Reading guidelines

This report is a summary of Stockholm Royal Seaport’s sustainability work in 2020 and shows how the urban development project achieves the sustainability goals. The report is based on the five strategies outlined that also is the basis for the requirements on the city’s own projects and on developers.

Our website StockholmRoyalSeaport2030.se is an extended version of the report with films, podcasts, presentations of innovation projects and previous sustainability reports. There is also a collection of relevant material and Stockholm Royal Seaport’s steering document for sustainable urban development.
Stockholm Royal Seaport
Current status 2020

- **236 ha area**, where 28% are remediated.
- **21 billion SEK** is the total investment volume.
- **3,066** apartments have been built of which 53% are rental apartments.
- **5,790** apartments are allocated to 48 different developers.
- **2,3** is the plot ratio of what is planned.
- **11** preschools, 1 elementary school and 1 sports center are built.

### Development phases

<table>
<thead>
<tr>
<th>Hjorthagen</th>
<th>Housing units</th>
<th>Commercial floor area m²*</th>
<th>Construction start</th>
<th>Occupancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Norra 1</td>
<td>670</td>
<td>1,200</td>
<td>2011</td>
<td>2012–2014</td>
</tr>
<tr>
<td>2 Västra</td>
<td>1,250</td>
<td>3,200</td>
<td>2012</td>
<td>2014–2017</td>
</tr>
<tr>
<td>3 Norra 2</td>
<td>600</td>
<td>2,500</td>
<td>2014</td>
<td>2016–2017</td>
</tr>
<tr>
<td>4 Brofästet</td>
<td>600</td>
<td>3,000</td>
<td>2016</td>
<td>2021</td>
</tr>
<tr>
<td>5 Gasverket</td>
<td>300</td>
<td>80,000</td>
<td>2017</td>
<td>2018–2025</td>
</tr>
<tr>
<td>6 Gasklocka 3 and 4</td>
<td>320</td>
<td>1,600</td>
<td>2023</td>
<td>-</td>
</tr>
<tr>
<td>7 Jackproppen</td>
<td>54</td>
<td>1,750</td>
<td>2019</td>
<td>2022</td>
</tr>
<tr>
<td>8 Elektriciteten</td>
<td>190</td>
<td>-</td>
<td>2025</td>
<td>2027</td>
</tr>
<tr>
<td>9 Kolkajen</td>
<td>1,500</td>
<td>11,000</td>
<td>2025</td>
<td>2026</td>
</tr>
<tr>
<td>10 Ropsten</td>
<td>570</td>
<td>60,000</td>
<td>2024</td>
<td>2024–2026</td>
</tr>
<tr>
<td>11 Starkströmmen</td>
<td>54</td>
<td>1,750</td>
<td>2024</td>
<td>2024–2028</td>
</tr>
</tbody>
</table>

| Värtahamnen    |               | 16,000                     | 2014               | 2016           |
| 12 Värtatermalen | -            | 70,000                     | 2021               | 2023           |
| 13 Södra Värtan Norra | -       | 60,000                     | 2025               | 2027           |
| 14 Södra Värtan Mellersta | 600 | 6,000                      | 2025               | 2027           |
| 15 Södra Värtan Södra       | 900           | 20,800                     | 2024               | 2026           |

*Based on commercial floor area: the floor areas taken up by lobbies, enclosed machinery rooms on the roof, stairs and escalators, mechanical and electrical services, lifts, columns, toilet areas, ducts and risers.
First detailed development plan approved for Värtahamnen

The development of Värtahamnen entails extensive changes to the area, which in itself will be a new entrance to Stockholm from the sea side. A mixed urban environment will emerge and urban development will reach all the way down to the quays.

The Stockholm City Planning Committee approved the first detailed development plan for Södra Värtan Norra last year, an area where NIAM and Bonnier Fastigheter will build five blocks with offices covering a total area of 70,000 square metres.

Gasklocka 3 and 4 have been allocated to OBOS, and in Kolkajen, land allocation has been granted for sites including three solid wood buildings to Among Giants Properties and Rico Estate Development. These will be the first solid wood buildings planned for Stockholm Royal Seaport. Several new businesses have moved into Gasverket, including Sandvik, Bergh’s School of Communication and the Anna pre-school. In October, due to the pandemic, we hosted much of “Open House at Gasverket” digitally. The event had its own website, screened new information films, and presented archive material. Thousands of people attended the event for varying amounts of times. This shows that hosting activities for the public digitally does work – although we’re looking forward to meeting people in person again.

Norra 2 was the first phase of the project to have ambitious energy requirements. It has often been challenging for developers to achieve these energy targets. Many new lessons were learned, and the knowledge developed in Norra 2 has been applied in subsequent phases, such as Brofästet. Here, developers have now reported the first result for energy performance results after one year of occupancy and many have achieved our stated energy requirements. Requirements have, in fact, been stricter compared to Norra 2, where solar energy no longer can be used as compensation. Something that we can be proud of!

In 2020, digitalisation became an integral part of our work process and we quickly learned new ways to collaborate remotely. Offices moved to people’s homes and everyday life became more apparent. For those of us working with the urban development, working from home has triggered considerable thought about how the new digital work environment will affect our view of housing and workplaces: the need for increased flexibility, as well as the need for resilience to crises and societal changes. Despite the pandemic, Stockholm Royal Seaport continues to deliver towards established goals. We’re in the preparatory phases of our work on Loudden with extensive soil remediation, ongoing work with several major detailed development plans involving national agencies, and design work.

We continue to be proud of transforming these former industrial areas into attractive, safe, and resource-efficient new part of Stockholm.

We hope you will follow our progress!

Staffan Lorentz
Head of Development
Stockholm Royal Seaport,
Stockholm City Development Administration

The development of Värtahamnen entails extensive changes to the area, which in itself will be a new entrance to Stockholm from the sea side. A mixed urban environment will emerge and urban development will reach all the way down to the quays.
Highlights of 2020

4 out of 10 buildings in the Brofästet phase meet the energy requirement

The first buildings in the Brofästet phase reported positive energy use results after one year of operation.

Stockholms hem’s plus energy buildings were 42 per cent better than the requirement, which indicates good form factor and good building and technical installation parameters. Tobin Properties also met the requirement, and their buildings can be said to have good building envelopes. Other developers continue to discuss with the City of Stockholm adjustments to energy systems to meet requirements. Read more about Brofästet on page 15.

EU initiative on energy positive districts

Brussels, Vienna and Stockholm launched a two-year research and innovation collaboration. The project is co-funded by the Swedish Energy Agency under its energy positive districts scheme, a collaboration between Viable Cities and JPI Urban Europe.

One of the main objectives of the initiative purpose is to investigate how the Loudden area could become energy-positive. The project will also help to define what the term “energy positive” means more broadly. Experiences and lessons learned from the Norra 2 and Brofästet phases and previous innovation projects, form the basis of continued work on developing fossil-free energy systems.

Library opens on Bobergsgatan

In 2020, the library on Bobergsgatan opened, offering a wide choice of children’s and youth literature, along with teaching activities for children and young people in the area. The library also offers activities for adults such as a language café and reading clubs. The interior consists partly of recycled furniture and carpeting made from recycled fishing nets.

The library also works with pre-schools on a variety of activities focusing on nature, the environment, and sustainability.

Digital dialogue regarding temporary park

Prior to the completion of a permanent city park between Brofästet and Kolkajen, a temporary park is planned. A digital dialogue about it was held. Some 440 participants submitted around 1,390 comments.

Proposals for a boules court, a barbecue area, and the variety of activities attracted the most positive responses. Planter boxes, café space, and vegetation were also popular aspects, as well as wood decking for yoga and other activities. Many people wanted wood decking at Husarviken – a wish that will be met – and space for food trucks on Bobergsgatan. Furniture and play equipment will be largely reused. Parts of the temporary park will open in the summer of 2021.
The development project

Planning of the Stockholm Royal Seaport development project started in 2001, and land remediation began in 2004. In 2009, Stockholm City Council decided that the project would be a model for sustainable urban development.

The project is one of Europe’s largest urban development projects, with plans for more than 12,000 new homes and 35,000 workplaces by around 2030.

In Stockholm Royal Seaport, former industrial land is being transformed into a city district on land owned by the City of Stockholm. The land is managed by the City Development Administration, which also project manages development and sustainability work in close collaboration with most of the City of Stockholm’s other administrations and companies.

The project is funded by land sales and land rights fees.

The central location of the project – close to the waters of Lilla Värtan and the Royal National City Park – provides unique opportunities. The buildings in Hjorthagen link to Gasverket, where gas production ceased in 2011.

The area’s old industrial buildings have considerable potential for new, inspiring uses.

Some of the industrial activity, such as energy production at Värtaverket and the port’s operations, will be further developed, while others, such as oil management at Loudden, will be phased out.

Water is a constant feature and contributes to the dynamics of the area. Port areas are planned so as to become a natural part of the city.

When the city is opened up and connected, people can move more easily on foot or by bicycle within and through the area.

By creating and strengthening dispersal zones for flora and fauna throughout the area to the adjacent Royal National City Park, natural values and connections are strengthened.

Parks and green spaces also strongly characterise this part of Stockholm.

Sustainability work

Five strategies form the basis for our work that connects sustainability goals and city planning principles, and includes ecological, economic, and social aspects.

When Stockholm City Council designated Stockholm Royal Seaport as an area with a sustainability profile, cross-departmental working groups were appointed with experts from related administrations and companies to support the initiative. The task of the working groups is to identify sustainability goals which are then set as requirements for developers and the City’s own activities.

The requirements are followed up and verified at all stages – from early design work to operations. Developers report results in a web-based monitoring database which are reviewed by City’s experts. The working groups continuously evaluate the work and the results. This, in combination with external monitoring, results in constantly improving goals.

Working group participants are also tasked with disseminating experience within their administrations and companies and to other City of Stockholm projects. Continuous competence building is vital to achieve the high ambitions of the Stockholm Royal Seaport project.

The visions and goals that were decided by Stockholm City Council in 2010 were revised in 2017 in the Program for Sustainable Urban Development and are once again up for review.

On the following pages, we present the year’s sustainability work under each strategy and examples are provided of what is being done to achieve sustainability goals.
1. Vibrant City

A Vibrant City centres around people. It is open, inclusive, works for people in different stages of life, and offers a variety of types of housing. Public spaces are the centre of urban life and there is space for spontaneous and unexpected meetings between people from different backgrounds and identities.

1.1 A robust and coherent city structure

A dense and green city where buildings, streets, squares, and green spaces connect the city and facilitate walking and cycling.

At the end of 2020, the City Planning Committee approved the first detailed development plan for Värtahamnen, Södra Värtan Norra, with offices and businesses premises on ground floors and hotels and retail, to contribute to an active city environment. There will be parks, squares, and a 600-metre waterfront.

In-depth programme work is ongoing for Loudden and is expected to be ready in the spring of 2022. The oil companies’ operations has discontinued and the container terminal in Frihamnen has relocated to the new port, Stockholm Norvik Port, in Nynäshamn.

Boberg School named best School and Pre-school Building of the Year 2020, with the award jury praising qualities such as the fine balance between the historical and contemporary. Boberg School was also nominated for Stockholm Building of the Year 2020 together with the Plus-Energy Buildings and Building 20 in Gasverket.

53% rental apartments of which 9% are student accommodation.

1 elementary school, 1 sports centre and 11 pre-schools.

16% of social place has social value the equivalent of 27m² per dwelling.
Gasverket’s storehouse has become the municipal preschool Anna which opened in January 2021. Vectura Fastigheter has rebuilt the cultural-historical building from 1909.

While waiting for the completion of a park between Kolkajen and Brofästet a temporarily park is planned. Ground works started in the autumn of 2020 and the first part of this area will be ready to open in the summer of 2021. Residents have been consulted for suggestions on functions and use of the pop-up park.

1.2 An equal city
An equal city centres around people, it is open and inclusive and works for people in different stages of life and offers a variety of types of housing. Of the dwellings built to date, more than half are rental apartments, of which 9 per cent are student accommodation. The size of dwellings varies: 10 per cent studios, 33 per cent one bedroom, 29 per cent two bedrooms, 24 per cent three bedrooms, and 4 per cent are four bedrooms or larger.

In 2020, 560 tenant-owned apartments were allocated land, 380 to OBOS for Gasklocka 3 and 4, 160 to OBOS and 80 to Among Giants Properties (AG) and Rico Estate Development in Kolkajen. In conjunction with land allocations for Kolkajen and Gasklocka 3 and 4, developers are required to develop concepts for norm-creative dwellings and property design. OBOS will design 30 per cent of homes as small studio apartments, but also larger apartments with flexible floor plans with sliding walls, for example for parents with children who live with them every other week. OBOS will also trial its “Deleie” concept, which means that the company and the customer jointly own apartments.

AG is planning a solid wood building with small and space-efficient apartments, supplemented with shared areas such as a gym, bookable living rooms, and roof terraces. Public areas would also be created with the addition of a restaurant and café.

“A number of additional sustainability initiatives are being added in conjunction with the Kolkajen phase. Local streets will be virtually car-free. The City has set requirements for apartments that are being built shall to a certain extent be adapted to various housing constellations and needs that exist in today’s society,”

Johan Nilsson, chair of the City Development Committee, about the land allocation.
1.3 Active daily life
A Vibrant City offers a variety of functions and activities that help people get through the daily routine. The fact that community services such as a grocery store, pre-school and school are given central locations contributes to simplifying everyday life.

In 2020 three pre-schools have opened in Brofästet and Gasverket, the library has opened, and the Hjortgläntan playground was completed. Båthusparken with basketball hoops and football goals, a playhouse and see-saws and climbing frames was also completed. Also, an outdoor gym, jetties, and parks were completed close to Husarviks bridge.

1.4 Attractive and safe city spaces
A Vibrant City offers a variety of activities that ensure the area populated, safe, and exciting at all times of the day and night and throughout the year. It also contributes to business opportunities. In the completed stages, the proportion of dwellings is high. As the expansion reaches Ropsten and goes further into Gasverket and Södra Värtan, the proportion of commercial space will increase. The average is currently 13 per cent, but under to current plans, the proportion of commercial space will increase to about 40 per cent.

In a dense city, it is important to ensure open space, i.e., land that is not built on and that is accessible to everyone. When Stockholm Royal Seaport in Hjorthagen is fully developed, open space with social values will amount to approximately 21 per cent, which corresponds to just over 21 m² per dwelling. To date, total public space with social values area is 16 per cent, which corresponds to 27 m² per dwelling.

The work on safety in the area continued and during 2020 two safety walks were conducted in various constellations. Participants have included the City District Administration of Östermalm, the Transport Department, the police, Lidingö municipality, residents, night walkers, and Keolis.

Further reading, details and the latest figures available on the website:

Vibrant City>
Map of public spaces with social value>
2. Accessibility and Proximity

In Stockholm Royal Seaport, a dense and accessible urban environment is being created with close access to services and parks. This contributes to increased equality because there are structural differences between women’s and men’s daily lives and travel patterns. This also contributes to increased opportunities for good mobility irrespective of age, disability, or other individual circumstances.

2.1 Prioritise walking, cycling and public transport

The area’s transport hierarchy prioritises walking and cycling, followed by public transport. Public transport is the backbone of the development and the area is already served by the metro and several bus lines.

Measures on development sites are aimed at promoting the use of sustainable modes of transport. This will support sustainable travel, facilitate pedestrian and bicycle traffic, and contribute to a vibrant city environment. Reduced car use also results in reduced emissions of carbon dioxide and other emissions.

In total, 7,550 bicycle parking spaces and 1,890 car parking spaces have been provided for 6,750 residents. The number
of car parking spaces has remained at a constant level and is comparable with that of central Stockholm. The number of bicycle parking spaces has increased in each phase. From the Värtahamnen phase onwards, the tool Mobility Index has been used to promote sustainable mobility solutions. The tool has been developed with inspiration from the Green Space Index and gives developers greater scope to design mobility solutions adapted to their own properties.

Measures taken in public open spaces facilitate sustainable travel where walking, cycling, and public transport are prioritised. In 2020, a one kilometre-long temporary pedestrian and cycle path was built along the planned development areas in Värtahamnen. This section became slightly longer than planned, but safer by being separated from heavy traffic.

2.2 Vibrant street space

Streets should fulfil multiple functions and should be based on the human scale, focusing on pedestrians and cyclists to create a safe and secure urban environment. To create vibrant street spaces, stationary vehicles need to be moved away from the streets.

In the first phases, car parking is located in garages under buildings. In the later phases, shared decentralised parking garages have been developed to which developers obtain access through parking purchases. The development of Hjorthagen garage in a cavern, with space for 1,600 cars is underway and blasting work for the tunnel entrance in Hjorthagsberget was conducted throughout 2020.

“By concentrating parking in a garage, street space in the planned adjacent dwellings can be used for meetings and stays. Because several different types of parking needs are gathered in the same garage, there are great opportunities for shared,” Jenny Simonsson, Traffic Planner for Stockholm Royal Seaport.

2.3 Efficient, sustainable freight transport

Good logistics planning is vital to ensure sustainable transport of materials. The reuse of rock material saves large amounts of journeys on the city’s road network. To make operations more efficient and reduce heavy-load journeys to and from the area, the Construction Consolidation Centre (CCC) was established in 2013 and the Mass Consolidation Centre (MCC) in 2018.

In 2020, the number of journeys to construction sites was reduced, partly by continuing to limit the number of smaller deliveries and partly by ensuring that point-to-point deliveries were fully loaded. By co-ordinating waste management from the construction area, the need for journeys is further reduced.

Bulk materials are an important resource for the expansion of the city and are managed by the MCC. They are sorted and reused locally which reduces the number of heavy truck journeys. The MCC facility is financed with grants from the City of Stockholm’s climate investment funds. In 2020, the MCC contributed to a reduction of 150 long-distance journeys to external reception facilities. To date, 822,800 tonnes of rock and soil have been recycled in Stockholm Royal Seaport, which means that approximately 87,000 round-trip journeys have been avoided.
3. Resource efficiency and climate responsibility

Stockholm Royal Seaport will be a fossil-free district with low resource use and minimal environmental and climate impact. Infrastructure is being developed with the integration of energy, water supply, wastewater, and transport systems.
Demolitions of cisterns at Loudden.

**Waste and Bulk Materials Management**

3.1 Reduced amount of waste and increased purification levels

Short distances to vacuum waste collection and recycling rooms make it easier for residents to sort waste correctly. During the construction phase, local soil remediation and reuse of purified excavated materials is prioritised. Construction waste is minimised and sorted.

Waste systems for households and businesses include organic waste grinders, vacuum waste collection systems, recycling rooms, a mobile reuse station and an automated collection station for hazardous waste. Short distances to refuse chutes (residual waste, newspapers, and plastic packaging), and recycling rooms, (other waste), makes it easier for residents to sort waste correctly.

In 2020, residual waste in the area increased 14 per cent to 99 kg per person compared to 85 kg per person in 2019. The newspaper fraction decreased 48 per cent and the plastic fraction decreased 19 per cent compared to 2019.

Pop-Up Reuse is a mobile reuse station that started in Stockholm Royal Seaport in 2015 as a result of an innovation procurement and has since then been further developed by Stockholm Vatten och Avfall, (SVOA). There are now two stations and services are provided throughout Stockholm to facilitate reuse and reduce bulky waste. Pop-Up Reuse was in Stockholm Royal Seaport for two weekends. 1.5 tonnes of material went to reuse, and 1.9 tonnes of bulky waste was collected, 0.3 tonnes of which was electronic waste, and 0.4 tonnes was hazardous waste.

To date, none of the developers meet the 20 kg/m² GFA requirement on construction waste, but on average 44.6 kg/m² GFA has been generated. This is partly due to developers

99 kg residual waste/person compared to 195 kg/person in the rest of Stockholm 2020.

28% of land area has been remediated.

2 millions tonnes of soil have been handled on site.
failing to work sufficiently proactively to prevent and reduce amounts of construction waste and partly due to a lack of quality assurances during the construction phase. In future phases, all developers will therefore be required to produce a construction waste plan.

3.2 Resource-efficient water and effluents

Source-separating wastewater systems have been reviewed since 2011. The MACRO innovation project that started in 2015 has reviewed conditions for source-separating wastewater systems for Södra Värtan and Loudden in close collaboration with Stockholm Vatten och Avfall in various project phases. Planning for such a system in Södra Värtan is due to start in 2021.

The Urban Development Project requires organic waste grinders to be installed in all kitchens. Food waste is led to the wastewater disposal system and contributes to increased production of biogas. In the long term, ground food waste will be collected in separate piping for food waste. To date, all dwellings have been equipped with organic waste grinders that are connected to kitchen drains.

3.3 Circular construction and management processes

Land in many parts of Stockholm Royal Seaport is polluted by former industrial activity. To date, 360,000m² of land has been remediated, equivalent to 28 per cent of the area. In 2020, work was done on producing new environmental and health risk assessments for Loudden and Värtahamnen for future soil remediation work.

In 2020, a total of 17,700 tonnes were excavated in Kolkajen. There are substantial amounts of pollutants in parts of Kolkajen and Ropsten due to gas production that took place in the area and extensive remediation efforts needs to make the land and the seabed of Kolkajen accessible. Soil remediation in Kolkajen and Ropsten began in 2019 and continued during 2020. Soil remediation was also carried out in the area in conjunction with work for the new Lilla Lidingö bridge and at Gasverksvägen. Top soil will be excavated while deeper soil in the area will be soil remediated on site, by so-called chemical oxidation in combination with lime cement stabilisation. The method reduces both the need to excavate and remove contaminated material and to refill with new material.

The mass balance in 2020 was approximately 41 per cent and 49 per cent in total. To increase the reuse of excavated materials, a Mass Consolidation Centre (MCC) opened in 2018 in Värtahamnen, where only mildly contaminated material is sorted and recycled. The MCC helps to minimise traffic, purchased materials, and dust and noise as all sorting takes place indoors in a warehouse.

The development of Loudden has started and planning work is underway. Oil companies’ operations at the site ceased in 2019 and remediation is expected to be completed in summer 2022. Thereafter, the City of Stockholm will carry out additional remediation to meet site-specific requirements.
Energy and Climate

3.4 Efficient energy use
To reduce energy use, all new buildings are low-energy buildings with well-insulated building envelopes and energy-efficient fittings. Furthermore, renewable energy should be generated locally and energy calculations are submitted for all phases. Metered values are submitted after a building has been in use for two years.

According to Stockholm Royal Seaport’s energy requirements, some developers are well above, but developers meet Swedish building code regulations.

The first buildings in the Brofästet phase reported positive energy use results after one year of operation. Stockholmshem’s plus energy building was 42 per cent better than the requirement, which indicates good form factor and good building and technical installation parameters. Tobin Properties also met the requirement, and their buildings can be said to have good building envelopes. Other developers continue to discuss with the City of Stockholm adjustments to energy systems to meet requirements.

The first review of Norra 2, two years after occupancy, showed that the projected values for energy use were 800 MWh solar energy per year.

In Norra 2 metered average energy use was 70 kwh/m².

Differences between Stockholm Royal Seaport’s requirements and Swedish building code regulations
Energy performance is calculated differently in Stockholm Royal Seaport than in Swedish building code regulations (SBC). Under SBC regulations, no weighting is applied and locally produced solar energy can be credited. These differences are especially pronounced in Brofästet where large amounts of solar energy production affects results. Some developers fulfil Stockholm Royal Seaport’s requirements, but all developers meet SBC regulations by a considerable margin.
exceeded. Metered energy use in Norra 2 was on average 70 kWh/m² per year Atemp. However, this is 22 per cent better than applicable Swedish building code regulations and means that buildings in the area meet the zero-energy directive. During 2020 dialogue continued with developers on troubleshooting and corrective measures. Thanks to proactive and transparent collaboration between all parties has created an important knowledge platform. This work shows the most significant deviations from target values are due to substantial use of heating and metering errors. Developers will present the results of this work after the 2021 heating season.

The construction sheds must also be energy efficient and electricity used for shed establishment and construction sites must be eco-labeled.

LEDs are used to illuminate public open spaces. Motion-detection lighting has been installed in certain areas where light levels are lower when pedestrian and bicycle paths are unused, switching to full brightness when someone is detected. This has resulted in cost and energy savings of between 30 and 50 per cent. In 2020, 147,500 kWh was used to illuminate Stockholm Royal Seaport.

3.6 Low climate impact
During the design and construction phases, a substantial proportion of climate impact is determined by the materials used. All developers shall, at an early stage, make climate calculations for buildings.

The first three wood buildings in Stockholm Royal Seaport are planned in Kolkajen, with a total of approximately 290 homes.

The Swedish Environmental Research Institute’s calculation tool and the Swedish Construction Federation’s environmental calculation tool (BM) have continued to be tested at facilities. In 2020, a calculation was made of various solutions for the artificial island that is planned in Kolkajen. Results from these calculations were included as socio-economic costs in investment decision making.

By using biochar in Stockholm Royal Seaport, the project functions as a carbon sink. The equivalent of 1,100 tonnes of CO₂ have been sequestered to date.

3.5 Fossil-free 2030
Stockholm Royal Seaport has a target of being fossil-free by 2030, which means that only renewable fuels can be used to supply energy to buildings and transport. For the past 10 years, the focus has been on designing buildings that minimise energy use.

To investigate what needs to be done at a district level to develop a so-called plus-energy district, the Cities for Positive Energy Districts (Cities4PEDs) innovation project has been launched in collaboration with Brussels and Vienna. The purpose of the scheme is to help define the concept of “energy-positive districts”, which will then be tested in the three cities in existing areas and in new development areas. The project runs until 2022 and is funded through by the Viable Cities/Swedish Energy Agency.

Demand for electric charging facilities has increased sharply in recent years. Therefore, this requirement has been adjusted for future land allocations to at least 50 per cent.

All developers from the Norra 2 phase onwards, generate solar energy locally and meet targets by installing solar equipment on the roofs of buildings. Worth noticing is that solar panels on Stockholmshem’s plus energy building produces 23 kWh/m² which is more than the calculated 18 kWh/m².

In 2020, solar panels on the MCC produced 243 MWh and meet the energy needs of the facility. They supply sorting machinery, lighting, the water purification facility and the ventilation system. The CCC co-ordinates all transports to and from the construction area. One of the area’s sling trucks is now powered by electricity and is part of the “The view from the driver’s seat – what role do electric vehicles have to play?” innovation project.

The proportion of renewable fuel use for machinery used by the City of Stockholm’s own contractors in Stockholm Royal Seaport was 2 per cent in 2019 and 2020.

There are currently two filling stations in Stockholm Royal Seaport that provide renewable diesel, HVO 100. The filling stations make it easier for contractors to use fossil-free fuel and have also been opened for use by private individuals.

Listen to Torbjörn Kumlin, Project Manager, and Morten Johansson, Architect at DinellJohansson, about Stockholmshem’s plus-energy buildings. Only in Swedish.

"It makes no difference if energy requirements are tightened if they are not followed up. This is where Stockholm Royal Seaport is doing incredibly important detective work that we are following with great interest".

Sustainable Buildings

The chemical composition of all building materials used in Stockholm Royal Seaport is checked based on the precautionary principle. Good indoor climates, equivalent to Miljöbyggnad Gold Standard are required to be met in all buildings.

3.7 Good indoor climates

To ensure good indoor climates, quality assurance during construction and demand-controlled ventilation are crucial factors. Daylight are affected by the city structure therefor early collaboration between architects, and energy and indoor environment experts is therefore extremely important.

80 per cent of developers achieve Gold standard for indoor climate indicators. Deviations that have arisen are primarily related to thermal climate during summer months and daylight.

A particular challenge in Södra Värtan and Valparaiso is low-frequency noise from ships docked at the nearby port. There are currently no approved types of windows on the market that counteract low frequency noise. In order to be able to build homes and schools in southern and central parts of Södra Värtan and in Valparaiso, noise from ferries needs to be shielded. New office buildings therefore also function as a noise screen.

3.8 Sustainable selection of building materials

The chemical composition of all building materials used in Stockholm Royal Seaport is checked based on the precautionary principle.

All developers and the City of Stockholm’s contractors use one of the national assessment systems, document building material, and report any deviations. Currently, requirements are not imposed on temporary materials such as scaffolding, construction fences, and temporary lighting poles.

80% of developers achieve Miljöbyggnad Gold level.

81% of residents feel that air quality in their homes is very or quite good.
To reduce the amount of environmentally hazardous materials that also pose a health risk and reduce the spread of micro-plastics, a requirement to reduce the use of artificial grass and rubber asphalt has been introduced. Where these types of materials are needed, stricter chemical requirements have been introduced. Requirements have also been introduced for developers in the area in 2020.

Pressure treated timber must not be used in the area. Wood that is used must be FSC- or PEFC-certified. During the year, monitoring routines were further improved to increase the traceability of wood used in Stockholm Royal Seaport. The wood certificates used are recognized as the most far-reaching in the forestry sector. However, they have been criticised for being inadequate, having requirements that are too low, and a lack of review mechanisms.

In 2020, Stockholm Royal Seaport reviewed different wood types and wood preservatives to evaluate function as well as ethical and environmental risks for various types of wood for site-built outdoor wooden structures. This work has included co-ordination with representatives of City of Stockholm administrations and companies. The City of Stockholm will use the basis of these efforts to develop requirements to minimise risks for forestry products purchased in terms of legality, impact on biodiversity, and the rights of indigenous people.

3.9 Robust construction

The built environment is supposed to last over time which requires buildings and facilities to have high-quality design. In 2019, a lifecycle cost analysis (LCCA) of waste bins in public places was conducted.
4. Let nature do the work

Water and vegetation in Stockholm Royal Seaport play a key role in the social, economic, and ecological development of the area. Through well thought out design, blue and green structures can fulfil multiple functions, contribute to synergy effects, and provide ecosystem services. This offers opportunities in terms of recreation and attractiveness values that contribute to improved health and wellbeing.

4.1 Create and strengthen ecosystem services

Intelligent design ensures that vegetation and water fulfils multiple functions, contributes to synergy effects, and provides ecosystem services. To date, a total of 137,432 m² green spaces, such as green oases, green roofs and courtyards have been created in Stockholm Royal Seaport. To strengthen biodiversity, green spaces are planned as dispersal zones for insects and animals.

On development site the Green Space Index (GSI) requirement, in combination with the stormwater strategy, contributes to well-designed solutions that benefit biodiversity, stormwater retention, and recreational functions. The size and shape of courtyards, as well as how many walls and roofs can be used for vegetation, play a role in how large an

14 hectares of green spaces.

26,400m² green roofs.

All residents have a park within 200 meters.
An eco-efficient area can be created. To date, approximately 26,400m² of green roofs and 47,300m² of courtyards have been completed.

The GSI has been evaluated and improved with the help of workshops, in-depth interviews, and seminars with developers, property managers, landscape architects, and experts from various technical areas. Built courtyard environments were reviewed and a residents’ survey was carried out. The GSI largely serves its purpose, but has been updated to further clarify requirements and submission requirements, how balancing (i.e., requirements for distribution of ecosystem services) is applied and the role of the GSI in ensuring social values.

Work continues to develop a GSI for industrial operations in Energihamnen. Work with the GSI is a close collaboration between the City of Stockholm and developers and the GSI will be completed in 2021.

In 2020, 15,600m² of park area was created and 39 trees have been planted. A total of 546 trees have been planted of around 20 different species.

High-quality green structures in public open spaces are crucial in enabling ecosystem services. Parks and plantings along Husarviken have recreational and ecological values. They connect walkways and provide opportunities to move around the area and out of the area towards, for example the Royal National City Park. Most of the plantings along streets are rain gardens and designed to receive stormwater. The park area south of Jackiproppen has been refurbished and converted into a playground, including a activity house, Hjortgläntan.

Street planting in Brofästet continued in 2020 and has now been completed along Båthusparken. The park is a meeting places for people of all ages with large grass areas with seating edged with beds of bushes and trees. These plant beds also receive stormwater from surrounding streets. All new plant beds improve living environments for insects and birds and will contribute to improving green infrastructure.

An earlier ecology survey discovered protected larger and smaller water salamanders in a pond at the oil tanks in Loudden. Prior to land remediation the salamanders were captured and moved to a new pond. By 2020, 400 water salamanders had been moved to the new pond. To date, a total of 1,600 water salamanders have been moved.

Further reading, details and latest figures available on the website:

Let nature do the work
Map of all trees in public open spaces
The Landscape Architect Mattias Gustavsson shows the block Stora Sjöfallet
5. Participation and Consultation

An inclusive process is based on opportunities for participation and consultation during all phases of city development. It is crucial that stakeholders can participate in different ways. By using a variety of methods to drive engagement and influence, greater numbers of people, irrespective of gender, age, and background, can be included in the process.

5.1 Active participation in the city development process

An inclusive process presupposes opportunities for participation and engagement in all phases of city development. How residents experience their courtyards is a key aspect of planning for climate-adapted and lush outdoor environments. Therefore, in the autumn, a survey was conducted aimed at housing and tenant-owner associations, to gain a better understanding and knowledge of how outdoor environments such as courtyards and roof terraces are experienced. A total of 300 residents and 10 tenant-owner associations participated. The survey was part of the work to develop and evaluate the Green Space Index.

People who move to the area are invited on tours during which they are told about the current and future development of Stockholm Royal Seaport. During the year two such tours were made.

More than 10 of R&D projects currently ongoing.

41,900 visitors from more than 120 countries.

3,640 urban planners have participated in capacity building.
Information packs are also sent to new residents which contain a map of the area, information about our work on sustainability, services that are available in the immediate area, and information about whom to approach with various questions.

A digital survey of the amenities in the temporary park at Brofästet and Kolkajen was conducted in the autumn. 440 people participated and submitted 1,390 comments.

The project has a popular Facebook page, which is primarily used to communicate with residents and businesses in the area. In 2020, 160 posts were published, which were mainly about progress on development of the area and local events, as well as sustainability issues.

5.2 Sustainable consumption
In Stockholm Royal Seaport, various methods and activities are being tested that can contribute to increased recycling and a more circular economy.

The mobile Pop-up Reuse Centre contributes to increased recycling and the understanding of consumption patterns and has also become a meeting place for residents. In 2020, Pop-up Reuse visited the area twice and attracted a total of 1,760 visitors. This is slightly less than in previous years, and probably due to the pandemic and the fact that items could not be exchanged on site.

To further increase knowledge and understanding of waste management in the area, Stockholm Vatten och Avfall launched a communication campaign with a series of information films. Four digital newsletters on waste management were sent to tenant-ownership boards and other property owners. A physical newsletter was also sent to all households in Stockholm Royal Seaport. Two open day events were held at the vacuum waste collection terminal for property owners and tenant-owner associations.

In collaboration with Familjebostäder and Envac, LEDs that clearly indicate green or red on waste chutes were tested. Red means that the chute is out of order or full and green that it is working. Results were positive and discussions are underway with Envac about extending the lighting system throughout the facility.

"We’re pleased that the degree of sorting remains high and that plastic packaging and newspapers in the vacuum waste collection system are of high quality. We work continuously with various communication initiatives such as sending newsletters to property owners. We have also tested LEDs on the vacuum waste collection chutes in one neighbourhood, and this was shown to help residents use the system"
Maud Dolk, Technical Investigator at Stockholm Vatten och Avfall.

5.3 The role of business and public sector
To increase the knowledge about City of Stockholm’s development the contractor day was held. It is an opportunity for the industry to stay up to date on upcoming contract work and sustainability initiatives in Stockholm Royal Seaport. Two digital meetings were held where 2O companies and organisations participated.

In 2020, requirements were made of two of the City of Stockholm’s procurements to provide employment for individuals outside the labour market. One person was employed as an apprentice and two people were offered places for so-called work-based learning during six months. From land allocations in Södra Värtan onwards, all developers will be subject to the requirements.

Stockholm Royal Seaport is growing with more and more homes and businesses, in parallel with construction and civil engineering activity. The Stockholm Royal Seaport project has a zero vision for work-related accidents and the project collaborates with all ongoing construction activities in preventive work to achieve a safe and secure workplace. The number of reported incidents decreased in 2020, compared to 2019. This is mainly due to a reduced construction activity.

5.4 Knowledge-building and experience sharing
The ambitious sustainability goals of Stockholm Royal Seaport require co-operation and shared learning that results in innovative solutions and tools, as well as new business models.

In February 2020, a Forum for Sustainable Solutions was held on “How to achieve energy performance that stands up to scrutiny”. Nearly one hundred participants from the construction and property sectors participated in the forum, which discussed how the industry can improve its working
practices in terms of routines for monitoring and measurement, quality assurance, and handover linked to energy performance.

Nine capacity development seminars were held regarding public open spaces aimed at City of Stockholm project managers. During these seminars, children and gender equality, noise and vibrations, sustainable material choices and reduced climate impact were discussed. Two capacity development seminars were held for land-allocated developers and where norm-creative housing design, energy performance, the Green Space Index, and mobility have been discussed.

The City Development Administration’s monitoring database was launched in 2020 and is based on and adapted from Stockholm Royal Seaports experience with web-based monitoring database.

“Stockholm Royal Seaport’s experience of web-based monitoring on sustainable requirements has been extremely valuable in improving the City Development Administration’s monitoring portal”, says Frida Nordström, Environmental Co-ordinator at the City Development Department.

A dozen research and innovation projects are underway. The food circularity innovation project, MACRO, Connected SRS, the CCC, and the MCC continue to attract considerable interest.

As part of Connected SRS, four pilot projects were started to collect IoT data. The first of these projects is conducted in collaboration with Smarter Greener Cities, with the intention to monitor the ecosystem’s function in real time. The second pilot project aims to collect data on travel habits. The third pilot project examines opportunities to compile data on resource use in properties. The fourth examines the use of playgrounds, parks, and squares. This project is conducted with help from students at the Stockholm Institute of Technology.

Open house at Gasverket was held in October in collaboration with CA Fastigheter, which is developing the Gasverket area. The event was mainly conducted digitally with its own website, events on Facebook, and newly produced films on YouTube. A filmed guided tour at Gasverket behind roadblocks premiered during the day and more than 3,000 people joined, which ended at the largest of the area’s brick gas holders. There were also Corona-safe guided tours on site in small groups with a total of about 100 participants.

The architecture festival Open House Stockholm is an opportunity for the public to get guided tours of some of the city’s most exciting buildings and places. The festival aims to engage citizens in architecture and the development of the city. Stockholm Royal Seaport participated for the fourth year in a row and 10 guided tours were conducted outdoors in small groups with the theme of architecture and public art.

Representatives from Stockholm Royal Seaport have presented the climate work to the Estonian Parliament, but also conducted roundtable discussions on plus energy areas and data management in collaboration with Cleantech Scandinavia at Co-Create Future Cities, during the fair Smart City Barcelona.

Further reading, details and the latest figures at the website:
The Sustainability Strategist concludes

The pandemic affected everyone’s daily lives in 2020. In November, I was sitting at my kitchen table, on a video call presenting to the Estonian parliament how we work with climate adaptation in Stockholm Royal Seaport. Our capacity development seminars also went digital, which resulted in more people participating in them. On the other hand, we had fewer national and international study visits, and it has been harder to shift them to digital formats. And another sign that more people have spent more time at home is that the amount of residual waste has increased in Stockholm Royal Seaport compared to 2019.

To remain at the forefront and gain experience, we developed the third version of our steering document in 2020 – Sustainable Urban Development Programme – which is due to be adopted by Stockholm City Council in 2021. A key part of our knowledge development initiatives are the various research and innovation projects we participate in. In 2020, we launched four pilot schemes with different sensors in the urban space within the framework of the Connected SRS project. The MACRO innovation project is generating considerable interest from other municipalities and our submission for the Cities4PEDs project was approved.

It is encouraging to see measured energy performance data reported for the first buildings in the Brofästet phase after one year of occupancy. It is with shared ambitions, collaboration, and exchange of experience that we can continue to move forward in building and developing more sustainable cities and communities.

Christina Salmhofer
Sustainability Strategist
Stockholm Royal Seaport, Stockholm City Development Administration
Stockholm City and Agenda 2030

In 2015, UN member states adopted Agenda 2030, incorporating the 17 Sustainable Development Goals (SDGs). The SDGs are integrated and indivisible and several of the goals are dependent upon and closely linked to each other. The Agenda 2030 is global, but it is at the local level large parts of the work are put into practice, and it is appropriate that Stockholm should be a leader in this.

Agenda 2030 focuses on how cities create good access and participation for all citizens, a favourable climate for businesses and innovation, and attractive housing environments. At the same time, cities are required to reduce their environmental and climate impact, break unsustainable consumption and production patterns, fight segregation and inequality, and increase equality.

Further reading on the website:

Stockholm Royal Seaport's contribution to Agenda 2030
1. Vibrant City

**Goal**

1.1 Create a robust and cohesive city structure

KPI

Planned waterfront, pedestrian and bicycle lanes in ongoing detailed development plans. 80% of residents are extremely/fairly satisfied with pedestrian/bicycle access to neighbouring areas. Resident survey 2019.

1.2 Contribute to the creation of an equal city

KPI

Development of concepts for norm-creating housing design. 53% rental apartments (of which 9% student accommodation) and 47% tenant-owned apartments. Apartment sizes vary as follows: 10% one-room apartments, 33% two-room, 29% three-room, 24% four-room, and 4% five-rooms or more.

1.3 Plan for well-functioning everyday life

KPI

To date, we have built 1 elementary school, 11 pre-school, and 1 sports hall. According to the 2019 residents survey, residents are extremely or fairly satisfied with access to:
- School and day care 76%.
- Culture activities 12%.
- Public spaces 81%.
- Public transport 81%.
- Supermarkets 56%.
- Restaurants, cafes etc. 47%.
- Squares and meeting places 72%.
- Sports and leisure activities 42%.

1.4 Create spaces that are attractive and safe all day, all year

KPI

Safety walks. Planned public open space with social values. Follow-up of use of public space with the help of sensors. Public open space with social values 16%, equivalent to 7 m² per dwelling. According to the residents survey, 79% feel safe in Stockholm Royal Seaport.

**Sustainable development goals**

2. Accessibility and Proximity

**Goal**

2.1 Prioritise walking, cycling, and public transport in planning

KPI

Implementation of planning regulations for walking and cycling. Prioritisation of public transport. Shortcut ratio varies between 1.07 and 1.36 for those who have the shortest distance to walk to important destinations (Norra 2). According to the 2019 residents survey, the proportion of residents who are extremely or quite satisfied with access to:
- Walkways/pavements 89%.
- Cycle paths 77%.
- Public transport 66%.
- Safety of pedestrians 59%.
- Cyclists 56%.

7550 bicycle spaces and 1890 car spaces for 6750 residents. 8% of on-street car parking spaces for carpooling. 7% of on-street car parking spaces have electrical charging (carpool) and a fast-charge station. 10% of parking spaces on development land have electrical charging. Increased requirement for electrical charging in future land allocations.

2.2 Plan for living street spaces that support flexible use

KPI

Streets for activity and recreation are planned in future phases. Commercial space: 14%. Public open spaces with social values: 16% (=17 m²/dwelling). According to the 2019 residents survey, 79% of residents are extremely/quit satisfied with safety in the area.

2.3 Infrastructure should support co-loading and efficient, sustainable freight transport

KPI

Established CCC and MCC. Co-loading effect in the construction area was 80%.

**Sustainable development goals**

3. Resource Efficiency and Climate Responsibility

**Avfall och masshantering**

**Goal**

3.1 Continuously reduce the amount and increase the purity of waste

KPI

Residual waste: 98.6 kg/person, newspapers: 5.6 kg/person (2020), and plastic packaging: 5.9 kg/person. Pop-up Reuse was in the area on two occasions and 1.9 tonnes of bulky waste, 0.3 tonnes of electronics, and 0.4 tonnes of hazardous waste were handed in. Construction waste (developers) average amount:
- Construction waste: 44.6 kg/m² GFA
- Construction waste (public open space): 62% have gone to material recycling.
- 37% to energy recycling.
- 0% reuse.
- 1% mixed.
- <1% to landfill.

100% of households and businesses have kitchen waste grinders.

**Energy and Climat**

**Goal**

3.4 Efficient energy use in buildings and facilities

KPI

Experience feedback Norra 2 and Brofästet. Metered [requirements 55 kWh/m² per years Norra 2] = 70 kWh/m² Aₕₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑₑエネルギーと気候責任

**Goal**

3.5 Stockholm Royal Seaport is to be fossil-free 2030

KPI

Development site: total produced solar energy: 558 MWh/year (metered).
Public open space, MCC: total produced solar energy: 243 MWh/year (metered). 7% of the total number of street car parking spaces in public open space have electrical charging (carpooling) and a fast-charge station. 10% of car parking spaces on development sites have electrical charging. Requirements for electrical charging has increased to 50% of car parking spaces in future land allocations.
In 2020, the share of renewable fuel used for truck transports made by the City of Stockholm’s own contractors in Stockholm Royal Seaport amounted to 80% and 2% for machinery.

3.6 Low climate impact of buildings and facilities from a lifecycle perspective

KPI

Average climate impact (public open spaces):
- Norra 1: 260 kg CO₂e/mt².
- Västra: 840 kg CO₂e/mt².
- Norra 2: 100 kg CO₂e/mt².
Climate impact from energy use in Norra 2: Total amount is 1,640 tonnes CO₂e equivalent to approx. 94.8 kg CO₂e/person.
Measures for a fossil-free workplace have contributed to reductions in emissions equivalent to 1,840 tonnes CO₂e in 2020. Biochar used in plant beds in Stockholm Royal Seaport have sequestered 1,100 tonnes of CO₂ to date.

Achievements 2020
Sustainable Buildings

Goal KPI
3.7 Good indoor environments in design and use of buildings
80% of developers meet gold standard for indoor environments.

3.8 Sustainable choice of construction materials
Proportion of non-approved deviation of total registered deviations:
• developers: 22%.
• public spaces: 13%.
100% of developers and City of Stockholm contractors document materials in digital logbooks. 100% of wood used is FSC certified, 100% of natural stone used meets City of Stockholm ethical requirements. Review of environmental and social aspects of wood in outdoor construction.

3.9 Robust construction
LCCA-based fall protection and waste bins connected to the vacuum waste collection system in 2019.

Sustainable development goals

4. Let nature do the work

Goal KPI
4.1 Use ecosystem services to build a resilient and healthy city environment
Updated Green Space Index.
93% property developers fulfill GSI.
14 hectares of green spaces such as green oases, green roofs, and courtyards have been created to date.
100% of dwellings have access to park and nature areas within 200 metres.

Sustainable development goals

5. Participation and Consultation

Goal KPI
5.1 Stimulate active participation in the development of Stockholm Royal Seaport towards a sustainable and open city area
Three information films were produced.
Two digital surveys.
90 plant boxes, 2 thematic tours. Digital Gasverksdagen and architectural festival, Open House Stockholm (More than 10,000 visitors online and 400 in person).

5.2 Create conditions for sustainable consumption
Pop-up Reuse centre: available in the area twice in 2020 (1,762 visitors).
Communication campaign on waste.

5.3 Private and public activities contribute to the sustainable profile of the area
4 pre-schools of 11 are Green Flag certified.
Two safety walks.
Systematic working environment initiatives.

5.4 Knowledge and experiences generated in Stockholm Royal Seaport is to be shared
10 ongoing R&D projects.
Capacity development in 2020: 265 participants (1,630 participants in total).
Sustainable Solutions Forum 2020: 90 participants (2,000 participants in total).
2,000 visitors in 2020; 41,900 since 2012.

Sustainable development goals
Describes how compact a building is. Calculated as the ratio between a building’s enclosed area, (exterior walls, exterior roofs, and bottom plate) and heated square metre area ($m^2 A_{\text{temp}}$).

Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecosystem services</td>
<td>Ecosystem services are all the different benefits accruing to humans from nature and that contribute to our wellbeing and quality of life.</td>
</tr>
<tr>
<td>Form factor</td>
<td>Describes how compact a building is. Calculated as the ratio between a building’s enclosed area, (exterior walls, exterior roofs, and bottom plate) and heated square metre area ($m^2 A_{\text{temp}}$).</td>
</tr>
<tr>
<td>Green oasis</td>
<td>An area dominated by vegetation covering at least 300m².</td>
</tr>
<tr>
<td>Green Space Index, GSI</td>
<td>A tool used to calculate eco-efficiency of given spaces, i.e. spaces that contribute positively to an area’s ecosystem and local climate as well as social values linked to greenery and/or water.</td>
</tr>
<tr>
<td>Gross floor area, GFA</td>
<td>Gross floor area is the sum of all a storey’s floor area up to the exterior walls of enclosed building parts.</td>
</tr>
<tr>
<td>HVO</td>
<td>A renewable fuel that can be blended in diesel or that can replace diesel in diesel engines.</td>
</tr>
<tr>
<td>Mobility Index, MI</td>
<td>Calculation tool for evaluating sustainable travel with measures taken at property level.</td>
</tr>
<tr>
<td>Neighbourhood park</td>
<td>A large park of at least three hectares, which functions as a destination and a social meeting point for a neighbourhood, or a larger part of one or more neighbourhoods.</td>
</tr>
<tr>
<td>Norm creative house planning</td>
<td>A way of changing and breaking down social norms for how housing can be planned and designed.</td>
</tr>
<tr>
<td>Park space</td>
<td>Park space are parks of at least 0.2 hectares. This year’s figure is lower than previously reported due to a definition change.</td>
</tr>
<tr>
<td>Public open spaces with social value</td>
<td>Public open spaces with social value. Calculated as a percentage of the total area of completed detailed development plans.</td>
</tr>
<tr>
<td>Residual waste</td>
<td>Waste that remains when hazardous waste, electrical waste, bulky waste, organic waste and recyclable material have been sorted.</td>
</tr>
<tr>
<td>Swedish building code regulations, BBR</td>
<td>A collection of regulations and general advice drawn up by the National Board of Housing, Building and Planning and that apply to all buildings in Sweden.</td>
</tr>
</tbody>
</table>

Follow progress in: stockholmroyalseaport.com

Read more about our sustainability work here: stockholmroyalseaport2030.se

Norra Djurgårdsstaden: Stockholm Royal Seaport

Royalseaport

Sustainable Urban Development Programme