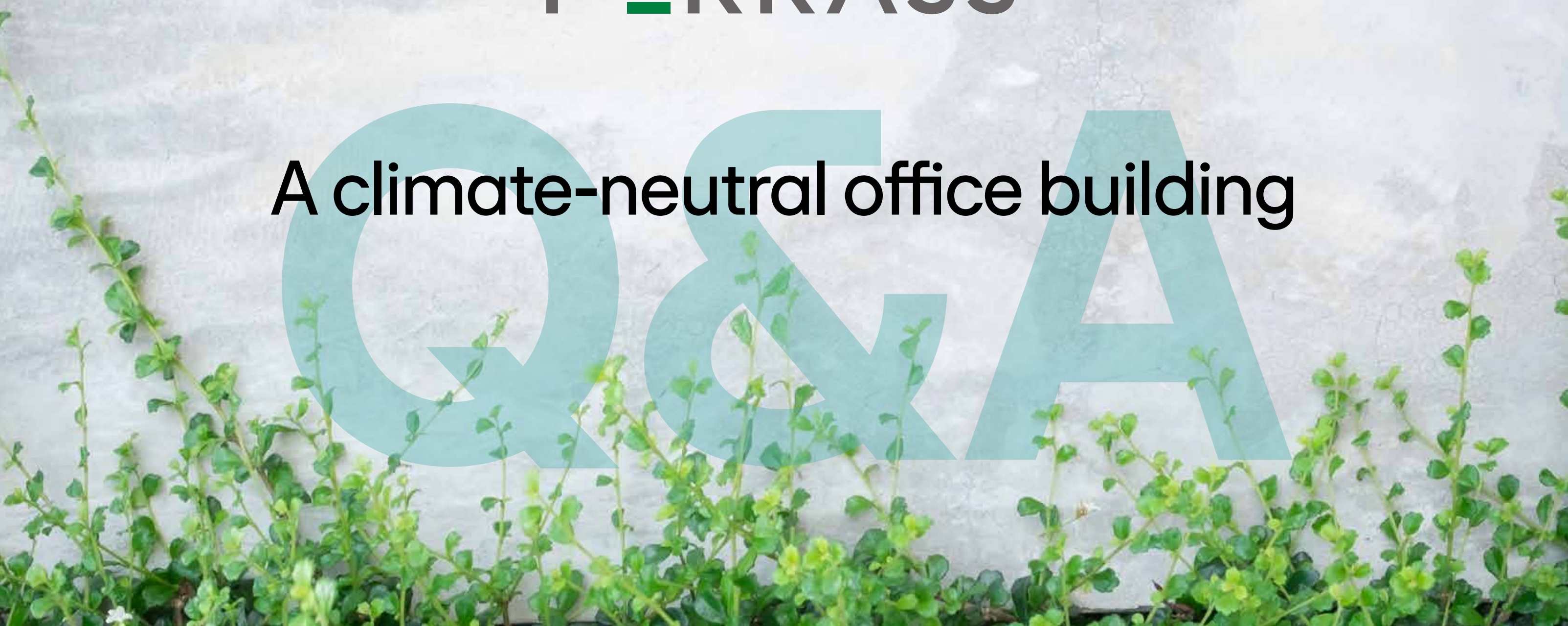


SKANSKA

HYLLIE

TERRASS

A climate-neutral office building



Tip!

It's more climate-friendly to read this on a screen than to print it out.

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What is Hyllie Terrass?

With its innovative architecture, Hyllie Terrass will be one of Sweden's most sustainable office buildings, built to have a net-zero climate footprint over its lifetime. Sustainability permeates everything, from the frame of the building to the green terraces.

Hyllie Terrass is located in Malmö's most sustainable neighbourhood, Hyllie. There are great opportunities here for companies and for people who want to live, work and travel in a climate-smart and resource-efficient way. The City of Malmö wants the neighbourhood to serve as a global role model for sustainable urban development. For example, smart energy solutions for tomorrow are developed and tested here, with the aim that 100 percent of the energy used be from renewable or recycled sources. Hyllie's sustainable and innovative profile encourages countless global and innovative companies to establish themselves here.

Every choice is thoroughly assessed in order to minimise its climate footprint

The goal of minimising Hyllie Terrass' climate footprint influences each and every detail in the building. The minimalist façade has been chosen because of its smaller footprint. The terraces are not only good for wellbeing but also benefit biodiversity and collect rainwater. And as much of the furnishings and materials as possible are sustainable, recycled, or locally made.

Hyllie Terrass will have environmental and health certification according to LEED and WELL. In addition, we're pre-certified according to the recently developed NollCO₂ certification for climate-neutral buildings.

On the following pages, we've compiled questions and answers regarding our sustainability work at Hyllie Terrass, the NollCO₂ certification, and why we at Skanska think it's important to design sustainable buildings.



Facts

- Skrivaregatan, Hyllie, Malmö
- 12 levels
- 200 to 14,000 sqm of office and service facilities
- Certified in accordance with LEED, WELL & NollCO₂
- Developed by Skanska Öresund
- Designed by Cobe Arkitekter
- Occupation spring 2023

What does the NollCO₂ certification of Hyllie Terrass mean?

In order to be certified according to NollCO₂, Hyllie Terrass must be capable of achieving a net-zero climate footprint throughout its useful life, which requires a holistic approach whereby all the stakeholders in the building's construction co-operate to minimise its climate footprint from start to finish.

The certification, developed by the Sweden Green Building Council, is an add-on certification to Miljöbyggnad, BREEAM-SE, LEED, and the Swan eco-label. Skanska signed up back in 2018, putting Hyllie Terrass forward as a pilot project for the development of the certification. The first oven-ready version of NollCO₂ was launched in September 2020.

The NollCO₂ certification requires the project to reduce its total climate footprint in terms of not only materials, but also the building's production and operation. To have a chance of success, Hyllie Terrass' inherent climate footprint must not exceed a strict threshold, which is measured in carbon dioxide equivalents. These measurements take the form of careful lifecycle calculations that lead to considered choices in terms of design, materials, and energy systems, in combination with a climate-smart construction process.

What does a net-zero lifetime climate footprint mean?

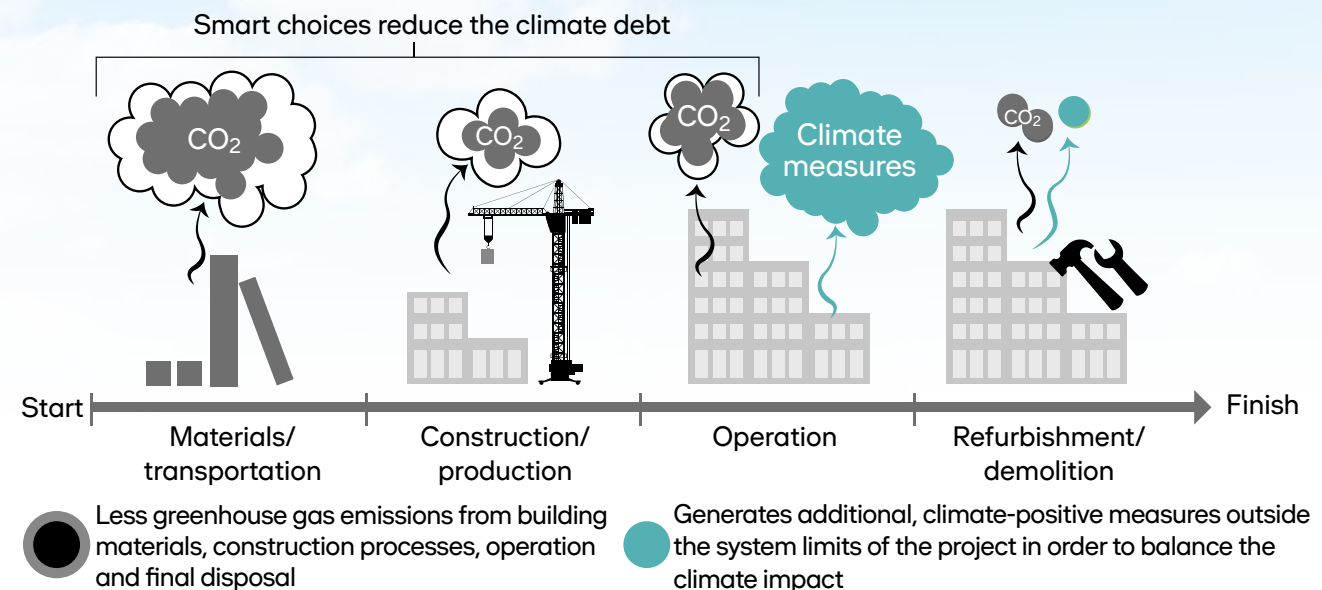
According to the NollCO₂ guidelines, the useful life of Hyllie Terrass is 50 years (although the building will of course be in use for much longer than that). This is the period for which the calculations of the building's climate neutrality are made. A net-zero climate footprint means that during these 50 years, Hyllie Terrass will have given back as much as it has taken in climate terms. The Sweden Green Building Council, as a third party, verifies and follows up on NollCO₂.

Despite extensive measures to reduce the building's climate footprint, the project once completed will have a climate debt. Under the NollCO₂ rules, this built-in climate debt must be balanced within five years by way of climate measures to achieve a net-zero climate footprint. The operation of the building – that is to say the climate footprint from electricity, energy, and water consumption – must be balanced annually to net-zero over the functional lifetime of the building.



NollCO₂
NETTONOLL KLIMATPÅVERKAN

[Find out more about NollCO2 on the Sweden Green Building Council's website](#)





Why does Skanska want to have Hyllie Terrass NollCO₂-certified?

The building and construction sector accounts for a fifth of Sweden's total climate footprint. Skanska's goal is for our entire value chain, including all of our subcontractors and transport, to be climate-neutral by 2045. If we're to achieve this goal, we must work together to accelerate the transition. And we have to start now. If we wait until all the technical solutions are in place, it will be too late.

Supporting and using independent environmental certification systems for construction and civil engineering projects is important both for raising the industry standard and for continuously evolving as an organisation. At Skanska, we've chosen to collaborate with the Sweden Green Building Council to contribute to the development of a sustainable construction industry.

The certification of Hyllie Terrass will be the next step on our sustainability journey. We know that to bring about real change, we must dare to ask questions that no one yet knows the answer to. We have to listen and solve problems in new ways. We have to find new forms of co-operation and collaboration with our suppliers and other partners. With NollCO₂ certification, we want to take the initiative and test new ways of doing things. We then want to share our solutions and what we've learnt with the rest of the industry.

“As a social builder, Skanska has a huge responsibility to drive the industry forwards when it comes to sustainability.”

Stefan Andersson, Project Development Manager

What's being done to achieve NollCO₂ certification for Hyllie Terrass?

In order to fall within the set threshold, we need to work closely with our suppliers and other partners to investigate alternatives and different approaches. Collaboration, open discussion, and asking questions are the most important actions we can take to bring about concrete measures at Hyllie Terrass.

The certification is a challenge, to say the least. In order to reduce the climate footprint, several efforts, big and small, are being made in the project. Among other things, the concrete recipes are being amended to reduce their climate footprint, the steel structure is being manufactured largely from recycled materials, the glass sections are being manufactured locally using electricity from renewable sources and consist of a high proportion of recycled aluminium, and the carpets are cradle-to-cradle certified. Our designers have also undertaken to optimise all of the building components to reduce the amount of built-in material.

In addition to measures relating to the building itself, we also require that production be run with as small a footprint as possible. We're achieving this through Skanska's own environmental label: Fossil-free Green Construction Site. Among other things, this requires fossil-free energy sources and fuels for the machinery and vehicles used at the construction site and for deliveries to and from the construction site.



Above are some examples of the project's environmental initiatives and how we plan to meet the requirements for certification.

Three examples of how we're reducing Hyllie Terrass' climate footprint

At Hyllie Terrass, each individual component is carefully assessed and selected according to its climate footprint. Here are three innovative examples of solutions that leave a small footprint but help the building make a big impression.

From construction waste to timeless furniture design

The entrance lobby of Hyllie Terrass boasts furniture made from waste materials from the construction site. Skanska, Swedese, and furniture designer Louise Hederström have joined forces in a unique collaboration that will result in a reception desk, sofa made in-situ, barstools, standing tables, and sculptural elements made from completely recycled materials.

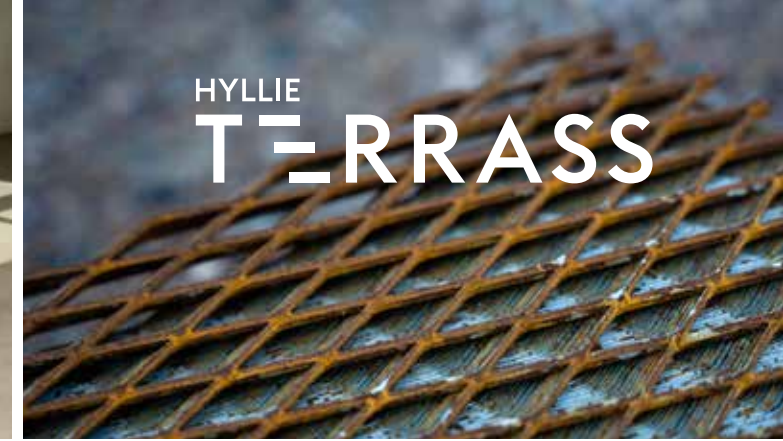
Climate-smart soil enrichment

The construction waste will not only be turned into stylish furniture, it will also be transformed into climate-smart biochar. Skanska's own biochar boiler burns residual material into charcoal using a completely climate-neutral and closed process that does not emit any carbon dioxide. The biochar is then mixed with the soil on our planted terraces to help increase water and nutrient retention.

Greenery for people and pollinators

On the terraces, you'll be greeted by undulating plant beds filled with seeds and fruit-bearing plants chosen for their aesthetic and recreational value. Together, they form a verdant outdoor space where both insects and people can thrive.

The terraces also serve as a detention area that collects rainwater and prevents the stormwater drains from overflowing. This reduces the risk of floods that can cause damage to both people and the built environment.



How will Hyllie Terrass' climate debt be balanced?

Our primary focus is to reduce as much as possible the emission of greenhouse gases caused by building materials and production and on laying the groundwork for the building's energy and resource-efficient operation. However, a climate debt will remain after construction. NollCO₂ offers the opportunity to balance the climate debt through the installation of additional renewable electricity sources, energy efficiency improvements to the existing building stock, or traditional climate compensation.

Although it has yet to be determined exactly how Hyllie Terrass will balance its climate debt to achieve a net-zero climate footprint, we want the repayment to have clear relevance to the project or area. This is also of the utmost importance for ensuring that the climate compensation is additional and follows ethically established criteria. This is something that the Sweden Green Building Council monitors within the framework of NollCO₂.

In addition to the options mentioned, we're also looking at measures that promote circular flows in the construction industry, such as using wood waste for the production of biochar instead of burning it.

Climate compensation – isn't it just a way to buy yourself out of your obligations?

The debate on climate compensation is justified and important to engage in. At Skanska, we've realised that what matters most is that we work hard and dedicate ourselves to ensuring that our products and our industry have a smaller climate footprint. Once we've taken as many measures as possible in a project, it should be acceptable to climate compensate for the debt that remains. We hope this will further accelerate the transition towards a more sustainable industry.



Measures to reduce the building's climate footprint are our top priority. Only once these measures have been exhausted does climate compensation become acceptable.

Åsa Johansson, Project Developer

What has steered our choice of materials for Hyllie Terrass?

Something that has been central to our decision-making is how materials affect the environment and people. It's important to take into account the overall picture of a specific material's footprint. That's why the majority of material and construction options have been subject to a multi-aspect assessment.

A huge amount of work has gone into optimising and reducing the footprint of the building's load-bearing parts, which naturally have the greatest impact on the project. In order to find the right solutions, we've worked on the building's various components individually and been in close dialogue with each supplier. During the project design process, we carefully reviewed the exposure class requirements (which often control the quantity of cement in the concrete) for various structural elements in the foundation and also optimised the concrete recipes. By optimising the base plate, it has been possible to reduce the amount of concrete in the project and thus also its climate footprint.

Efforts to optimise the façade have been ongoing since an early stage in the design phase and, among other things, have resulted in a stripped-down design in terms of raw materials to limit how much material we're adding to the building. We've also optimised the frame to adopt an efficient modular approach and use maximum spans between columns. In addition to this, we've made climate savings by choosing to use a full sandwich solution instead of a curtain-wall façade, which in our case would have resulted in a larger climate footprint.

Why is Hyllie Terrass being built using concrete instead of wood?

The choice of concrete over wood wasn't set in stone. At an early stage, careful calculations were made for the climate footprint of various frame materials. The calculation showed that although wood has a lower climate footprint than concrete, the difference was not significant. Building with wood also means a different kind of permanence and maintenance, which in turn can give rise to several climate-expensive measures. Instead, we chose to focus on how we could improve the concrete and make it more climate-smart.

The foundation and the basement are exposed to harsh conditions in the form of water and salts, for example. The ground conditions in the Hyllie area, which mainly consists of clay moraine above limestone rock, demand a strong foundation structure. We therefore wanted to leverage the qualities of concrete in terms of its durability, resistance, safety, and quality. For these reasons, we chose to continue working with the concrete frame and accept the challenge of reducing the climate footprint of the concrete industry as much as possible.

[Find out more about climate-optimised concrete on the next page.](#)

What makes the concrete in Hyllie Terrass climate-optimised?

Concrete has been and will continue to be an important building material, but we have to make it more sustainable. That's why we at Skanska have developed climate-optimised concrete, with a climate footprint that's approximately 40 percent smaller.

Climate-optimised concrete has a substantially lower quantity of cement, which is the component accounting for the most greenhouse gas emissions in the production of concrete. By replacing part of the cement with slag, we can leverage the qualities of concrete while reducing its climate footprint.

Climate-optimised concrete cast on site

The concrete cast on site will be supplied by Sydsten. We've stipulated that they must use climate-optimised concrete, and our project organisation has carried out drying tests on it. The concrete uses type CEMIII cement, where an extra 15 to 20 percent of blast furnace slag is added to minimise the concrete's climate footprint. This results in climate savings of around 40 percent for this part of the building, which significantly reduces the climate footprint.

Strict requirements for suppliers' climate work

For the frame, we've chosen to enter into a close collaboration with UPB in Latvia. Early in the process, we stipulated stringent demands for their climate work, including greener concrete recipes, the use of recycled structural steel, and a greater proportion of fossil-free transport. We're working to ensure that all HDF joists at Hyllie Terrass are manufactured using Schwenk environmental cement, which uses approximately 40 percent cement alternatives, and that the inner walls and the inner panel of the outer wall are manufactured using CEMIII (Schwenk composite cement), which uses approximately 15 to 20 percent cement alternatives.

In addition to these specific measures for project-specific concrete recipes, we've also set requirements for UPB as a supplier in the future. They must have ongoing and transparent dialogue for the sake of learning and actively undertake to reduce the climate footprint of all their facilities and products.



Our climate-optimised concrete has a reduced climate footprint of around 40 percent.

Åsa Johansson, Project Developer



What innovative energy solutions are planned for Hyllie Terrass?

This is a very important and exciting area in which we have sought actively with our energy supplier E.ON to achieve the best and most environmentally friendly solutions. All the energy that supplies Hyllie Terrass will be 100 percent renewable.

Energy consumption for Hyllie Terrass will be around 1,000 MWh per year for electricity, heating, and cooling. This entire volume will come from renewable sources.

Electricity, district heating and cooling from renewable sources

For electricity, we have 100 percent renewable electricity from facilities that are Good Environmental Choice-approved. The environmental requirements for renewable electricity production involve taking the environment, climate, plants, animals, and people into consideration. Thanks to the surplus electricity generated from our solar array on the roof, we contribute 100 percent renewable electricity to the Swedish electricity grid.

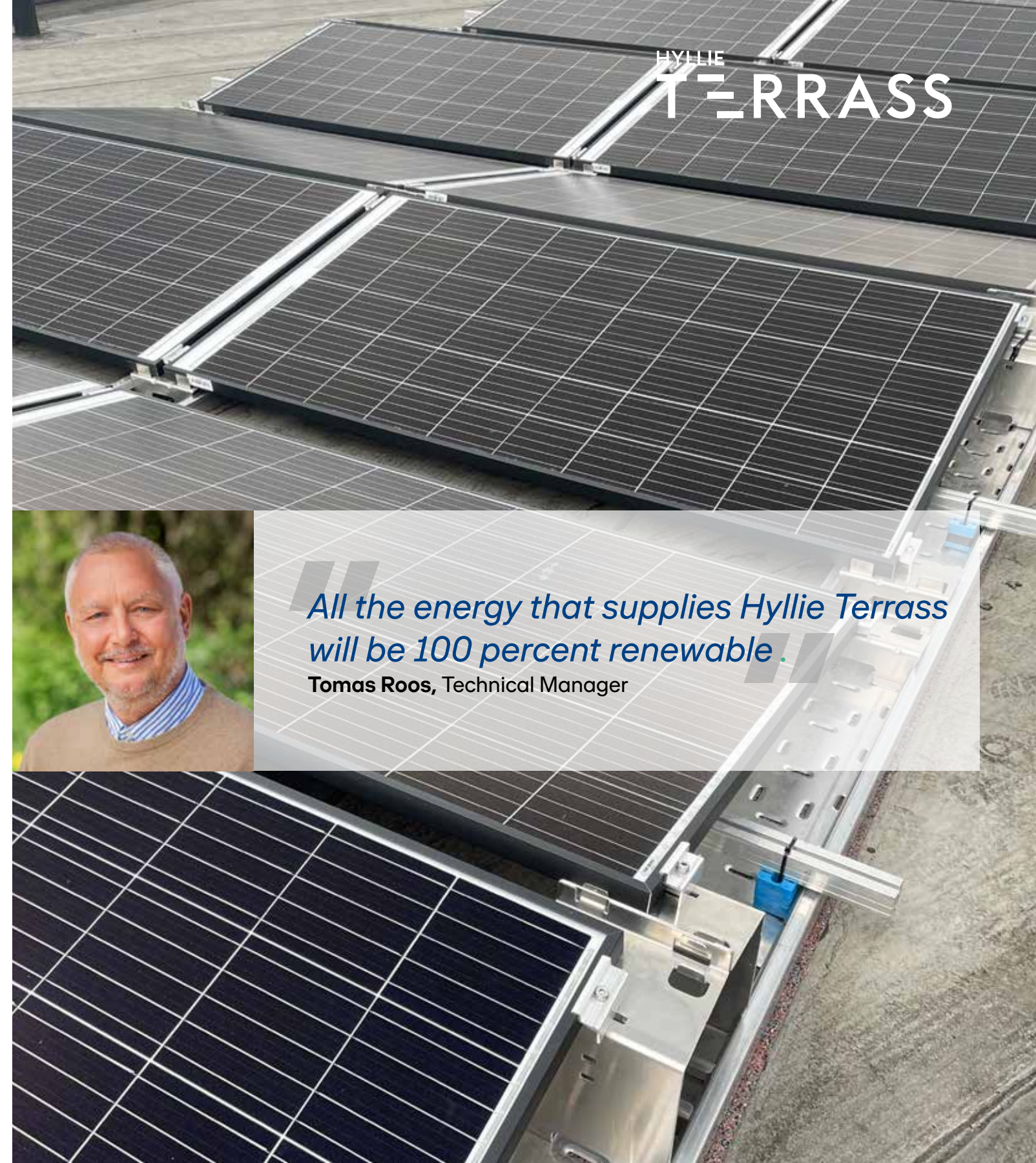
[Read more about E.ON Next at eon.se](https://www.eon.se)

For heat, we have 100 percent “additional renewable” district heating. The fuel is wood chips, and renewable electricity supplies the facility’s heat pumps. “Additional renewable” means that we add as much renewable energy to the overall district heating system as Hyllie Terrass takes out, which means that other customers are not adversely affected. For cooling, we get district cooling produced from 100 percent renewable hydropower electricity.

Tomorrow’s energy solutions tested at Hyllie Terrass

The electricity from our solar panels on the roof will be used within the building and can also be stored in local battery storage to help regulate the frequency of the electricity grid, if necessary and where possible.

In order to further optimise energy production and consumption, the property is connected to E.ON’s Smart Grid to give the option for property and neighbourhood balancing. This allows Hyllie Terrass to collaborate with other energy users and energy production in Malmö, which reduces the city’s total climate footprint.



All the energy that supplies Hyllie Terrass will be 100 percent renewable.

Tomas Roos, Technical Manager

Which measures at Hyllie Terrass reduce the climate footprint the most?

The greatest climate reduction comes from the changes to the concrete recipes for the frame, the façade, and the foundation structure. Then there's the green fossil-free construction site and efforts to optimise the façade sections, which also result in a substantial reduction in the project's climate footprint.

Overall, we'll reduce the climate burden by between 1,700 and 2,800 tonnes of CO₂, depending on what we compare it to. A summary can be found in the table below.

NollCO₂ – baseline

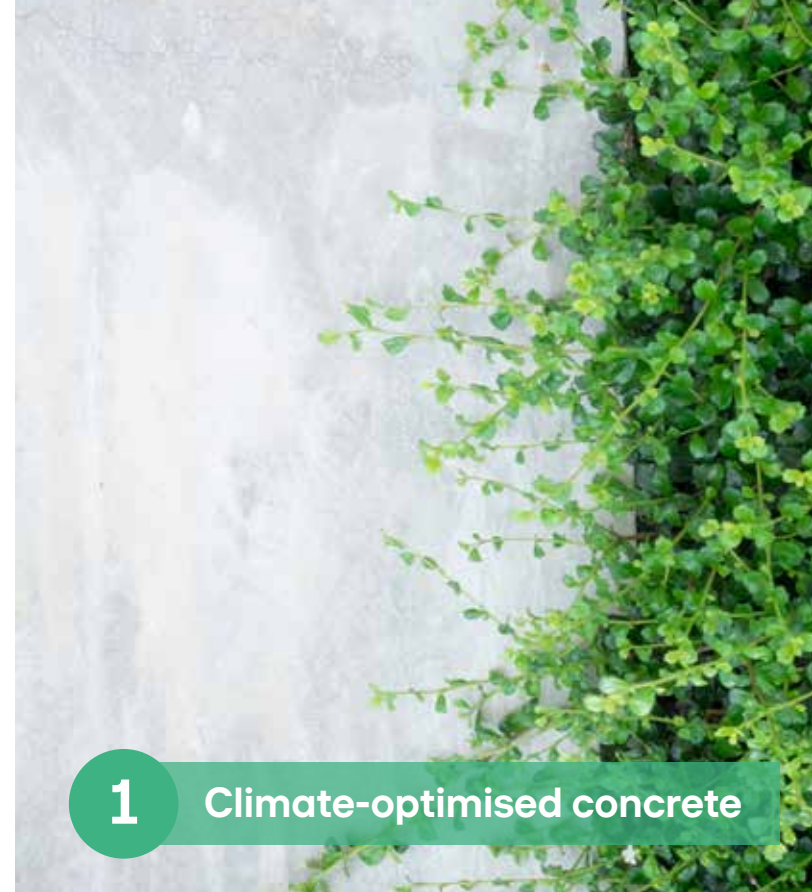
Phase	Baseline SGBC	Skanska's result	Reduction
A1-A3	6,785	5,210	23%
A4-A5	1,066	945	11%
Total	7,851	6,155	22%

Hyllie Terrass' climate reduction compared to the building-typical baseline established by the Sweden Green Building Council for NollCO₂ certification.

Skanska Öresund standard office

Phase	Baseline	Skanska's result	Reduction
A1-A3	7,464	5,210	30%
A4-A5	1,504	946	37%
Total	8,967	6,156	31%

Hyllie Terrass' climate reduction compared to the baseline for a standard office by Skanska Öresund.



1 Climate-optimised concrete



2 Fossil-free green construction site



3 Optimised façade sections

What does it mean for a company to have its office in Hyllie Terrass?

Where and how a company is located affects its climate footprint. When Hyllie Terrass is completed and the climate debt incurred in connection with its construction has been balanced, the potential impact brought about by the building's operation will also be balanced annually. This means that you and your company will operate in climate-neutral premises.

With a focus on the climate and people

Hyllie Terrass is at the absolute forefront when it comes to both the environment and health. To achieve NollCO₂ certification for Hyllie Terrass, we've asked every uncomfortable environmental question we can think of concerning our footprint and then undertaken to reduce it and ultimately achieve a net-zero climate footprint. This all helps to make a real difference and promote a sustainable construction industry.

Hyllie Terrass is also health-certified according to the international standard WELL, which means, among other things, that the building is designed to encourage people to make healthy and climate-smart choices every day.

Green leases that promote sustainable choices

As a landlord, we want to create good conditions for making environmentally conscious choices together with our tenants. That's why we'll sign green leases with all Hyllie Terrass tenants. These should help us as a landlord and property owner and you as a tenant to gain a better understanding of the measures that can optimise energy consumption and reduce our climate footprint.

Pride is an untapped resource in working life. If you aren't proud of yourself and what you do, your motivation disappears, which can affect your health.

Source: Caroline Stenbacka Nordström, PhD in economics from Hanken School of Economics, and Elin Alsiok, author of the book "Stolthet som strategi".

Together, through effective collaboration, we can map out the conditions for your premises to become even more energy-efficient and climate-smart.

Prime location in Malmö's most sustainable neighbourhood

There are great opportunities in Hyllie for companies and people who want to minimise their climate footprint. Everything you need, whether during or after working hours, is within walking distance. And thanks to the prime location just two minutes from Hyllie station – one of Skåne's and Sweden's strongest communication hubs – employees are given the best platform for climate-smart commuting.

Tomorrow's office today

At Hyllie Terrass, companies and employees can go to work with a clear conscience, in efficient, high-quality, and flexible office premises built for the demands of the future. At Skanska, we're hugely proud of our successes and the knowledge we've gained so far in the project. Our goal is for everyone who chooses to move into Hyllie Terrass to feel this same pride.



Want to know more about the sustainability efforts at Hyllie Terrass?



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