Green also includes a governance score to show the robustness of the environmental governance structure. When assessing the governance of the company, Shades of Green looks at five elements: 1) strategy, policies and governance structure; 2) lifecycle considerations including supply chain policies and environmental considerations towards customers; 3) the integration of

climate considerations into their business and the handling of resilience issues; 4) the awareness of social risks and the management of these; and 5) reporting. Based on these aspects, an overall grading is given on governance strength falling into one of three classes: Fair, Good or Excellent. Please note this is not a substitute for a full evaluation of the governance of the issuing institution, and does not cover, e.g., corruption.

In March 2020, a technical expert group (TEG) proposed an EU taxonomy for sustainable finance that included a number of principles including “do-no-significant-harm (DNSH)-criteria” and safety thresholds for various types of activities<sup>7</sup>. In April 2021, EU published its delegated act to outline proposed criteria for climate mitigation and adaptation, which it was tasked to develop after the EU Taxonomy Regulation entered into law in July 2020. Shades of Green has assessed the mitigation criteria in the EU taxonomy that includes specific thresholds for activities relevant for the company<sup>8</sup>.

Do-No-Significant-Harm criteria include measures such as ensuring resistance and resilience to extreme weather events, preventing excessive water consumption from inefficient water appliances, ensuring recycling and reuse of construction and demolition waste and limiting pollution and chemical contamination of the local environment, as well as restriction on the type of land used for construction (no arable or forested land).

Shades of Green has assessed potential alignment against the mitigation thresholds and the DNSH criteria in the delegated acts published in April 2021.

In order to qualify as a sustainable activity under the EU regulation 2020/852 certain minimum safeguards must be complied with. The safeguards entail alignment with the OECD Guidelines for Multinational Enterprises and UN Guiding Principles on Business and Human Rights, including the International Labour Organisation’s (‘ILO’) declaration on Fundamental Rights and Principles at Work, the eight ILO core conventions and the International Bill of Human Rights. Shades of Green has completed a light touch assessment of the above social safeguards with a focus on human rights and labor rights risks<sup>9</sup>. We take the sectoral, regional and judicial context into account and focus on the risks likely to be the most material social risk.

Our assessment of alignment against the EU Taxonomy is based on a desk review of the listed source documents against the Taxonomy Delegate Act and following our own shading methodology.

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<sup>7</sup> Taxonomy: Final report of the Technical Expert Group on Sustainable Finance, March 2020. [TEG final report on the EU taxonomy \(europa.eu\)](#)

<sup>8</sup> [taxonomy-regulation-delegated-act-2021-2800-annex-1\\_en.pdf \(europa.eu\)](#)

<sup>9</sup> S&P Global Ratings Shades of Green is in the process of further developing its assessment method to ensure that it encompasses the object and purpose of the minimum safeguards.



## Appendix 1: Referenced documents list

Document Number	Document Name	Description
1	Castellum annual and sustainability report 2023	
2	Castellum annual and sustainability report 2022	
3	Castellum annual and sustainability report 2021	
4	Real estate data collection sheet 2023	Data collection sheet filled out by Castellum with data on single properties
5	New_sustainability-goals-2021	Castellum's sustainability goals summarised.
6	Klimatrisiker vid investeringsarenden	Example of Castellum's risk procedure
7	Analys av Primarenergital for de 15% basta byggnaderna i Sverige	Fastighetsägarna has made a report to determine the top 15% building stock in Sweden. Fastighetsägarna is a Swedish trade association for real estate companies.

## Appendix 2: EU Taxonomy criteria and alignment

Complete details of the EU taxonomy criteria are given in [taxonomy-regulation-delegated-act-2021-2800-annex-1\\_en.pdf \(europa.eu\)](#)

### 7.1 Construction of new buildings

Framework activity	Green buildings		
Taxonomy activity	7.1 Construction of new buildings (NACE Code F41.1, F41.2)		
	EU Technical mitigation criteria	Comments on alignment	Alignment
Mitigation criteria	<ul style="list-style-type: none"> <li>Substantial contribution to climate change mitigation</li> </ul> <p><b>Constructions of new building, eligible if:</b></p> <ul style="list-style-type: none"> <li>The Primary Energy Demand is at least 10 % lower than the threshold set for the nearly zero-energy building (NZEB) requirements in national regulation. The energy performance is certified using an Energy Performance Certificate (EPC).</li> <li>For buildings larger than 5000 m<sup>2</sup>, upon completion, the building resulting from the construction undergoes testing for air-tightness and thermal integrity, and any deviation in the levels of performance set at the design stage or defects in the building envelope are disclosed to investors and clients. As an alternative; where robust and traceable quality control processes are in place during the construction process this is acceptable as an alternative to thermal integrity testing.</li> <li>For buildings larger than 5000 m<sup>2</sup>, the life cycle Global Warming Potential (GWP) of the building resulting from the construction has been calculated for each stage in the life cycle and is disclosed to investors and clients on demand.</li> </ul>	<p><b>Contextual information</b></p> <ul style="list-style-type: none"> <li>Energy requirements set in BBR (Swedish building regulations) is defined as NZEB in Sweden.</li> <li>In Sweden, climate calculations establishing the GWP for the construction phase are a regulatory requirement since 1 January 2022. The requirement is only valid for properties seeking a construction permit after 1 January 2022. This only covers phase A of construction, while the criterion in the taxonomy refers to phase A-C.</li> </ul> <p><b>Information provided by the issuer</b></p> <ul style="list-style-type: none"> <li>For upcoming construction projects, Castellum aims to meet the NZEB 10% threshold and will take this into consideration in the planning and construction projects</li> <li>Castellum has confirmed that all its developments undergo testing for air-tightness and thermal integrity.</li> <li>For buildings over 5000m<sup>2</sup>, the Global Warming Potential (GWP) of the building will be calculated.</li> </ul>	<p><b>0% of revenue, 0% of OPEX, and 52.7% of CAPEX eligible</b></p> <p><b>0% of revenue, 0% of OPEX, and 48.2% of CAPEX likely aligned</b></p>
	EU Taxonomy DNSH-criteria	Comments on alignment	Alignment

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<p>Climate change adaptation</p>	<p>The physical climate risks that are material to the activity have been identified (chronic and acute, related to temperature, wind, water, and soil) by performing a robust climate risk and vulnerability assessment with the following steps<sup>10</sup>:</p> <ul style="list-style-type: none"> <li>(a) screening of the activity to identify which physical climate risks from the list in Section II of this Appendix may affect the performance of the economic activity during its expected lifetime;</li> <li>(b) where the activity is assessed to be exposed to physical climate risks, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;</li> <li>(c) an assessment of adaptation solutions that can reduce the identified physical climate risk.</li> </ul> <p>The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports, scientific peer-reviewed publications, and open source or paying models.</p> <p>For existing activities and new activities using existing physical assets, the economic operator implements physical and non-physical solutions ('adaptation solutions'), over a period of time of up to five years, that reduce the most important identified physical climate risks that are material to that activity. An adaptation plan for the implementation of those solutions is drawn up accordingly.</p> <p>For new activities and existing activities using newly-built physical assets, the economic operator integrates the adaptation solutions that reduce the most important identified physical climate risks that are material to that activity at the time of design and construction and has implemented them before the start of operations.</p> <p>The adaptation solutions implemented do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities; are consistent with local, sectoral, regional or national adaptation strategies and plans; and</p>	<p><b>Information provided by the issuer</b></p> <ul style="list-style-type: none"> <li>• In 2022, Castellum had independent experts conduct a climate risk assessment of the entire portfolio at the property level for the purpose of assessing and identifying which properties were exposed to physical climate-related risks. The analysis was conducted in accordance with Appendix A and Table II, Classification of climate related hazards. The vulnerability of the properties was assessed based on a changed climate. The physical climate risks that are material to the operation have been identified using a robust climate risk and vulnerability analysis. The latest scientific discoveries and methods were taken into account. The analysis identified the following risks as the most relevant for assessment:             <ul style="list-style-type: none"> <li>• Flooding from oceans</li> <li>• Flooding from lakes and watercourses</li> <li>• Flooding from torrential rains</li> <li>• Heat stress</li> <li>• Ground stability (landslides and erosion)</li> <li>• Snowfall</li> </ul> </li> </ul> <p>By assessing the properties according to risk level, the company can determine which of them should be prioritised. The results showed that 7 per cent of the property value is exposed to high risk.</p> <ul style="list-style-type: none"> <li>• For those more exposed properties, there is an action plan: the properties will be analysed more thoroughly and relevant investments and initiatives that will be implemented to adapt the properties to a changed climate and increase their resilience will be defined.</li> <li>• In 2023, Castellum worked with an external independent party to conduct further climate-risk assessments for properties that had previously identified as high risk. As part of this analysis it was estimated that the cost of mitigating the worst of these risks would require investments of SEK 82M, and the company aims to adapt these properties as part of</li> </ul>	<p><b>Likely aligned</b></p>
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<sup>10</sup> The Taxonomy is referring to Appendix A in the Taxonomy Annex 1.

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	<p>consider the use of nature-based solutions or rely on blue or green infrastructure to the extent possible.</p>	<p>already planned maintenance as well as future investments.</p>	
<p>Sustainable use and protection of water and marine resources</p>	<p>Where installed, except for installations in residential building units, the specified water use for the following water appliances are attested by product datasheets, a building certification or an existing product label<sup>11</sup> in the Union, in accordance with the technical specifications:</p> <ul style="list-style-type: none"> <li>(a) wash hand basin taps and kitchen taps have a maximum water flow of 6 litres/min;</li> <li>(b) showers have a maximum water flow of 8 litres/min;</li> <li>(c) WCs, including suites, bowls and flushing cisterns, have a full flush volume of a maximum of 6 litres and a maximum average flush volume of 3,5 litres;</li> <li>(d) urinals use a maximum of 2 litres/bowl/hour. Flushing urinals have a maximum full flush volume of 1 litre.</li> </ul> <p>To avoid impact from the construction site, the activity complies with the criteria in the EU Water Framework Directive<sup>12</sup>.</p> <p>Where an Environmental Impact Assessment is carried out in accordance with Directive 2011/92/EU<sup>13</sup> and includes an assessment of the impact on water in accordance with the Water Framework Directive, no additional assessment of impact on water is required, provided the risks identified have been addressed.</p>	<p><b><u>Contextual information</u></b></p> <ul style="list-style-type: none"> <li>• General planning is the responsibility of the municipality and EIAs will be carried out on municipality level where required by national law. This includes a plan for impacts on water sources.</li> </ul> <p><b><u>Information provided by the issuer</u></b></p> <ul style="list-style-type: none"> <li>• Castellum has informed us that the technical specifications for water appliances have now been implemented for both new and existing projects.</li> </ul>	<p><b>Likely aligned</b></p>

<sup>11</sup> The Taxonomy is referring to Appendix E in the Taxonomy Annex 1.

<sup>12</sup> Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy

<sup>13</sup> DIRECTIVE 2011/92/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the assessment of the effects of certain public and private projects on the environment.

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<p>Transition to a circular economy  (circular economy)</p>	<ul style="list-style-type: none"> <li>At least 70 % (by weight) of the non-hazardous construction and demolition waste (excluding naturally occurring material<sup>14</sup>) generated on the construction site is prepared for re-use, recycling and other material recovery, including backfilling operations using waste to substitute other materials.</li> <li>Operators limit waste generation in processes related to construction and demolition.</li> <li>Building designs and construction techniques support circularity and in particular demonstrate how they are designed to be more resource efficient, adaptable, flexible and dismantlable to enable reuse and recycling.</li> </ul>	<p><b>Contextual information</b></p> <ul style="list-style-type: none"> <li>In Sweden, some sorted waste is sent for incineration to district heating facilities. This waste cannot be counted towards the 70%.</li> <li>For the criterion to implement building designs and construction techniques support circularity, Guidance from the EU suggest that one needs to be better than average to comply. As there are not clear metrics on how to demonstrate that one is better than average, it is currently not enough information to judge whether projects fulfil the criterion.</li> </ul> <p><b>Information provided by the issuer</b></p> <ul style="list-style-type: none"> <li>The company sets requirements for the contractors, for example making it mandatory having waste plans in projects. Specific targets for each individual project are also set.</li> <li>Castellum has adopted demands to fulfil the taxonomy criteria and DNSH for all developments after 2022, and therefore developments started in 2023 will likely be aligned with the 70% threshold</li> <li>Castellum has a set threshold regarding landfilling of waste. Maximum 5% is sent for landfilling and there can be max 20kg/m2 waste for its developments.</li> <li>It also informed us that it sets demands for new construction materials so that they can be re-used when demolished and also demand the use of re-used materials during the construction phase.</li> </ul>	<p><b>Likely not aligned with 70% threshold for ongoing projects started before end of 2022. However more recent projects should meet this threshold as per Castellum’s updated policy requirements</b></p> <p><b>Not possible to conclude on other circularity criteria due to uncertainty about interpretation of taxonomy thresholds</b></p>
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<sup>14</sup> Refer to the European List of Waste established by Commission Decision 2000/532/EC

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<p>Pollution prevention and control</p>	<ul style="list-style-type: none"> <li>• Building components and materials used in the construction comply with the criteria set out in Appendix C to the Taxonomy Annex 1.</li> <li>• For building components and materials used in the construction that may come into contact with occupiers’ formaldehyde emissions are within relevant limits<sup>15</sup>.</li> <li>• Where the new construction is located on a potentially contaminated site (brownfield site), the site has been subject to an investigation for potential contaminants<sup>16</sup>.</li> <li>• Measures are taken to reduce noise, dust and pollutant emissions during construction or maintenance works.</li> </ul>	<p><b><u>Contextual information</u></b></p> <ul style="list-style-type: none"> <li>• Two Swedish sector organizations (Fastighetsägarna and Byggingustierna) are currently leading the process of getting sector-specific interpretations to Appendix C.</li> <li>• Measures to reduce noise, dust and pollutant emissions during construction and maintenance is regulated by law and the Swedish “miljöbalken”<sup>17</sup>.</li> <li>• All the construction projects need to have a plan for how these issues are addressed in a construction project and is disclosed to and followed up by the municipality before, during and after the construction phase.</li> </ul> <p><b><u>Information provided by the issuer</u></b></p> <ul style="list-style-type: none"> <li>• Castellum use Byggvarubedömningen<sup>18</sup> and only use recommended or accepted products.</li> </ul>	<p><b>Not possible to conclude due to uncertainty about interpretation of taxonomy thresholds</b></p>
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<sup>15</sup> Emit less than 0,06 mg of formaldehyde per m<sup>3</sup> of material or component and less than 0,001 mg of categories 1A and 1B carcinogenic volatile organic compounds per m<sup>3</sup> of material or component, upon testing in accordance with CEN/TS 16516522 and ISO 16000-3 523 or other comparable standardised test conditions and determination method.

<sup>16</sup> Standard ISO 18400 can be used.

<sup>17</sup> “Miljöbalken” is the Central Environmental Act in Sweden which came into force in 1999 and consolidates and has strengthened the previous environmental legislation. The overall purpose of the Environmental Code is to promote long-term sustainable development.

<sup>18</sup> Byggvarubedömningen is a non-profit organization owned by large constructors and property owners in Sweden. The organization has formulated evaluation standards for appraising construction products and has established a database. Assessments encompass factors such as chemical composition, product lifecycle, and social responsibility at the supplier level. The results of these evaluations are subsequently categorized into three levels: Recommended (green), Accepted (yellow), and Avoid (red), and are accessible in the assessment database.

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<p>Protection and restoration of biodiversity and ecosystems</p>	<ul style="list-style-type: none"> <li>An Environmental Impact Assessment (EIA) or screening should be completed in accordance with national provisions<sup>19</sup>.</li> <li>Where an EIA has been carried out, the required mitigation and compensation measures for protecting the environment are implemented.</li> <li>For sites/operations located in or near biodiversity-sensitive areas (including the Natura 2000 network of protected areas, UNESCO World Heritage sites and Key Biodiversity Areas, as well as other protected areas), an appropriate assessment where applicable, has been conducted and based on its conclusions the necessary mitigation measures are implemented.</li> <li>The new construction should not be built on one of the following:             <ol style="list-style-type: none"> <li>arable land and crop land;</li> <li>greenfield land of recognised high biodiversity value and land that serves as habitat of endangered species (flora and fauna) listed on the European Red List or the IUCN Red List.</li> <li>land matching the definition of forest as set out in national law used in the national greenhouse gas inventory, or where not available, is in accordance with the FAO definition of forest<sup>20</sup>.</li> </ol> </li> </ul>	<p><b>Contextual information</b></p> <ul style="list-style-type: none"> <li>In Sweden, general planning is the responsibility of the municipality and EIAs will be carried out on municipality level. Before construction on new land is permitted, the builder needs to prepare a detailed plan and receive a building permit. Land that is covered by area protection according to the Planning and Building Acts includes Natura 2000, nature reserves and animal and plant protection areas, and construction is not permitted. This is stated in the general and detailed plan for each municipality. The company has confirmed that no new construction is built on the areas listed in (a), (b), and (c) of this DNSH criteria, which is considered to be covered by the building permit.<sup>21</sup></li> </ul>	<p><b>Likely aligned</b></p>
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7.2 Renovation of existing buildings

<p><b>Framework activity</b></p>	<p>Green buildings</p>		
<p><b>Taxonomy activity</b></p>	<p>7.2 Renovation of existing buildings (NACE code F41 and F43)</p>		
	<p><b>EU Technical mitigation criteria</b></p>	<p><b>Comments on alignment</b></p>	<p><b>Alignment</b></p>

<sup>19</sup> The Taxonomy is referring to Appendix D in the Taxonomy Annex 1.

<sup>20</sup> Land spanning more than 0,5 hectares with trees higher than five meters and a canopy cover of more than 10 %, or trees able to reach those thresholds in situ. It does not include land that is predominantly under agricultural or urban land use, FAO Global Resources Assessment 2020. Terms and definitions: <http://www.fao.org/3/I8661EN/i8661en.pdf>.

<sup>21</sup> [https://www.fastighetsagarna.se/globalassets/bilder/fakta/taxonomi/dokument/fa-bf-taxonomi-tolkning-av-aktivitet-71-72-och-77-rev-230605\\_1-1.pdf?bustCache=1694014259346](https://www.fastighetsagarna.se/globalassets/bilder/fakta/taxonomi/dokument/fa-bf-taxonomi-tolkning-av-aktivitet-71-72-och-77-rev-230605_1-1.pdf?bustCache=1694014259346)

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Mitigation criteria	<ul style="list-style-type: none"> <li>Substantial contribution to climate change mitigation</li> </ul> <p><b>Renovation of existing buildings, eligible if:</b></p> <ul style="list-style-type: none"> <li>The reduction of primary energy demand (PED) must be at least 30%.</li> </ul>	Since the last assessment Castellum has formally adopted the threshold for a 30% reduction of PED, for its renovation projects, into its internal policies.	<p><b>0% of revenue, 0% of OPEX, and 10.9% of CAPEX eligible</b></p> <p><b>0% of revenue, 0% of OPEX, and 2.6% of CAPEX likely aligned</b></p>
	<b>EU Taxonomy DNSH-criteria</b>		<b>Alignment</b>
Climate change adaptation	<ul style="list-style-type: none"> <li>Please refer to Construction of new buildings.</li> </ul>	Please refer to Construction of new buildings.	
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> <li>Where installed, except for installations in residential building units, the specified water use for the following water appliances are attested by product datasheets, a building certification or an existing product label<sup>22</sup> in the Union, in accordance with the technical specifications: <ul style="list-style-type: none"> <li>(e) wash hand basin taps and kitchen taps have a maximum water flow of 6 litres/min;</li> <li>(f) showers have a maximum water flow of 8 litres/min;</li> <li>(g) WCs, including suites, bowls and flushing cisterns, have a full flush volume of a maximum of 6 litres and a maximum average flush volume of 3,5 litres;</li> <li>(h) urinals use a maximum of 2 litres/bowl/hour. Flushing urinals have a maximum full flush volume of 1 litre.</li> </ul> </li> </ul>	Please refer to Construction of new buildings.	
Transition to a circular economy  (circular economy)	Please refer to Construction of new buildings.	Please refer to Construction of new buildings.	
Pollution prevention and control	<ul style="list-style-type: none"> <li>Building components and materials used in the construction comply with the criteria set out in Appendix C to the Taxonomy Annex 1.</li> <li>Building components and materials used in the construction that may come into contact with occupiers emit less than 0,06 mg of formaldehyde per m<sup>3</sup> of material or</li> </ul>	Please refer to Construction of new buildings.	

<sup>22</sup> The Taxonomy is referring to Appendix E in the Taxonomy Annex 1.



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	<p>component and less than 0,001 mg of carcinogenic volatiles<sup>23</sup>.</p> <ul style="list-style-type: none"> <li>Measures are taken to reduce noise, dust and pollutant emissions during construction or maintenance works.</li> </ul>		
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**7.7 Acquisition and ownership of buildings**

<p><b>Framework activity</b></p>	<p><b>Green buildings</b></p>		
<p><b>Taxonomy activity</b></p>	<p><b>7.7 Acquisition and ownership of buildings (NACE Code L68)</b></p>		
	<p><b>EU Technical mitigation criteria</b></p>	<p><b>Comments on alignment</b></p>	<p><b>Alignment</b></p>
<p>Mitigation criteria</p>	<ul style="list-style-type: none"> <li>Substantial contribution to climate change mitigation</li> </ul> <p><b>Acquisition and ownership of buildings, eligible if:</b></p> <ul style="list-style-type: none"> <li>For buildings built before 31 December 2020, the building has at least Energy Performance Certificate (EPC) class A. As an alternative, the building is within the top 15% of the national or regional building stock expressed as operational Primary Energy Demand (PED) and demonstrated by adequate evidence, which at least compares the performance of the relevant asset to the performance of the national or regional stock built before 31 December 2020 and at least distinguishes between residential and non-residential buildings.</li> <li>For buildings built after 31 December 2020, the building meets the criteria set out for the activity ‘construction of new buildings’.</li> <li>Where the building is a large non-residential building it is efficiently operated through energy performance monitoring and assessment.</li> </ul>	<ul style="list-style-type: none"> <li>Fastighetsägarna <sup>24</sup> has published an updated report defining the energy efficiency of the top 15% of the national building stock. We consider the updated report to provide adequate evidence for the energy efficiency of the top 15% of the national building stock.</li> <li>For buildings built after 31 December 2020, where the properties must meet the substantial mitigating criteria set by the activity 7.1 new construction. We find it reasonable to use the current building code (BBR29) as a proxy for Near Zero Energy Buildings (NZEB) in Sweden.</li> <li>According to Rådet for Bæredygtigt Byggeri<sup>25</sup>, buildings need to have an EPC label of A2010 as a minimum. If the property is not covered by the requirement for energy labelling, an energy framework calculation for the building can be used for documentation.</li> <li>There is currently no public information defining the energy efficiency of the top 15% of the Finnish building stock, therefore there is currently not enough</li> </ul>	<p><b>100% of revenue, 100% of OPEX, and 36.4% of CAPEX eligible</b></p> <p><b>36.6% of revenue, 37.2% of OPEX, and 14.6% of CAPEX likely aligned</b></p>

<sup>23</sup> Categories 1A and 1B carcinogenic volatile organic compounds per m<sup>3</sup> of material or component, upon testing in accordance with CEN/TS 16516522 and ISO 16000-3 523 or other comparable standardised test conditions and determination method.

<sup>24</sup> [Topp 15 och 30% \(fastighetsagarna.se\)](https://www.fastighetsagarna.se)

<sup>25</sup> Green Building Council Denmark: [Taksonomivejledning v. 2.0 for 7.7 Erhvervelse og ejerskab af eksisterende ejendom.pdf \(bubble.io\)](https://www.gbc.dk/taksonomivejledning-v-2.0-for-7.7-erhvervelse-og-ejerskab-af-eksisterende-ejendom.pdf)

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	<p>For buildings built after 31 December 2020, buildings are eligible if:</p> <ul style="list-style-type: none"> <li>The Primary Energy Demand is at least 10 % lower than the threshold set for the nearly zero-energy building (NZEB) requirements in national regulation. The energy performance is certified using an Energy Performance Certificate (EPC).</li> </ul>	<p>information to assess buildings located in Finland.</p> <ul style="list-style-type: none"> <li>Castellum has energy monitoring in place for all buildings, and work with its buildings to improve energy efficiency. Castellum is therefore likely aligned with the criteria stating that buildings should be efficiently operated through energy performance monitoring and assessment.</li> </ul>	
	<b>EU Taxonomy DNSH-criteria</b>	<b>Comments on alignment</b>	<b>Alignment</b>
Climate change adaptation	Please refer to Construction of new buildings.	Please refer to Construction of new buildings.	

## Appendix 3: About Shades of Green

S&P Global Ratings Shades of Green provides independent, research-based second party opinions (SPOs) of green financing frameworks as well as climate risk and impact reporting reviews of companies. At the heart of all our SPOs is the multi-award-winning Shades of Green methodology, which assigns shadings to investments and activities to reflect the extent to which they contribute to the transition to a low carbon and climate resilient future.

Shades of Green Company Assessments indicate the greenness of a company by providing a shading of revenues, operating costs and capital expenditures, as well as an assessment the company's governance structure. Shades of Green also provides second opinions on institutions' frameworks and guidance for assessing and selecting eligible projects for green, sustainability and sustainability-linked bond investments. Shades of Green is internationally recognized as a leading provider of independent reviews of green bonds, since the market's inception in 2008. Shades of Green is independent of the company being assessed, its directors, senior management and advisers, and is remunerated in a way that prevents any conflicts of interests arising as a result of the fee structure. Shades of Green operates independently from the financial sector and other stakeholders to preserve the unbiased nature and high quality of assessments.



ESG Opinion Provider of the Year



Largest External Review Provider in Number of Deals for Shades of Green



ESG Assessment Tool of the Year - Ratings



External Assessment Provider of the Year

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