

# Sustainable Urban Development Programme

Stockholm Royal Seaport is leading the way to a sustainable future

2021



Stockholms  
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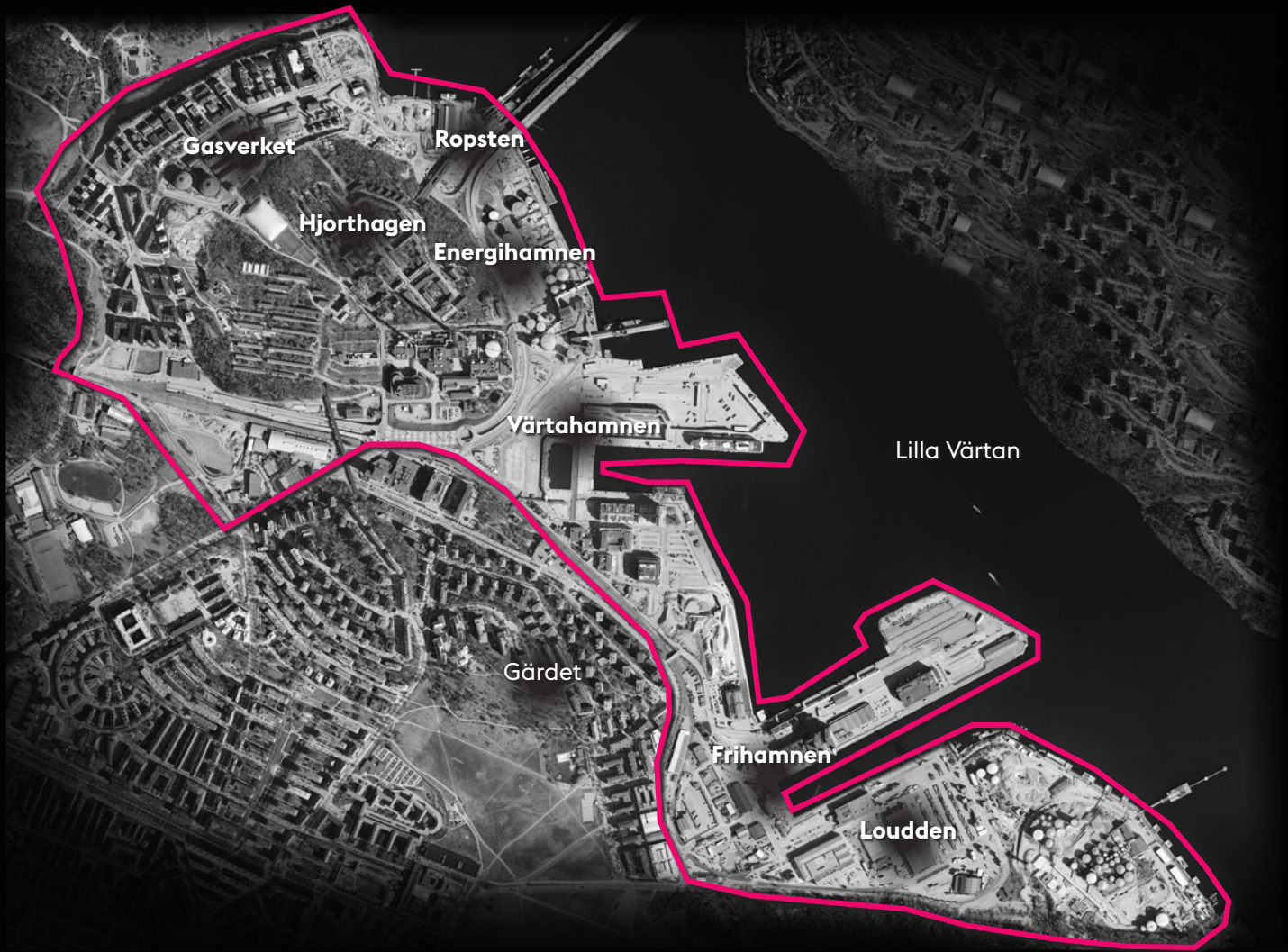


**S**tockholm Royal Seaport is a sustainability-profiled area designated by the City of Stockholm City Council with the task of testing and developing new solutions and processes for a more sustainable future. The area is in an attractive location with eight kilometres of coastline directly adjacent to the Royal National City Park. Central Stockholm is just 10 minutes away by bike. There are a number of challenges to address related to the transformation of a closed industrial area to an open city – for example, soil contamination from previous activities as well as noise and risks posed by ongoing construction. Stockholm Royal Seaport is one of Stockholm's most extensive and complex urban development areas. It is being built to meet the city's growing needs for everything from housing, workplaces, services, and public transport to schools, green areas, culture, and sports.

Stockholm Royal Seaport stretches from Hjorthagen in the north to Loudden in the south. The development project is opening up areas that were previously used for gas production, port, and other industrial activities and a waterfront that was previously closed for public access. Planning began in the early 2000s and development will continue for many years and in several different phases. The project is taking place on land owned by the City of Stockholm.



Royal National City Park

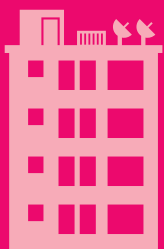


Royal National City Park

**Many of Stockholm's urban** development areas surround the inner city, and Stockholm Royal Seaport is the largest. Stockholm Royal Seaport consists of subareas: Hjorthagen, Värtahamnen, Frihamnen, and Loudden. These areas are important in the development of the inner city and the region. Energihamnen is also located in the area, and industrial activity will continue here. Connecting Stockholm Royal Seaport with the rest of Stockholm to form a dense and multifaceted city binds together the inner city and opens it up to the surrounding areas of greater Stockholm.

# 236 hectares

Stockholm Royal Seaport is half the size of Södermalm.



# 12,000

At least 12,000 new housing units are planned, of which the majority are in Hjorthagen and Loudden. Occupancy began in October 2012.

# 3,000

housing units had been built by January 2021.

# 35,000

new workplaces are planned. First occupancy in Södra Värtan was in 2010. Commercial space amounts to

# 600,000 m<sup>2</sup>

## About this document

This steering document is one of several documents that describe the development of Stockholm Royal Seaport and sets out the City of Stockholm's guidelines and ambitions for urban planning and sustainability in urban development. The aim of the programme is to show how Stockholm Royal Seaport can be developed with ambitious targets in terms of sustainable urban development. This document is directed at politicians, developers, authorities, city officials, and visitors.

The programme is structured in the following way. First, the vision is described followed by an introduction to the project. Then, the area's unique qualities and opportunities are described; these are key starting points on which to base future development. Then the five goals that apply to all development of the area are described. Finally, a process description is provided from an urban planning and development perspective.

Each goal begins with a brief introduction that outlines how the goal directly and indirectly relates to the UN Agenda 2030 and the City of Stockholm's overall planning. For each goal, there are a number of urban planning principles that provide guidance and inspiration for development, as well as a number of governing sustainability targets that form the basis for the requirements formulated prior to each detailed development plan. For each sustainability target, examples are given of what the sub-targets look like. Appendix 1 provides details of all sustainability targets, sub-targets, examples of measures and key figures, as well as which committees and boards are responsible for different components of implementation and monitoring. Appendix 2 provides clarifications regarding Agenda 2030 and Appendix 3 clarifies how the overall plan's urban development objectives relate to Stockholm Royal Support's specific goals. Finally, there is a glossary with explanations of terminology.

## Changes from previous versions

This document is the third version of the Sustainable Urban Development Programme. The first was released in 2010, and the second in 2017. The following elements have changed since the previous version:

- The vision section has been shortened.
- The programme has been related to Agenda 2030 and the master plan Stockholm City Plan.

- What was previously referred to as five strategies, is now referred to as five goals.
- City construction principles and sustainability targets have been reworked and defined. The number of city construction principles has been reduced.
- The number of sub-targets has also been reduced, clarified, given timings, and supplemented with actions. In those cases where monitoring key figures are missing, this is due to that the sub-target relates to ongoing innovation work and so no key figures have yet been established.

Various sections have been shortened due to increased precision and focus on wording, rather than a reduction in ambition levels.

## Delimitations

This document focuses on urban development principles and sustainability targets to plan and manage the City of Stockholm's and developers' construction and development projects in Stockholm Royal Seaport.

- The programme does not include any existing operations or regional infrastructure in the area, these are however important parameters and are accounted for in the planning. Neither does the programme include industrial or port operations or traffic to and from the port, the Northern Link motorway, or the road link to the nearby island of Lidingö.
- The programme only reports targets and principles with ambitions that exceed statutory requirements. For example: because noise levels are regulated by law, they are not included as a target.
- The programme does not deal with any conflicts related to stated targets, which are addressed later in the process in the planning programme for a sub-area or in detailed development plans.

## Working group

This document has been prepared by the City Development Administration and the City Planning Administration in consultation with the relevant City of Stockholm administrations and companies.



# Contents

## Introduction

- 6** The City of Stockholm's work on sustainability
- 7** Agenda 2030 and Stockholm Royal Seaport
- 8** Vision
- 10** Conditions

## Unique qualities

- 12** Unique qualities – yesterday, today, and tomorrow
- 14** Gasverket
- 16** Hjorthagen
- 18** Industry and infrastructure
- 20** Port and city
- 22** Water space and waterfront
- 24** Royal National City Park

## Five goals

- 26** Introduction
- 28** Goal 1. Vibrant city
- 34** Goal 2. Accessibility and proximity
- 38** Goal 3. Resource efficiency and reduced climate impact
- 44** Goal 4. Let nature do the work
- 48** Goal 5. Consultation and learning

## Processes

- 52** Process, steering documents, and organisation

## Appendices

- 56** Appendix 1. Sustainability targets, measures, and key figures
- 64** Appendix 2. Stockholm Royal Seaport's contribution to Agenda 2030
- 68** Appendix 3. The master plan Stockholm City Plan's urban development goals and Stockholm Royal Seaport's goals
- 70** Appendix 4. Glossary



# The City of Stockholm's work on sustainability

**The City of Stockholm's** vision is to be a global leader in environmental and climate initiatives by achieving the goals of the UN Paris Agreement. One step on this journey is bringing together the City of Stockholm's Vision 2040 with Agenda 2030. The City of Stockholm's activities shall also ensure that all children who come to Stockholm have their rights respected, in accordance with the UN Convention on the Rights of the Child.

Stockholm has a long tradition of systematic work on the environment and climate. Since the early 1900s, the City has worked purposefully and built up well-developed infrastructure for transport, energy, waste, water, and sanitation. The

City adopted its first environmental programme in the 1970s. In the mid-1990s, Hammarby Sjöstad became Stockholm's first environmentally-profiled development area.

In 2010, Stockholm was named the first European Green Capital. Further steps to bring in the social

aspect of sustainability were taken in 2015 with the establishment of the City Stockholm's Sustainability Commission, which among other things resulted in the designation of four urban development areas. Focus Skärholmen was commissioned as the city's profile project for socially sustainable urban development.

Stockholm Royal Seaport being identified as a sustainability profile area in 2008 helped consolidate Stockholm's position as one of the world's most sustainable cities. In 2015, Stockholm Royal Seaport was named as Best Sustainable District by C40 Sustainable Cities at the UN climate conference in Paris (COP21). Every year, large numbers of national and international visitors come to Stockholm Royal Seaport to learn more about the project. Ambitions for the city's latest environmental programme, 2020–2023, have been raised and the goal is for the City of Stockholm to be fossil-fuel free and climate-positive by 2040. Stockholm Royal Seaport will be a testbed to take that work forward.



# Agenda 2030 and Stockholm Royal Seaport

In 2015, the UN General Assembly adopted Agenda 2030 with 17 global goals – known as the Sustainable Development Goals (SDGs) – that span a large number of societal challenges based on human rights. Signatory countries pledged to implement societal change that leads to achieving economically, socially, and environmentally sustainable development by 2030. The agenda is global, but it is at the local level that significant proportions of the commitments and work with the goals are put into practice, and Stockholm will be a leader in their implementation.

Agenda 2030 puts focus on how the cities create opportunities for accessibility and participation for all residents, a supportive climate for businesses and innovation, and attractive residential environments.

At the same time, cities need to reduce environmental and climate impact, break unsustainable consumption and production patterns, counteract segregation and inequality, and increase gender equality. The City of Stockholm therefore needs to develop working methods

to integrate different perspectives for sustainable development in several parts of society. The implementation of Agenda 2030 will, among other things, lead to increased gender equality, increased social inclusion, reduced inequality, and reduced climate impact.

Work with Agenda 2030 also stimulates collaboration, bridges silos and organizational boundaries, and is characterized by learning and the exchange of experiences.

The development of Stockholm Royal Seaport is primarily based on SDG 11, Sustainable Cities and Communities, although works actively across all the goals. This document is characterised by how the Stockholm Royal Seaport development project can contribute locally to achieving the SDGs and create synergies and leverage effects between economic, environmental, and social sustainability.

Appendix 2 describes how the SDGs can be achieved in a local context with the help of the urban development process.





# Vision





# Stockholm Royal Seaport shows the way towards a sustainable future

A stroll through Stockholm Royal Seaport is a fascinating journey through the area's history, contrasts, and characters. This is where water and harbour, the Royal National City Park, large-scale infrastructure, sites of cultural and historical interest, dwellings, and businesses come together. In this compact and multi-faceted area, the focus is on people, with nature also being an integral aspect. Stockholm Royal Seaport feels inclusive with its safe, vibrant meeting places. Resource-efficient, holistic solutions result in reduced climate impact, increased climate adaption, and prepares Stockholm Royal Seaport for challenges of the future. Co-operation and innovative new thinking pave the way for creative solutions and encourage wide community involvement. This is how Stockholm Royal Seaport is driving the next generation of sustainable city areas.





# Preconditions





The vision for Stockholm Royal Seaport has been defined by the City of Stockholm's overarching steering documents\* including Vision 2040, the City's budget, its Environmental Programme and Stockholm City Plan amongst others.

The vision is concretized in five goals: Vibrant city, Accessibility and proximity, Resource efficiency and reduced climate impact, Let nature do the work, and Participation and learning.

### Goals in brief

**Vibrant city** focuses on people through the establishment of an attractive and vibrant city environment.

**Accessibility and proximity** is about creating a dense and accessible city that provides a basis for sustainable transport. Flexible and robust solutions that contribute to **Resource efficiency and reduced climate impact** to meet future challenges are being developed in Stockholm Royal Seaport. **Let nature do the work** describes how ecosystems can be used to create rich plant and animal life and for people's health and wellbeing. **Participation and learning** is stimulated in Stockholm Royal Seaport to create interest and ties to the site and to spread knowledge and experience.

The goals are described in the urban planning principles that provide guidance to the complex urban planning processes and the sustainability targets that govern work on sustainability. The principles and goals are defined and clarified throughout the process: from overarching urban development programmes and in-depth area programmes to detailed development plans. In each detailed development plan, the urban planning principles are further specified in quality programmes. Each detailed development plan is also linked to agreements for development with special action programmes with sustainability requirements and how they are to be monitored in line with specific sites' conditions.

The sustainability targets govern the City's and developers' construction and civil engineering projects. Sustainability targets are monitored throughout the process – starting from a signed land allocation agreement. Results of the monitoring are reported in an annual sustainability report. A monitoring of the urban planning principles will be developed. More about the process, steering documents, and how work is organised can be found from page 52 onwards.

The City's high ambitions for Stockholm Royal Seaport

entail high demands from well-thought-out priorities. Sustainable urban development is based on a holistic approach and long-term perspective in planning and implementation. The Sustainable Urban Development Programme is one of several steering documents that govern the expansion of Stockholm Royal Seaport. The project aligns with the City's budget and investment strategy, where important trade-offs are made within the project's various interests and business goals.

The city strives to ensure good revenues from land sales as value is created when the area is transformed. The project is defined by cost awareness regarding investment costs and operating finances.

An urban construction project of Stockholm Royal Seaport's complexity and character relies upon a dynamic process where previous plans and decisions are continuously reviewed, revised, and updated. The planning of Stockholm Royal Seaport has been ongoing since the area was identified in the City of Stockholm's City Plan in 1999. The decision that the area would be developed with a sustainability profile was made in 2008 and was thus introduced into the planning process at a later stage. Ground was first broken in 2011.

For Stockholm Royal Seaport to remain at the forefront of sustainable urban development, the programme's goals are based on the goals in the Environmental Programme and the Climate Action Plan, but with more and higher ambitions to test the feasibility of new ideas. Results and experiences are then returned to the upcoming revision of these steering documents. To achieve this, tools such as land allocation competitions, innovation projects and procurement strategies are used to stimulate collaboration and development. The knowledge building that takes place in the project will also be used and shared with the City of Stockholm's other urban development projects.

Stockholm Royal Seaport will be an obvious place to try new innovative working routines, methods, and solutions – a test-bed that also ensures technological neutrality. Results, experiences, and operational methods can then be used in the continued development of Stockholm, but also shared nationally and internationally.

\* Steering documents such as the budget states that the City of Stockholm will be a leader in the implementation of Agenda 2030 and use it as the starting point for the City's sustainable development.





Unique qualities  
– yesterday, today,  
and tomorrow



Stockholm Royal Seaport is brimming with diversity and contrast. There is variety in its urban and natural environments with different characters and expressions, ranging from small-scale housing construction and beautiful natural surroundings to heavily developed and large-scale industrial environments for ports and energy facilities. Here, old meets new, and large meets small.

Building on what already exists is a necessary prerequisite for long-term sustainable urban development and at the same time the basis for creating a dynamic and attractive urban environment. This chapter describes the conditions and approach to Stockholm Royal Seaport's unique qualities. By emphasising and being inspired by these qualities, an area with its own clear identity is created that combines the feeling of being an urban village with the experience of a dynamic and inspiring place.

### Cityscape and topography

The area represents part of the organic archipelago landscape, where water has historically existed around Hjorthagsberget and in bays at Frihamnen. The landscape has changed over time, partly naturally and partly through landfills. Today, large parts of a low-lying urban landscape created through filling and excavation, bordered by Hjorthagsberget and Gärdet, stand out as distinctive topographical elements. Modern buildings, Värtaverket's facilities and ships in the port amplify these elements. Natural variation in the area is being created out of the character and history of the urban landscape, and by using and enhancing the specific qualities of each subarea.

### Based on Stockholm Royal Seaport's character

Existing environments and buildings provide the basis for a distinctive local identity with historical ties that together contribute to the area's identity. The principle for this is based on the following:

- **Make accessible** by improving access to the area's unique qualities – as a whole and in all its details.
- **Visualise** the areas qualities so they are utilised in the cityscape. For example, buildings that are identity-generating can be given a prominent role, and the values in an area can be felt along its streets and in the visual field.
- **Develop qualities** by allowing new prerequisites to impact existing environments so that distinctive features and values are highlighted and enhanced.

### Create tomorrow's unique qualities

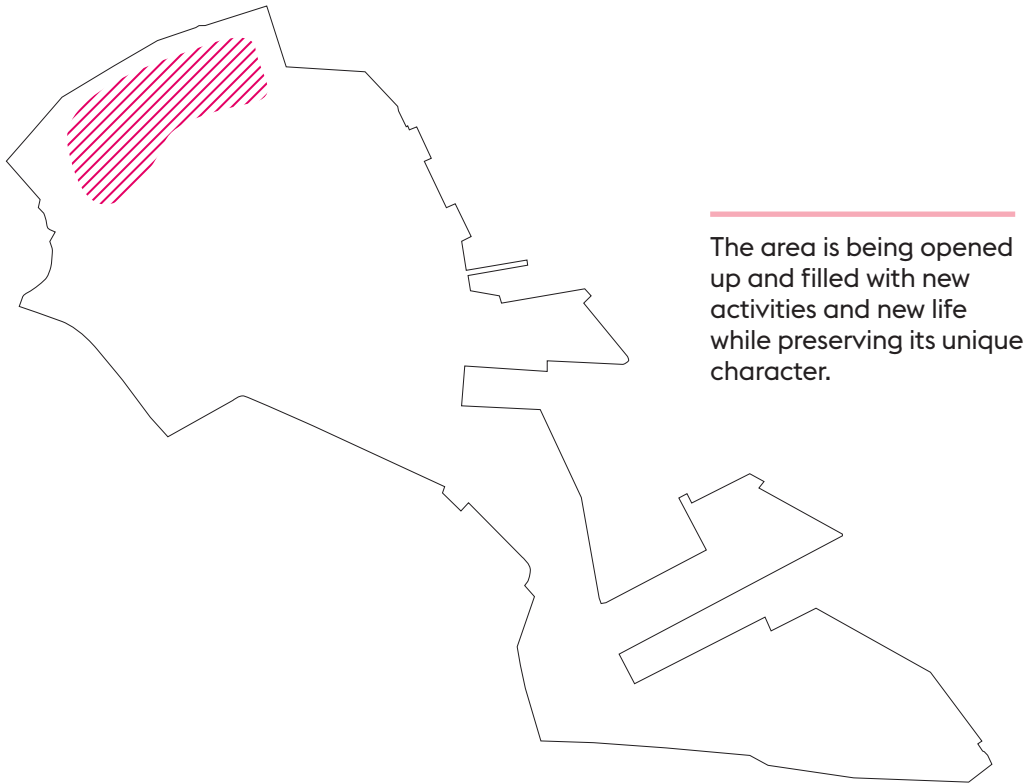
Planned urban development in Stockholm Royal Seaport represents a great opportunity to add new qualities to the area, conveying our time to future generations. New layers experienced as interesting and important in our time, and in the future, are being added to the unique qualities of the urban district as it is today, such as sustainable urban planning.

Existing buildings and environments can be given new life by acquiring new functions, but also by becoming part of a new context. A key success factor is being able to sense the history of the place and ensure the contemporary enhances how the area is experienced. This section sets out an approach for how this can be done.



Bobergsskolan was inaugurated in 2019.

Photo: Eva Nielsen



## Gasverket

**Gas for the City's** gas grid was once produced in the Gasverket area. The area has been closed to the public for more than a hundred years. Now, parts of the area have been opened up and filled with new activities and new life. This development will preserve the unique character of the area.

A substantial part of the area was planned and designed by architect Ferdinand Boberg at the end of the 19th century. You can still make out gasworks production lines from different eras, and the area has an open structure of free-standing buildings with unique architecture. Brick is the dominant material in the area. Many buildings and production plants remain and the environment as a whole has considerable cultural heritage value, as do individual buildings due to their high-quality architecture.







Interior qualities will be used when buildings are given new functions.



Photo: Lenart Johansson



Illustration: Agro Designsystem

Gasverket will be developed as a cultural hub.

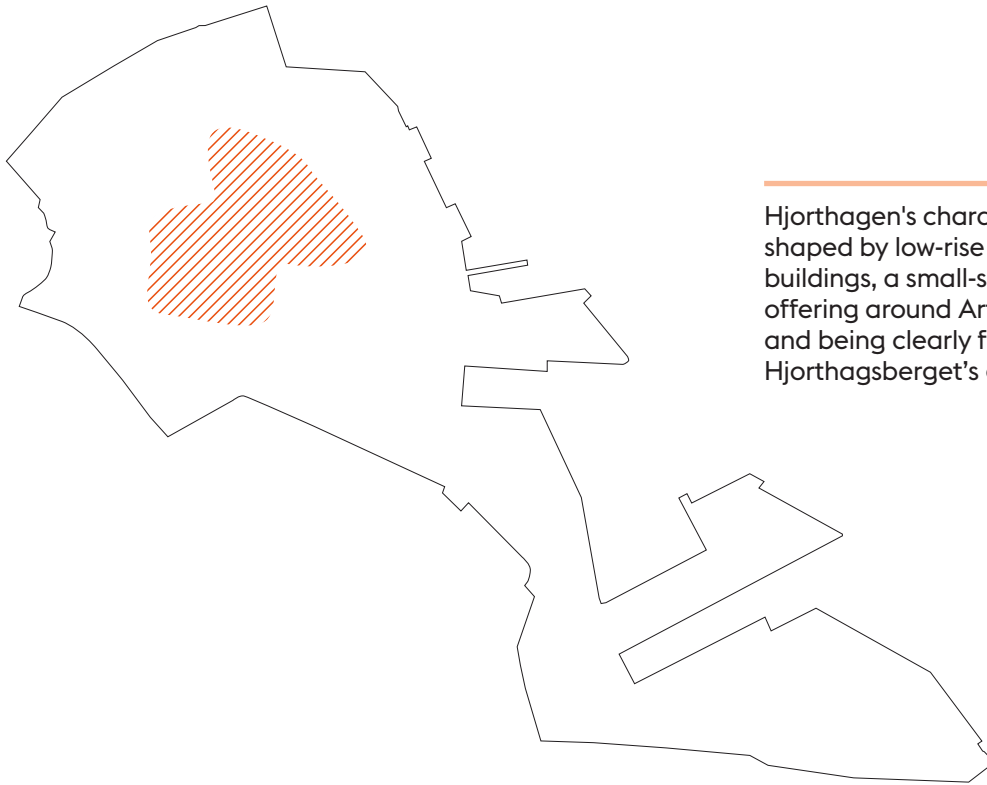


The lattice structure of Gasometer 3.

## Approach

- Gasverket opened up and brought to life. The area should be welcoming to all so that as many people as possible can share Gasverket's unique values and history.
- Gasverket has a key role to play in the future of Hjorthagen and is instrumental in interconnecting the old and new parts of this urban district.
- Gasverket is intended to be a destination for the wider public, while offering services for the entire urban district. The area features a high proportion of public sector functions.
- The high-quality architecture of the area is to be preserved through taking care of existing buildings and with contemporary additions. The characteristic introversion of existing buildings is to be weighed against opportunities to bring buildings back to life.
- Gasverket's characteristic structure, where each building connects to a square or a park and does not feature any rear sides, is an important starting point for future additions.
- For adjacent blocks Gasverket's uniqueness will be highlighted with contrasts with new buildings, for example in the choice of façade materials.
- Gasverket's existing buildings are to be the primary focus, with new added buildings enhancing, but not dominating, Gasverket. The dominant role of the gas towers will be maintained in relation to new construction and important viewshed towards these are to be preserved.
- Sustainability targets for Stockholm Royal Seaport need to be weighed against the highly significant cultural heritage values in the gasworks area.





Hjorthagen's character is shaped by low-rise apartment buildings, a small-scale service offering around Artemisgatan and being clearly framed by Hjorthagsberget's greenery.

## Hjorthagen

**Hjorthagen** is a residential area with buildings that were added at various periods between 1897 and 1965. The character of the area is marked by its small-scale urban development with low-rise apartment buildings and shops on the ground floor positioned along green city streets and by its vegetation and topography. By contrast, there are also what were for their time radically modernist white apartment buildings in Abessinien, designed by architect Hakon Aalberg.

Hjorthagen's atmosphere as a suburb and former working-class district associated with Gasverket and the port is still decipherable. Hjorthagen's character is shaped by low-rise apartment buildings, a small-scale service offering around Artemisgatan and being clearly framed by Hjorthagsberget's greenery.

Hjorthagen's strong local identity associated with its small-scale service offering and public sector activities needs to be handled sensitively because its centre of gravity will shift towards the extensive development in the gasworks area.







Photo: Lennart Johansson

A narrow building area in Abessinien

Hjorthagsparken will be developed adjacent to the new buildings with the aim of strengthening its ties to the existing layout of Hjorthagen.



Aerial view of Hjorthagen.

Photo: Lennart Johansson

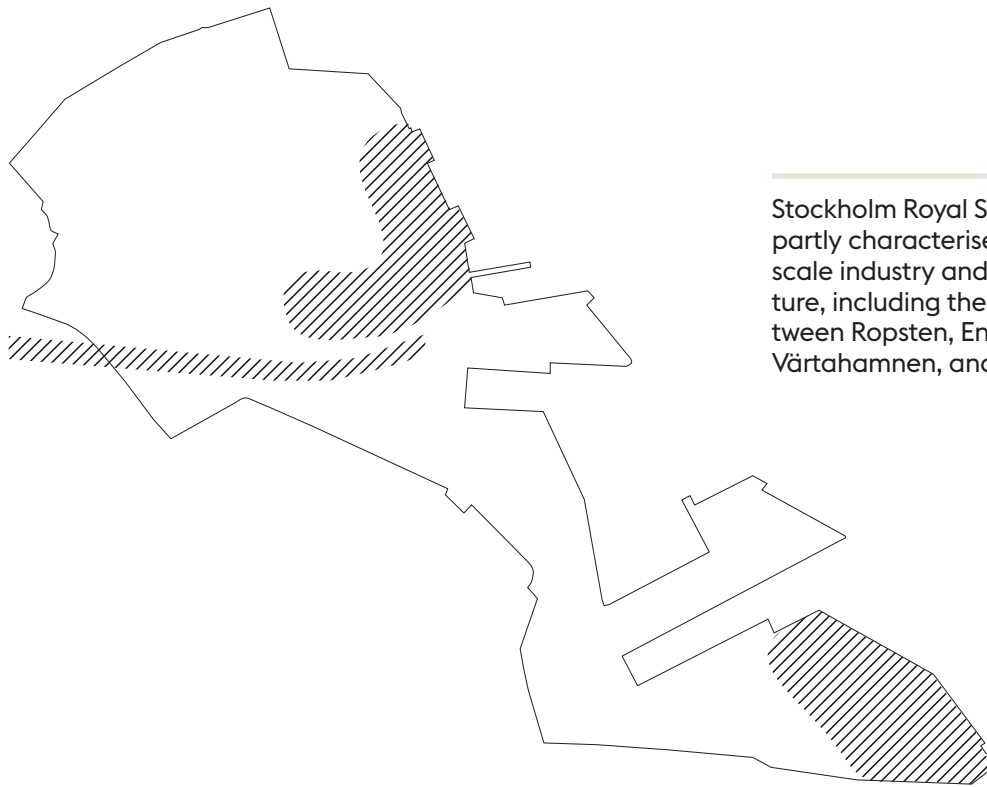


Photo: Lennart Johansson

## Approach

- The small-scale nature of Hjorthagen is one of its qualities.
- Strengthen ties to the rest of the city but allow parts of Hjorthagen's boundaries to remain visible.
- Preserve the green belt that encircles Hjorthagsberget.
- The addition of buildings that attempt to connect the old Hjorthagen with Gasverket should be made in consideration of the park.
- Hjorthagsparken can help to link the new and the old Hjorthagen and strengthen the social qualities by increasing movement between the two areas.





Stockholm Royal Seaport is partly characterised by large-scale industry and infrastructure, including the area between Ropsten, Energihamnen, Värtahamnen, and in Loudden.

## Industry and infrastructure

**Stockholm Royal Seaport** is partly characterised by large-scale industry and infrastructure, including the area between Ropsten, Energihamnen, Värtahamnen, and in Loudden. The concrete works, chimneys, and oil tanks in the area have given these places a distinct character. Some of the buildings are monumental and can be seen from outlying areas of the city.

The city's critical infrastructure and supply systems are visible here, largely through their expression and scale, but also their openness and accessibility. To some extent, these objects and areas create physical and mental barriers. In these areas, traditional urban fabric has been replaced by large-scale edifices, including buildings and infrastructure. The area's functions indicate that this character is unlikely to change in the foreseeable future. In Loudden, however, it will be replaced by a new urban area.



Photo: Kent Dahlberg, Norr Rön och entreprenad AB





One of the venting towers for the Northern Link motorway.

Photo: Kasper Duddik Arkitekt & Rundquist

The design of individual objects plays a major role.



Photo: Lenmar Johansson



Energihamnen

Photo: Lenmar Johansson

## Approach

- Industrial activities in the area are regarded as vital and critical parts of the city's supply and economic sustainability.
- Industrial areas and infrastructure are considered part of the city and should form a coherent part of the city. Barrier effects are reduced.
- Where possible, business targeting the public or that are more people-intensive should be located in the area or its border zone so as to create a safe and populated environment.
- Safe and well-defined street spaces will be created throughout Energihamnen so that people can move through and within the area, on foot and by bicycle.
- New buildings can be inspired by the area's industrial character, for example the choice of material and design language, and trending towards a higher level of ambition in their design.
- The design of larger, individual objects plays a major role.
- To contribute to the area's identity and anchoring it in history, characteristic buildings and facilities are preserved, where possible. Even simpler buildings and structures can play an important role in these efforts.





## Port and city

**The port and its activities** have always played an important role for Stockholm, especially from an economic perspective. The port is an important freight and logistics hub for the entire Mälaren region and plays a significant role in cruise and passenger services in the Baltic Sea. The port also plays a key role in efforts to transform the Stockholm region into a long-term sustainable region, because shipping is a sustainable mode of transport for moving large quantities of goods. Over time, the port and its activities have become intertwined and integrated with the city's other functions. Some freight-intensive port functions have been moved from the existing port to sites such as a new port in Norvik.

The Stockholm Stock Exchange, hotels, and art galleries are located here: these are important for the area's identity and create contrast. The port contributes an interesting dynamic to the city where large-scale buildings, water space and docks, along with stark linear elements such as wharves and piers enrich the urban environment. From time to time, port operations also generate intense flows of people and goods. Commercial boat services, which are particularly evident in the mornings and evenings, are important for the sustainable development of the city and the wider area.

Stockholm is a city on water, a port and shipping city, which has facilitated trade and meetings among other things. The Stockholm Royal Seaport has been, and continues to be, one of the main entry points to Stockholm.



The role of the port as a gateway to the city should be visualised.



A visualisation of Södra Värtan.

Illustration: AIX Arkitekter and Suteki studios



Magasin 2 in Frihamnen.

The new Värtaterminalen has become an extension of the city's public space via a rooftop landscape with public access.

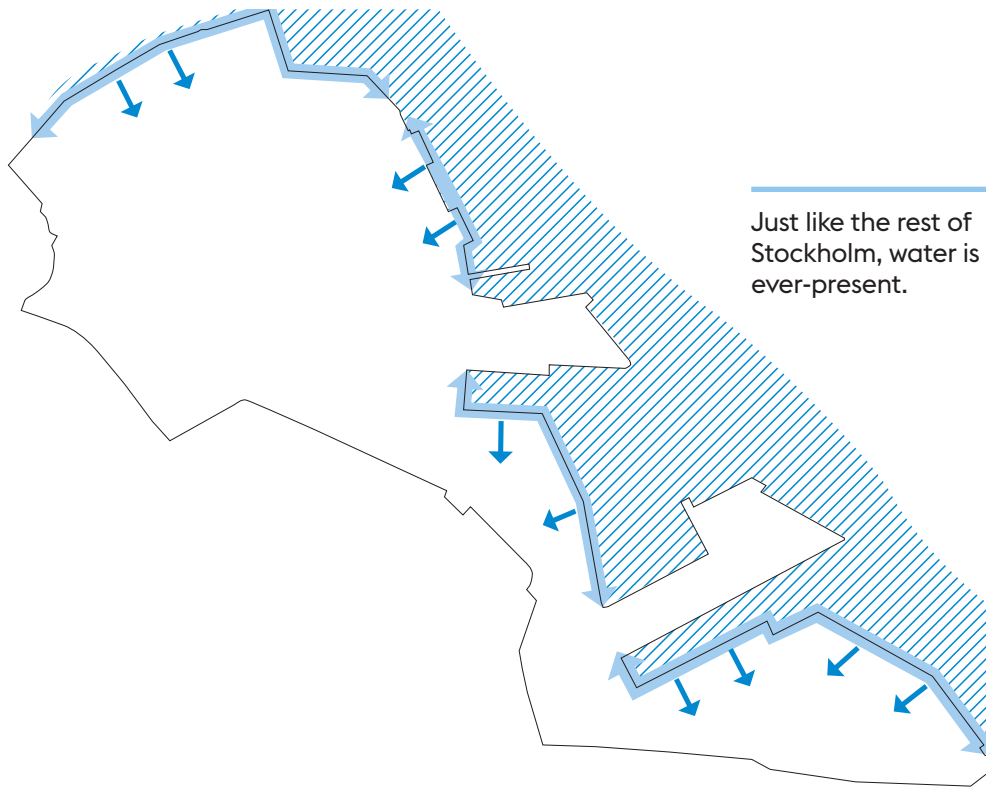


Photo: Stockholm Hamnar / Per-Erik Adamsson

## Approach

- The port's connection to the city is to be enhanced by bringing the urban environment as close as possible to port facilities.
- The conditions for the development of primarily ferry and cruise activities will be guaranteed in the district in the short and long term. At the same time, shipping in the form of efficient ways to transport large volumes of goods. Its need for connecting infrastructure should be considered with regard to barrier effects and urbanity.
- The role of the port as a gateway to the city should be visualised. Create short, clear, and welcoming thoroughfares between the ferry terminals and nearby public transport and the rest of the city.
- Utilise the flows of people generated by the port to enhance the life of the city in general and develop tourism in the area. Create environments and places that invite tourism and provide services adjacent to the ferry terminals.
- The dynamism and variety of scale in the ports should inspire the new buildings. There will be space for high-rise buildings here.
- Port operations and the cultural and industrial heritage are visualised through care being taken in the design and choice of materials for buildings and public spaces. Old port buildings will be given new uses, preferably with a public content.
- Buildings of cultural-historical or identity-creating value, which are preserved and integrated into the new urban environment, can make a positive contribution to the cityscape, and convey a continuity over time that puts a place in a historical context.
- Take advantage of opportunities to use port facilities and sea transport to promote the sustainable development of Stockholm Royal Seaport, so that reliance on truck transport, for example for mass handling and transport of building materials, can be minimised.





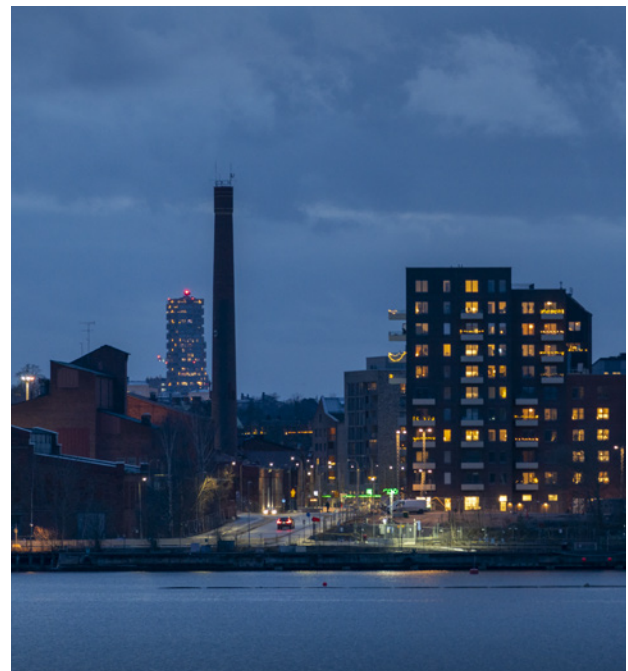
Just like the rest of Stockholm, water is ever-present.

## Water space and waterfront

**Just like the rest of Stockholm,** water is ever-present in Stockholm Royal Seaport. Its proximity to water gives the area its distinctive identity and interesting dynamic. The area includes both Husarviken's small-scale identity and greenery and the large-scale, dynamic environment of the port.

Water is encountered both directly and indirectly. Wharf facilities, docks, bridges, ships, and port facilities line the waters of Lilla Värtan. Behind and through this, the original shape of the archipelago landscape is decipherable in the green heights of Gärdet and Hjorthagen. Similarly, proximity to water is apparent further into the area – sometimes in direct viewsheds and sometimes through ships and port facilities being glimpsed from a distance, as well as the island of Lidingö's green and built-up heights.

It is not just the water's visual qualities that are of value but also its recreational opportunities and ecological links. Stockholm Royal Seaport's waterfront has mainly been used for transport and business activities. With urban development in this area, its other potentials will also be utilized.





CITY

PORT

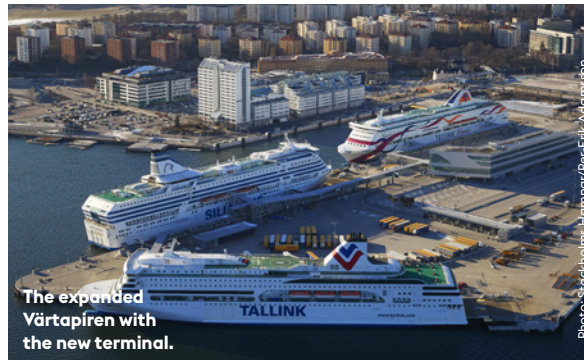
CITY

PORT

CITY

Outline of the waterfront along Lilla Värtan. Intense urban environments will be created along the water together with space for dynamic port operations.

Develop and activate the waterfront by creating public spaces for all, with rich content and considered design.



The expanded Värtapiren with the new terminal.

Photo: Stockholms Hamnar/Per-Erik Admison

## Approach

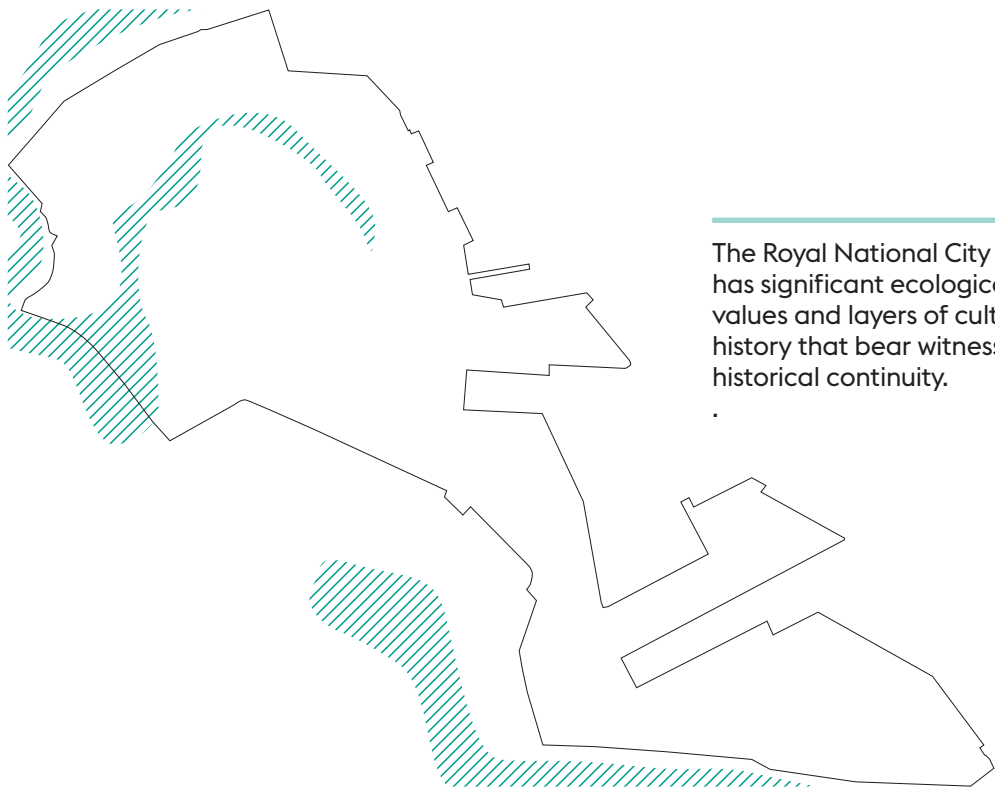
- Increase public access to the water. Create contiguous thoroughfares as far as possible. Sightlines and physical connections are to be used consciously to improve proximity to, and the experience of the water.
- Develop and activate the waterfront by creating public spaces for all, with rich content and considered design.
- The water's ecological values are safeguarded in the design of the district.
- Activities that utilise the water, such as swimming, berths for leisure craft and public transport, are to be encouraged as far as is possible.
- The extensive water spaces mean that higher buildings may be considered in suitable locations, while a lower scale should be used adjacent to Husarviken.
- Where appropriate, the water-line can be redesigned to create increased contact with water and high-quality water space for people and for plant and animal life.



Pedestrian paths along Husarviken.

Photo: Eva Nielsen





The Royal National City Park has significant ecological values and layers of cultural history that bear witness to its historical continuity.

## Royal National City Park

**The Royal National City Park** is one of Stockholm's green oases and one of the region's more popular recreational areas. The Royal National City Park spans more than 10 kilometres, from Ulriksdal and Sörentorp in the north to Djurgården and Fjäderholmarna in the south. The park, which enfolds virtually the whole of Stockholm Royal Seaport, has significant ecological values and layers of cultural heritage that bear witness to its historical continuity. The park has a rich flora and fauna, with more than 800 different kinds of flowering plants, more than 1,200 species of beetle and approximately 100 nesting bird species. The park's many ancient oak trees offer habitats for both insects and birds and constitute one of Northern Europe's largest single oak tree stocks. The oak trees also draw attention to the park's long history of royal ownership. This has enabled the preservation of a unique cultural and historical landscape.

Urban development in Stockholm Royal Seaport means that a new urban frontage will be formed facing the Royal National City Park in several places.





Photo: iStock

The design of Stockholm Royal Seaport will help to enhance the park's values.

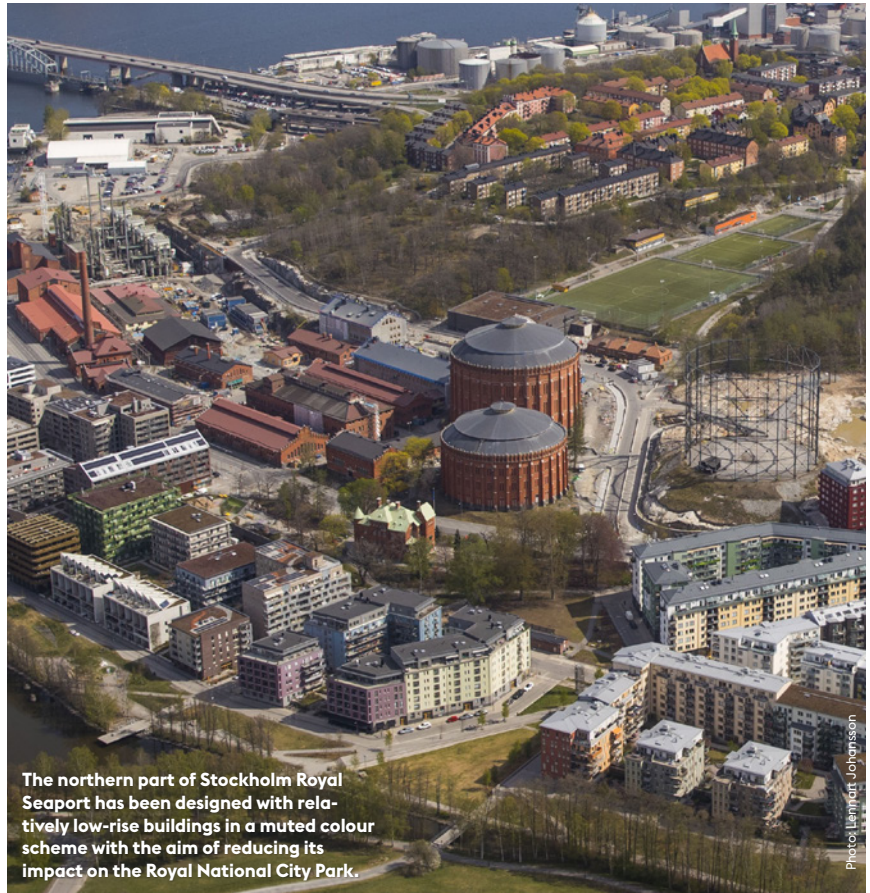
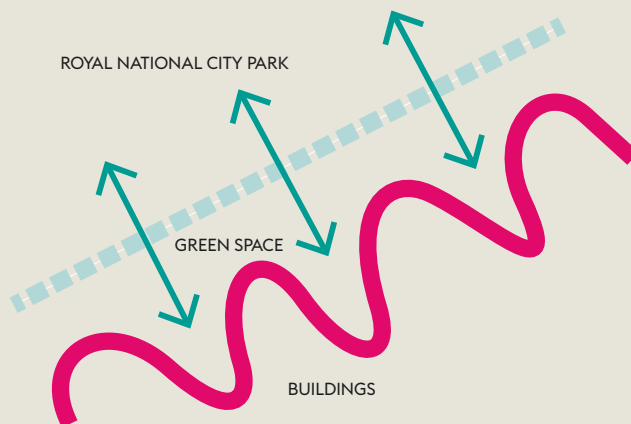


Photo: Lennart Johansson

The northern part of Stockholm Royal Seaport has been designed with relatively low-rise buildings in a muted colour scheme with the aim of reducing its impact on the Royal National City Park.



Connecting green spaces to the Royal National City Park will enhance the park experience. Friction surfaces of the park are to be increased by creating an irregular building boundary so that more people can live directly next to the Royal National City Park.

## Approach

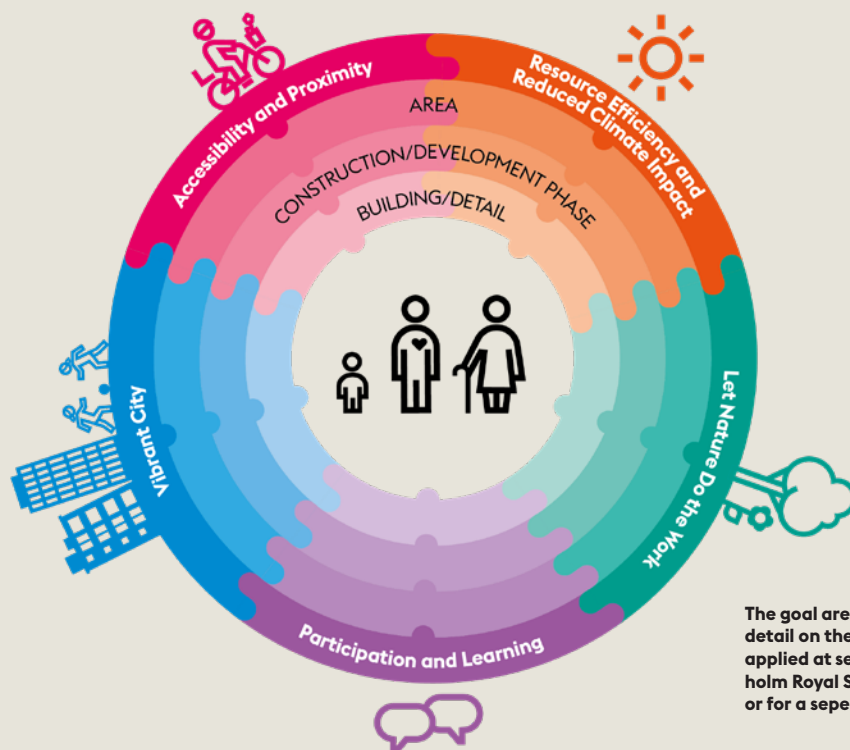
- Allow the Royal National City Park to set the tone for Stockholm Royal Seaport. The park experience can be enhanced by connecting thoroughfares and smaller parks to the Royal National City Park. The idea is that as many people as possible feel that they live next to the park.
- The design of Stockholm Royal Seaport should help to enhance the park's values.
- The character and ecological values of the Royal National City Park can be utilised and inspire the design of parks and public spaces in the urban district.
- The Royal National City Park is a complement to, not a replacement for, park areas in the urban district.
- The meeting between park and buildings should be based on the park's terms – its values, the local environment, and the landscape in general. This may vary depending on which parts of the park are involved.



# Sustainable urban development in Stockholm Royal Seaport







**Based on the vision** and the area's unique qualities, the five goals will ensure that Stockholm Royal Seaport is developed in a sustainable manner. The interconnected goals reflect a holistic view, which is a prerequisite to drive synergies and create added value. This is in line with the City's Approach to Agenda 2030 in which the goals are indivisible and there are requirements to seek synergies and leverage effects. The goals also relate to the City of Stockholm's City Plan. The City Plan adopted in 2018 outlines the main focus areas for urban development over the next 25 years and includes four urban development goals. The goals describe which urban environment and urban structures are sought and support all planning and urban development.

**The City Plan's four urban development goals are:**

- A growing city
- A coherent city
- Attractive public spaces
- A climate-smart and resilient city

Read more in Appendix 3 on page 70 on urban development goals in the City Plan and how they relate to Stockholm Royal Seaport's goals.

Each of the five goals for Stockholm Royal Seaport that are described on the following pages starts with a brief introduction which also outlines how the goal, directly or indirectly, relates to Agenda 2030 and the City Plan. Each goal consists of urban planning principles and sustainability targets. The urban planning principles provide guidance for the design and layout of buildings and urban environments, in which awareness and care are striven for from planning to implementation.

The sustainability targets are measurable and define the goals that govern work on sustainability for the City's departments and companies as well as for developers. Each goal is specified by a number of sub-goals. An overview of all goals, sub-goals, examples of measures, key figures, and division of responsibilities can be found from page 56 onwards.

The goals that are described in more detail on the following pages can be applied on several levels: to Stockholm Royal Seaport as a whole, its various stages or for individual buildings.



# Goal 1

## Vibrant city



A Vibrant city is focused on people. It is open, inclusive, and for people at any stage of life, and a variety of housing forms. Public spaces are the core of urban life and space is made for spontaneous and unexpected encounters between people from different backgrounds and identities.

A Vibrant city has a varied content with functions and activities that keep it populated, safe, and exciting at all times of the day and night and throughout the year, and that also contributes to good opportunities for business. It is an accessible, inclusive, and equal urban area that everyone can use on their own terms that includes women and men in its design. A built-up, green, and connected city that encourages people to walk and cycle and contributes to reduced climate impact and improved wellbeing.

**The goal contributes to the following Agenda 2030 goals:**



**The goal primarily contributes to the fulfilment of the following urban development goals of the City Plan:** a growing city, a coherent city, and an attractive public environment.



Visualisation: Midroc Property Development and White

## Urban planning principles

### → Connect the city

Stockholm Royal Seaport is being planned as a natural extension of the inner city. The Northern Link motorway, Lidingövägen, and Värtabanen currently represent hard barriers that need to be built over at strategically important points. The areas with industrial character or pronounced topographical connections can be experienced as unsafe and inaccessible and thereby constitute barriers. Safe pedestrian and cycle thoroughfares need to be created in larger green spaces. The goal is to achieve a robust urban structure free from physical and social barriers, with buildings, streets, squares, parks, and green thoroughfares connect the city.

### → Intense and lively places

Stockholm Royal Seaport is to accommodate several intensive nodes – high density areas with large flows of people. Well-populated places are perceived as attractive and contribute to increased safety. These may look different in different places. They could be a square by the metro, a place by or in a landmark building, a park, or a quayside promenade. Places with the greatest potential to serve as bearers of a local identity and rich street life should be identified in each sub-area.

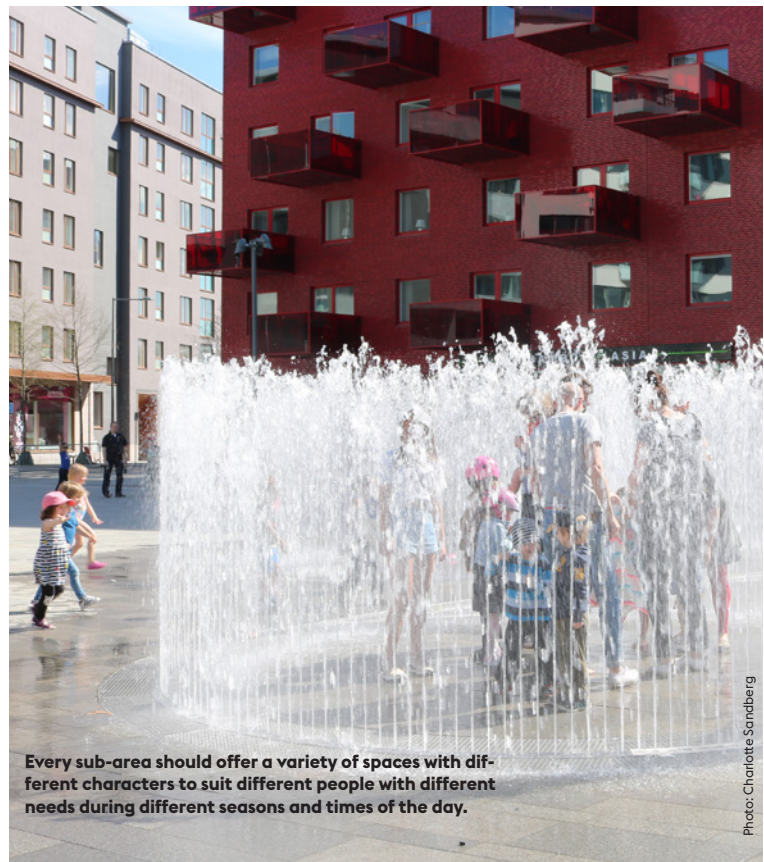
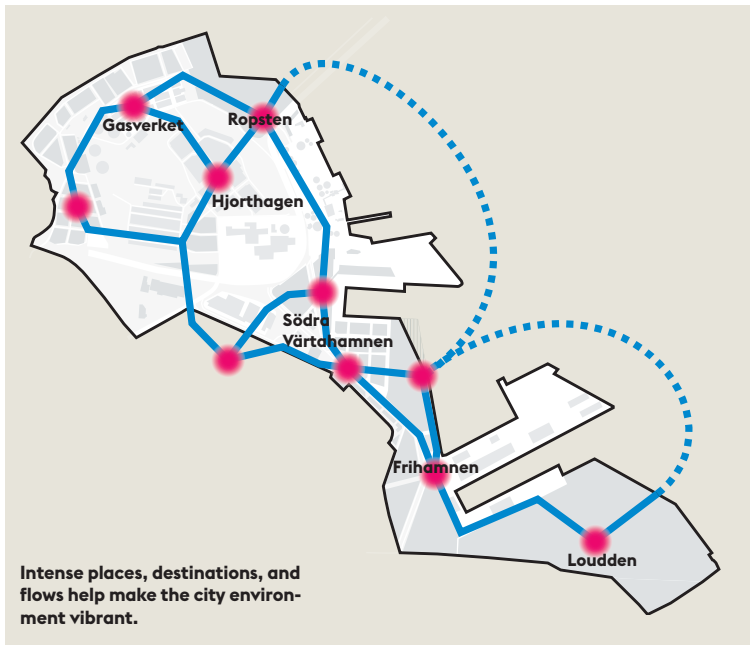
### → Destinations for the whole city

Stockholm Royal Seaport should also be an inclusive and attractive destination for people who do not live and work in the area – for residents of other parts of the city and foreign visitors. This can include permanent and temporary places and activities, for example cultural, sports and recreational pursuits that are unique to Stockholm and can function as unique destination that attract street life. Encouraging interactions between people who would otherwise not meet in their daily lives can lead to a more equal and socially inclusive city. This can in turn lead to increased mental and physical health and improve wellbeing.

### → Public spaces for different needs

In Stockholm Royal Seaport, streets, squares, and parks are to be inclusive and accessible and meet a variety of needs for everyone who lives, works, or visits the area. Each subarea should offer a variety of spaces with different characteristics to suit people with different needs and ages during different seasons of the year and times of the day. Art also has an important role to play in enriching how people experience public spaces. Some places should have a flexible design to enable temporary activities, which can







also be a way of activating places before construction work is complete. Inclusive urban planning that prioritises safe and accessible public space contributes to increased inclusivity and equality in the area as it enables more people to use the area on their own terms.

### → Mixed functions

In Stockholm Royal Seaport, different types of housing, businesses, retail, and services are to be integrated as far as possible. A more even distribution between day and night populations and more people in an area contribute to increased safety. A mix of functions can also be generated by integrating single blocks or smaller subareas with a strong identity into the cohesive urban fabric.

### → Public meets private

In Stockholm Royal Seaport, the urban environment should be designed with a discernible division between areas with varying degrees of public access. As a rule, housing should have courtyards that are private or semi-private. The transition between public and private may look different depending on the nature of the urban environment, its scale and content. In narrow streets spaces or densely populated thoroughfares with high levels of activity, the façade should represent the boundary between public and private. Along streets with a few or no activities on the ground floors, semi-private zones outside entrances can provide space for personal influences that can enrich the street environment and create opportunities for spontaneous interactions.

### → Active and open ground floors

In Stockholm Royal Seaport the street environment should be rich and varied, with a conscious placement of businesses and activities on the ground floors. Regardless of whether the street is dominated by housing or businesses, it should have an open character with densely placed entrances. Entrances should, in general, be orientated towards public streets and spaces. Activities on the ground floors and increased entrance density can improve safety and contribute to a more equal and inclusive urban environment.

### → Careful design

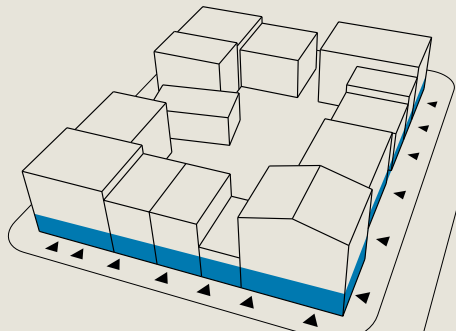
Stockholm Royal Seaport's buildings and places should contribute to a richness of events and impressions through their design and content. Buildings and places should maintain high architectural standards and contribute to a good microclimate. Environments should be based on the human scale, that is, from eye level so that ground floors should have fine detail. A variety of impressions requires care in the design of details such as gates, windows, display windows, balconies, and bay windows. Art should also be a natural aspect of the design of buildings and places.

A walkway with a strong identity links the various parts of Hjorthagen. The walkway pictured is one of the City's art projects.

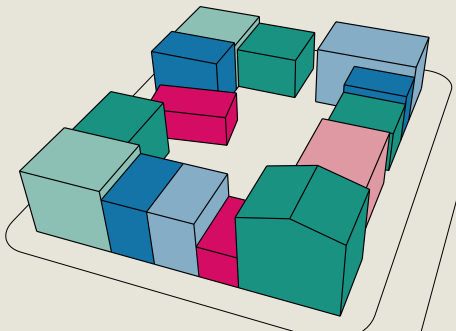
Photo: Lennart Johansson



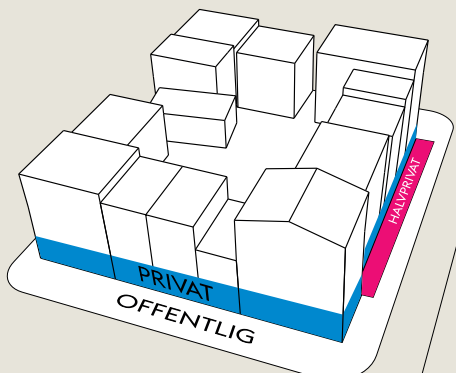




**Active and open ground floors improve safety and provide greater opportunities for different activities and experiences.**



**A mix of uses and variation is desirable in specific buildings as well as blocks and subareas.**



**Conscious design can create clarity and discernability between the private and public.**



## Sustainability targets

Stockholm Royal Seaport is an attractive part of the city that facilitates daily life and is safe, accessible, and inclusive irrespective of age, gender, or time of day.

### 1.1 AN EQUAL CITY

- Even distribution of different forms of tenure
- Choice of housing and commercial spaces that meet the needs of people in all stages of life
- At least 90 per cent of residents are satisfied with living in Stockholm Royal Seaport

### 1.2 WELL-FUNCTIONING EVERYDAY LIFE

- At least 80 per cent of residents are satisfied with access and proximity to public and private services
- At least 80 per cent of residents are satisfied with the outdoor environment and access to places to meet and interact
- At least 20 per cent of all the land in the planning area should consist of public open spaces with social values and it should be at least 15 m<sup>2</sup> green oasis per dwelling

### 1.3 SAFE PLACES DAY AND NIGHT, ALL YEAR

- At least 90 per cent of residents feel safe

Appendix 1 includes detailed descriptions of targets, sub-targets, measures, key figures, and distribution of responsibilities.

#### EXPERIENCES TO DATE

- A rich variation of high-quality architecture. Several buildings and plans have been nominated for different prizes.
- The land allocation competition with norm-creative housing design at the Kolkajen stage has contributed to discussion related to building housing for a greater diversity of people.
- The high ambitions have contributed to Stockholm Royal Seaport becoming an attractive inner city area.
- Residents are satisfied with the area, the variety of services, the public spaces and safety.
- Construction continues in parallel with residents and businesses moving into completed properties. Therefore, the range of services is not fully developed, which is reflected in lower results for satisfaction in terms of access to services, culture, preschools, and schools.

#### CHALLENGES

- Different national interests may affect schedules and opportunities to build in parts of the area.
- Combining housing with port and industrial operations creates challenges with heavy transport and noise from industrial activity.
- The central location drives up housing prices. The housing supply needs to be broadened and opened up to a greater cross-section of society.
- Physical barriers make it more difficult to connect and integrate Stockholm Royal Seaport with the rest of the city.



## Goal 2

### Accessibility and proximity



A dense and accessible city is being created in Stockholm Royal Seaport with close access to services and parks. This contributes to increased equality because women's and men's daily lives and travel patterns differ at a structural level. This also contributes to increased opportunities for good mobility irrespective of age, disability, or other individual situations. To transport more people and more goods more sustainably in a growing city, a transition to higher capacity and more resource-efficient means of transport is needed.

The area's traffic hierarchy prioritises pedestrians and cyclists, followed by public transport and contributes to reduced climate impact. This also contributes to improved health and opportunities to be able to travel at a lower cost and in more equal ways. Creating green spaces for recreation also contributes to greater biodiversity.

**The goal contributes to the following Agenda 2030 goals:**



**The goal primarily contributes to the fulfilment of the following urban development goals of the City Plan:**  
a coherent city, an attractive public environment, and a climate-smart and resilient city.



## Urban planning principles

### → Continuous street network

Stockholm Royal Seaport must be planned with a clear, decipherable, and robust street structure that is easy to navigate. An integrated and continuous street network with clear thoroughfares and hierarchies that build on the existing street network will be created locally and with surrounding districts. In each sub-area, how connections to surrounding districts can be developed in natural ways to strengthen spatial contexts are being reviewed.

### → A backbone of public transport

In Stockholm Royal Seaport, public transport must be frequent, high-capacity, and easily accessible, and constitute the backbone of shaping the structure of the district. The public transport space is to be designed as an integral part of the city to both enhance city life and benefit from the urban environment. Public transport on water is encouraged, which also needs to be reflected in the design of stops along quays.

### → Concentrate

In Stockholm Royal Seaport, important functions such as retail,

services, and schools should be concentrated at public transport nodes or larger public places with good public transport provision. People-intensive businesses in particular should be located at public transport nodes. This facilitates everyday life without a private car because it is for example, easy to travel from work by public transport and in the immediate vicinity, shop for food and fetch children from preschool before going home. A concentration of functions is positive from an equality point of view. A well-functioning daily life makes it easier to combine work with family life. This also contributes to improved health and opportunities to move at lower cost and in a more equal way irrespective of age, disability, or other individual situations.

### → Multifunctional streets at human scale

In Stockholm Royal Seaport, streets should fulfil multiple functions. In addition to transport infrastructure, streets should also function as populated and inclusive public spaces that improve economic and ecological values. Streets should be planned with future changes in modes of transport in mind. The area should be designed to be experienced at a slow pace, with a small-scale



network of streets offering many shortcuts through the area. The prioritisation of street space should be based on human scale and focused on pedestrian and bicycle traffic. This creates a safe and secure traffic environment which is also beneficial in terms of children's rights.

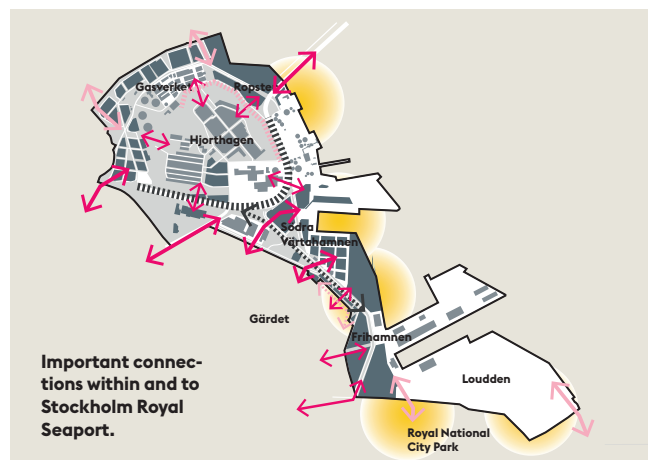
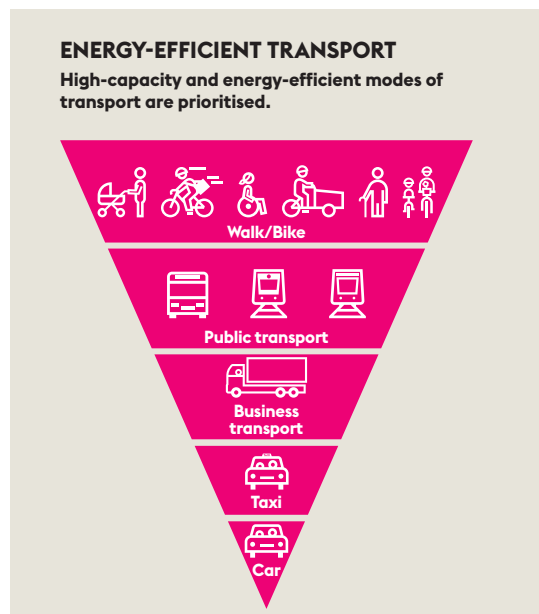
### → Services from the outset

In Stockholm Royal Seaport, functioning services and public transport should be in place before residents and businesses move in. This ensures the establishment of sustainable travel patterns right from the start. The area is to be planned so that each development phase can be provisioned with preschools,

supermarkets, and other everyday services within walking distance at an early stage.

### → Stimulate sustainable modes of transport

In Stockholm Royal Seaport, the placement of car parking spaces should contribute to reduced car traffic in the local road network and stimulate improved access to the area with sustainable modes of transport. It should be easier to walk, cycle, and take public transport rather than private cars. Parking facilities should be available and for residents, visitors, and businesses alike, and designed as so called mobility centres that offer a variety of transport options such as carpooling and bike hire.



## Sustainability targets

Everyday services are within five minutes' walk and it should be possible to do without a car. Streets are designed for flexible use and to enable play, greenery, and city life. Optimising modes of transport in the area improves road safety and liveability.

### EASY TO LIVE WITHOUT A CAR

- Pedestrian thoroughfares and walkways are accessible and safe
- Attractive, safe, and accessible public transport
- Prioritising cycling
- The proportion of travel by car is lower than the average in the inner city

### EFFICIENT BUSINESS TRANSPORT

- Reduce vehicle movements on construction sites by at least 40 per cent
- Efficient service transport
- Efficient goods transport

### SOJOURN STREETS

- At least half of the area's streets are pedestrian zones.
- Streets and squares have multiple functions that support city life and everyday movement

### FIVE MINUTES TO DAILY SERVICES

- Max 200 metres to parks and areas with high recreational and nature values and max 500 metres to district parks
- Max 400 metres to daily services and public transport
- A dominant proportion of active ground floors at street level, (of façade length), at designated points and thoroughfares

Appendix 1 includes detailed descriptions of targets, sub-targets, measures, key figures, and division of responsibilities.

### EXPERIENCES TO DATE

- The traffic hierarchy in Hjorthagen has not been fully implemented due to planning having started long before the area was designated as a sustainability area. Planning streets for flexible use and movement rather than giving over space to stationary vehicles is a new approach.
- When work on sustainability started, parking targets were ambitious, i.e., low numbers for cars and high for bicycles. Parking numbers for the rest of Stockholm are now the same as in Stockholm Royal Seaport.
- Work on construction logistics has been successful.

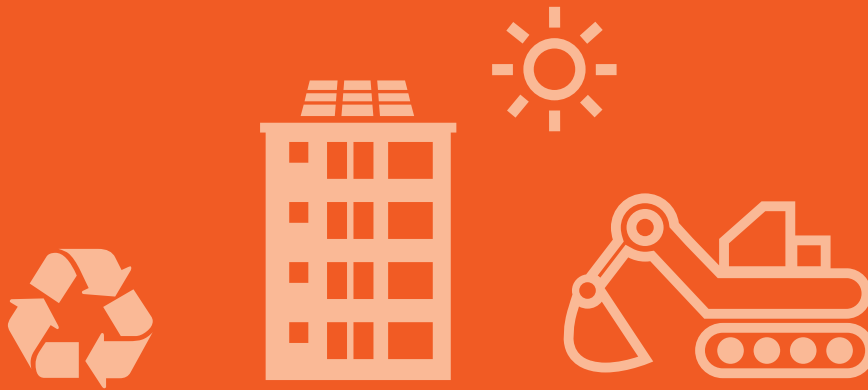
### CHALLENGES

- The number and location of parking spaces are key methods to reduce car use. For example, it is difficult to encourage developers to accept open and shared garage space under properties.
- What systems are needed in the future for deliveries to residents and businesses is difficult to plan for because it is difficult to predict future goods flows and consumption patterns.
- Sustainable transport within Stockholm Royal Seaport largely depends on how the rest of the city develops.
- Barriers around the area including rail lines, watercourses, and height differences make it difficult to connect the area with the rest of the city.
- Uncertainty exists over when public transport provision in the area will be improved and how much capacity it will offer as the City of Stockholm is not wholly responsible for public transport.



# Goal 3

## Resource efficiency and reduced climate impact



Stockholm Royal Seaport is to be a fossil-fuel free area with low resource use and low environmental and climate impact. Resource supply systems are developed by integrating systems that have been planned in silos and closed loop energy, water, and material systems. Land is used efficiently, and the built environment should remain contemporary over time, which means that buildings and facilities need to be designed with high-quality, non-hazardous materials and that chemicals are used responsibly. Good indoor environments ensure healthy indoor air and noise levels in homes and commercial spaces.

New innovative solutions are carefully combined with proven techniques that can indirectly support economic growth. Through closed loop solutions and remediation environmental burdens on surrounding water spaces is reduced and improves preconditions for ecosystem services.

**The goal contributes to the following Agenda 2030 goals:**



**The goal primarily contributes to the fulfilment of the following urban development goals of the City Plan:** a climate-smart and resilient city.



## Urban planning principles

### → Use land efficiently

In Stockholm Royal Seaport, land should be used efficiently. Efficient land use means not only building densely, but also that co-ordination of the city's functions and qualities are optimised. Multi-functional environments based on existing values should be pursued. A well-designed and well-positioned park, remediating and reusing old industrial land, and the utilisation of environments of cultural or historical interest, are also ways of managing available resources.

### → Quality and longevity

Architecture in Stockholm Royal Seaport should be of high quality in terms of design and construction technologies. The ambition is for buildings to be designed for a long life. Non-hazardous materials and healthy materials with low environment impact age in a beautiful way and provide design qualities that make buildings worth preserving and maintaining for a long time. Buildings should offer a comfortable and healthy indoor environment in terms of natural light, noise levels, and air quality. Architecture should also be based on local conditions. It can be timeless to promote existing qualities or more spectacular where deemed relevant.

### → Utilise existing values

In Stockholm Royal Seaport, consideration should be shown towards the substantial cultural, historical values and already invested resources in existing buildings. Existing environments and buildings often have intangible values that should be considered in planning and design of the area. Specific buildings with low qualitative and cultural historical values are taken down to create space for new buildings.

### → Energy planning

In Stockholm Royal Seaport, buildings' volume, placement, and design should minimise energy use. With well-thought out design, heat from the sun can be used or screened off to minimise heating and cooling needs. Sun exposure and form factor are to be studied at an early stage of the development of the city planning structure. This is an aspect that must be weighed into the design of the area and balanced against other interests, such as the scale of urban spaces, consideration for the surroundings, space efficiency and other residential qualities.

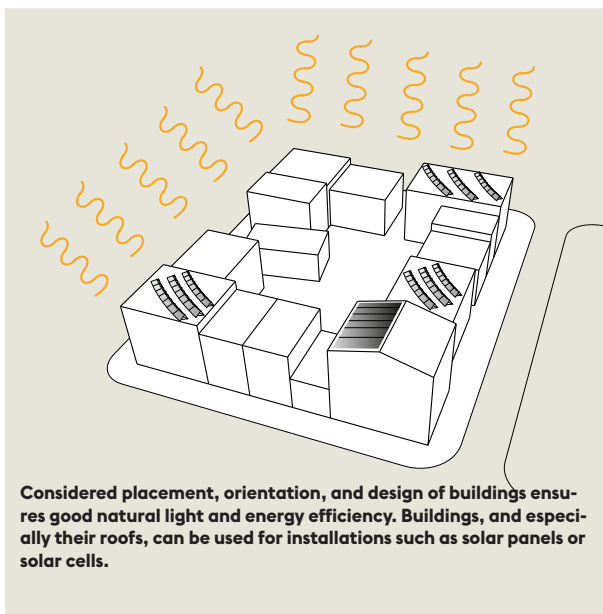


### → System integration

In Stockholm Royal Seaport, resource flows such as energy, water, wastewater, and waste systems should be integrated to achieve synergy effects. Waste heat and biogas from wastewater are important resources of energy, nutrients and water from wastewater are important resources for cultivation and green structures, stormwater is retained in plant beds. Studies for further collaboration between systems are conducted at an early stage.

### → Sites and buildings as producers

In Stockholm Royal Seaport, the potential for renewable energy, for example solar, will be used and new solutions for this encouraged. This may impact the design of buildings and public places. Technical devices, such as solar cells, are to be consciously included as a condition when designing buildings or sites. It must be possible to remove or replace technical solutions with newer technologies without affecting buildings' overall design and character.



## Sustainability targets

### → Closed loops

The transition to a more circular economy necessitates a paradigm shift in how we look at waste – so that waste is instead considered as a resource and material for recovery and reuse.

### 3.1 REDUCE AMOUNTS OF WASTE

- Max 1.5 kilo residual waste per person per week
- Continuous control of the quality of collected material
- No hazardous waste in residual waste
- Increase reuse and sharing of consumer goods
- Reduce construction waste to 20 kg/m<sup>2</sup> BTA
- At least 65 per cent of excavated materials are reused in Stockholm Royal Seaport

### 3.2 RESOURCE EFFICIENT WATER AND WASTEWATER SYSTEMS

- Increase recovery of phosphorus and nitrogen from wastewater
- Increase recovery of heat from wastewater per capita compared to Henriksdal's treatment plant
- Optimise biogas production from wastewater
- Recovery of grey water for irrigation
- Water use is 30 per cent lower than average use in Stockholm

Appendix 1 includes detailed descriptions of targets, sub-targets, measures, key figures, and division of responsibilities.

### EXPERIENCES TO DATE

- Waste management is an important issue for residents. This can be seen, for example, to the extent to which people sort their waste. However, to further increase amounts of material recycling and reuse, there is a need to continue to develop communication with residents and property owners.
- Innovation initiatives have resulted in changes in perceptions and approaches so that waste is seen as a resource. For example, the mobile reuse centre, Pop-up Reuse, has been rolled out throughout the city and a source-separated wastewater system is planned for recovery of energy, plant nutrients and water.
- The Mass Consolidation Centre has contributed to a further increase in the reuse of excavated materials.

### CHALLENGES

- To be able to fully implement closed loop solutions, capacity development, new business models, collaboration and organisational structures are needed.
- Developers' awareness of the need to reduce the amount of construction waste is often low.



## → Energy and climate

Stockholm Royal Seaport's energy system are to be fossil-fuel free and the area has Stockholm's lowest levels of energy consumption. The aim is to work towards being climate positive by 2040 and in so doing, act as a testbed for the development of techniques and knowledge that contributes to the city achieving established climate budget.

### 3.3 FOSSIL-FUEL FREE ENERGY AND TRANSPORT SYSTEMS

- 100 per cent fossil-fuel free commercial and private transport by 2030\*
- Energy use should be lower than 50 kWh/m<sup>2</sup> net energy  $A_{temp}$  and year with an ambition to reducing to 45 kWh/m<sup>2</sup> net energy  $A_{temp}$  and year
- Energy use for facilities to be reduced
- Energy systems to be resource-efficient and fossil-fuel free by 2030
- Purchased electricity should contribute to increased production of renewable energy

### 3.4 LOW CLIMATE IMPACT

- Climate impact from production of buildings and facilities should be limited
- Climate impact from the operation of buildings and facilities is low

Appendix 1 includes detailed descriptions of targets, sub-targets, measures, key figures, and division of responsibilities.

\* The target for fossil-fuel free commercial and private transport does not include traffic to and from the port, the Northern Link motorway, or transport links to the island of Lidingö.



LED lamps outside a Plus-Energy building

Photo: Eric Cing Dinh

### EXPERIENCES TO DATE

- The area's electrical charging infrastructure was ambitious in the planning phase. However, the growth of electric car ownership has increased faster than anticipated.
- The land allocation competition for Plus-Energy buildings has attracted considerable interest and generated experiences that can contribute to large-scale investment in zero-energy buildings.
- Systematic monitoring has shown that developers need to improve building construction to meet demanding energy and climate requirements.
- Energy requirements for Stockholm Royal Seaport apply for all new production on the City's land throughout Stockholm.

### CHALLENGES

- Developing energy systems that increase the proportion of renewable energy and optimised resource use is complex. New techniques and the adaption of organisational structures may be necessary, for example to test seasonal storage of energy. Local waste heat needs to be managed locally to avoid energy losses in the wastewater system.
- A fossil-fuel free transport system needs regional and national policy instruments.
- Because a considerable amount of the climate impact occurs in the construction phase, developers need to put more focus on climate calculations in the design.

## → Buildings and facilities

Stockholm Royal Seaport should be developed without hazardous materials and chemicals should be used responsibly. Stockholm Royal Seaport should be a forerunner in terms of buildings and facilities being sustainable from design, implementation, and management.

### 3.5 GOOD INDOOR ENVIRONMENTS

- More than 90 per cent of residents and work in the area are satisfied with the indoor environment

### 3.6 SUSTAINABLE MATERIAL SELECTION

- No substance that are harmful to human health or the environment are present in buildings or facilities
- 100 per cent of wood and stone products are to be evaluated in terms of ethical responsibility in the supplier chain
- Lifecycle costs are considered in the design and material selection for facilities
- Increase the proportion of reused and recycled construction materials

Appendix 1 includes detailed descriptions of targets, sub-targets, measures, key figures, and division of responsibilities.

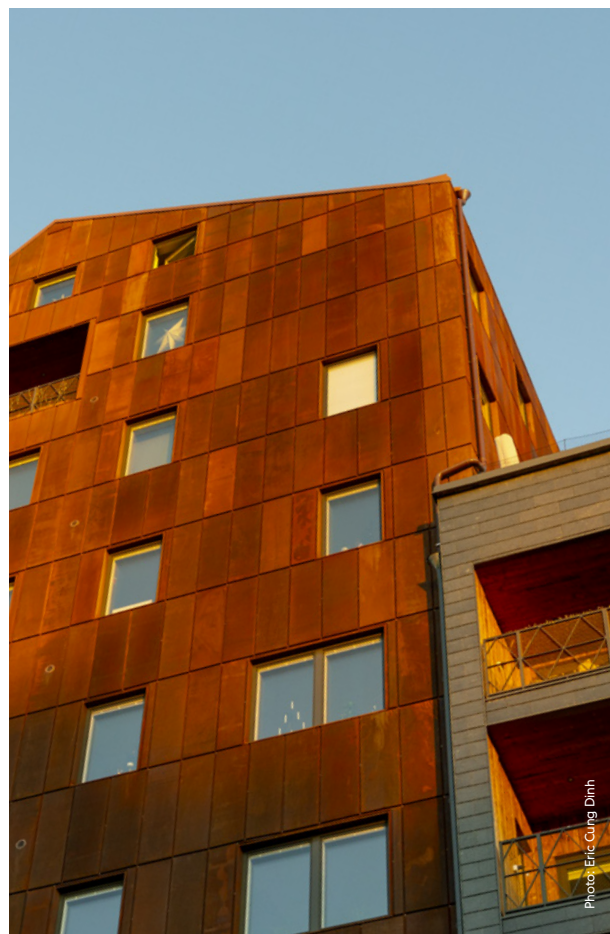


Photo: Eric Cung Dinh

### EXPERIENCES TO DATE

- Developers and their suppliers have a high degree of awareness of the importance of reducing the use of harmful substances in construction materials and facilities and have started working more systematically on this issue. Knowledge of ethical aspects in the supply chain is however lower.
- Residents are broadly satisfied with indoor environments, but it has been hard to achieve the natural light requirement.
- Materials requirements for Stockholm Royal Seaport apply to for all new production on the City's land throughout Stockholm.

### CHALLENGES

- Additional capacity development is needed in energy-efficient buildings and indoor environments.
- Conflict may arise between targets in terms of chemical content of materials and other functional requirements such as extended durability.
- New construction materials and systems represent challenges from the perspective of chemicals and recycling, for example composite materials that are difficult to recycle, materials that contribute to the spread of micro-plastics and hazardous substances.
- Knowledge gaps about ethical aspects and social responsibility in supply chains.



## Goal 4

### Let nature do the work



The water and greenery in Stockholm Royal Seaport plays an important role – socially, economically and ecologically. With careful design, the blue and green structures can serve several functions, contribute to synergies effects and deliver ecosystem services. It provides opportunities for recreation and aesthetic values that contribute to better health and well-being.

It improves water quality and the local climate and reduces the effects of future climate change, at the same time that it increases biodiversity and ecological linkages. As a result, the city will be more resilient to future stresses. Cultivation in the area and on a larger scale can contribute to local food production.

The goal contributes to the following Agenda 2030 goals:



The goal primarily contributes to the fulfilment of the following urban development goals of the City Plan: a coherent city and a climate-smart and resilient city.



Multi-functional green structure in Stockholm Royal Seaport.

Photo: Lennart Johansson

## Urban planning principles

### → Multi-functional blue and green spaces

In Stockholm Royal Seaport, parks and courtyards should be given a thoughtful and efficient design where several different functions can work together on the same surface area. The area's green and blue spaces should serve a variety of recreational needs such as exercise and relaxation, while at the same time they must consciously contribute to strengthening ecological values. Biodiversity creates more resilient and stable vegetation in the area.

### → Greenery for pleasant outdoor environments

In Stockholm Royal Seaport trees and other vegetation should be planned into public spaces to contribute to increased comfort in the urban environment during heatwaves. Vegetation can help to dampen high temperatures by, for example, providing shade. Vegetation can also be used to improve the sound environment in the urban space. This is particularly important in high-density built environments with a high percentage of hardstand in the walls and floors of the surface area in urban space, where access to public parks and open spaces is also limited.

### → Mitigation of stormwater and increased rainfall

In Stockholm Royal Seaport, stormwater should be treated as a resource that provides aesthetical values and serves as irrigation for greenery, at the same time that it is purified and retained. Space for stormwater management should be included as a prerequisite in the design of public spaces and the actual built environment. Local management will vary depending on a site's conditions, for example with regard to the desired character of streets, access to greenery, topography, or soil conditions.

### → Green buildings and courtyards

In Stockholm Royal Seaport, blocks will be used to reinforce green structures in the area. Vegetation on roofs and facades is welcomed and represent a way to satisfy the need for greenery in the area. Where possible, integrated greenery in architecture is to be included as a condition early in the design process. Buildings with green walls and roofs are part of well-functioning green courtyards in residential areas. Courtyards are to be planned with sufficient lighting and planting depth that enables trees and other high quality and robust vegetation. Courtyards in schools and preschools should achieve these qualities.

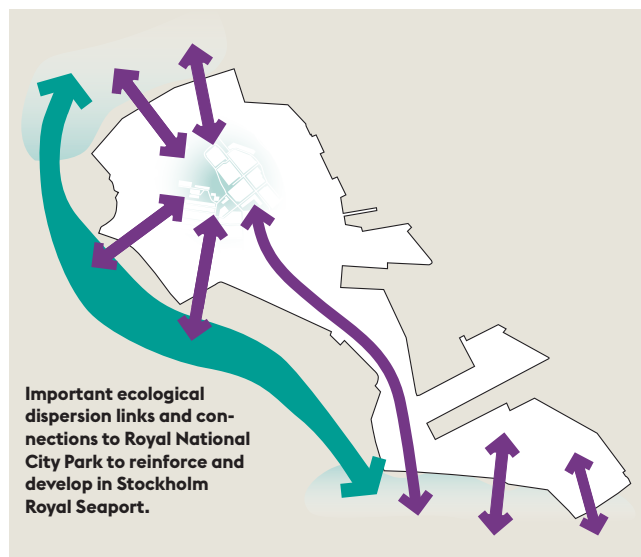


### → Robust ecological connectivity

With appropriate placement, scale, and content, parks and other public places in Stockholm Royal Seaport should contribute to reinforce the dispersion links for oak-dependent species, among others, thereby safeguarding well-functioning ecosystems in the surrounding natural environment in the Royal National City Park. It is also important to protect and strengthen the ecological connections that exist in the areas water environments, especially seafront areas. Seafront areas in particular are designed to take account of plant and animal life under water.

### → Cultivate

In Stockholm Royal Seaport, it should be possible to garden as a way to improve health and achieve social and aesthetic qualities. This can be arranged in public spaces that are more or less permanent, or in private and shared gardening areas, such as, roof terraces, patios, decks, and balconies. Studies are to be carried out at an early stage to investigate alternatives for cultivation on a larger scale, for example in existing caverns.



## Sustainability targets

In Stockholm Royal Seaport urban greenery and stormwater are to be used to supporting and active components to strengthen biodiversity, replace technical systems and contribute to well-being and recreation.

### 4.1 UTILISE ECOSYSTEM SERVICES

- Biodiversity and ecological connections are strengthened over time
- Green and blue structures purify and retain precipitation
- Green and blue structures contribute to climate regulation during heatwaves
- Effects of sustained precipitation are minimised
- Conditions for productive and cultural ecosystem services are created
- At least 90 per cent of residents are satisfied with the recreational and social values of blue- and green structures

Appendix 1 includes detailed descriptions of targets, sub-targets, measures, key figures, and division of responsibilities.

### EXPERIENCES TO DATE

- Residents perceive the multi-functional green structures in public spaces as being attractive. Plantbeds with biochar have created unique spaces for vegetation that create well-being and serve to dissipate changes in climate. In combination with innovative solutions on development sites, this strengthens biological dispersion links, for example, between oak trees.
- A proactive use of green structures for stormwater management has contributed to increased awareness among urban development actors of the importance of integrating green and blue structures in the city.
- The Green Space Index for development sites offers varied, multi-functional and attractive courtyards and green roofs and is applied in land allocation of the City's land throughout Stockholm and other municipalities.
- To date, green roofs are primarily sedum with a thin layer of soil. The Green Space Index needs to be further developed to ensure greater use of roofs.
- Stockholm Royal Seaport was awarded the Swedish Architect's Landscaping Prize in 2019.

### CHALLENGES

- The effects of functions in green and blue structures are based on theoretical calculations. It is necessary to review functions to a greater extent to validate the value of ecosystem services. The green structure has been shown to work well during both dry periods and heavy rains.
- It is also necessary to improve knowledge and routines to ensure the long-term management and operation of green and blue structures in terms of function.
- Technical and legal conditions for locally-adapted stormwater solutions on public spaces requires internal co-ordination within the City of Stockholm and between developers.
- Rising sea levels due to climate change requires innovative solutions for existing buildings in the area.



# Goal 5

## Participation and learning



An inclusive process is based on consultation and participation at all phases of urban development. It is important that all stakeholders participate in different ways and that new job opportunities are created. By using different methods to increase consultation and dialogue, more people – irrespective of age and background – can be included in the process.

Communication is the key to creating interest and participation. Research, innovation, knowledge development, and experience feedback are important conditions for identifying sustainable solutions for complex challenges and can contribute to synergy effects in all goals that relevant to developing sustainable cities.

**The goal contributes to the following Agenda 2030 goals:**



**The goal primarily contributes to the fulfilment of the following urban development goals of the City Plan:** implementation of the City Plan.



Photo: Eric Cung Dinh

## Urban planning principles

### → It should be easy to do the right thing

In Stockholm Royal Seaport, technical solutions are to be designed thoughtfully so that they are user-friendly and intuitive, which can help to increase awareness. Making it easy to do the right thing means, for example, making it easy to sort waste where waste is discarded, or making it easy to cycle or take the bus.

### → Civil dialogue and influence

In Stockholm Royal Seaport, dialogue with residents and other stakeholders should be active. Development of the area should be embedded locally among those who live and work in the area to contribute valuable knowledge to the planning process. Focus needs to be on the whole concept and early planning stages and should complement traditional consultation on programmes and detailed development plans. To also reach under-represented groups and to incorporate children's perspectives in particular, dialogues can be conducted in a variety of channels; for example workshops, focus groups, digital media, city walks, or temporary events.

### → Provide space for meetings and initiatives

Those who live and work in Stockholm Royal Seaport should be given opportunities to engage and work together. There are to be places, physical and virtual, for meetings, temporary activities, and initiatives. Structures in Stockholm Royal Seaport should facilitate personal involvement, for example through good access to smaller commercial spaces or zones set aside for cultivation.

### → Visible and invisible sustainability effort

Stockholm Royal Seaport's sustainability profile should be reflected in both design and functions in the area. In some instances, there may be reasons to demonstrate specific technical solutions, such as for learning or marketing purposes. The extent to which environmental technologies should be visualised and highlighted should be assessed on the basis of each project's specific circumstances. The principle should be that where it is important to visualise a function to assist the everyday user's understanding, design should be durable and integrated. This may be measurement and visualisation of resource use or waste management.



## → Dare to try something new

In Stockholm Royal Seaport, collaboration between the City, civil society, academia, and the private sector will create conditions for people and businesses to develop. Promising examples are disseminated, contributing to a Stockholm that is diverse, dynamic, and innovative. There should be room to test new concepts, ideas, and tools. To benefit best from the experiences gained, it is important that any testing is done in a way

that permits monitoring and experience feedback. Parts of what is constructed will use well-proven and sustainable technologies, while other parts will be executed in the form of well-defined development projects. Land allocation competitions or a number of selected places may be one way of identifying and testing new solutions.



## Sustainability targets

The sustainability work should be conducted on a transparent and accessible basis that triggers curiosity and involvement. Experience exchange and learning about the surrounding area builds participation and can contribute to other innovation projects.

### 5.1 STIMULATE LONG-TERM PARTICIPATION

- Develop knowledge about Stockholm Royal Seaport's sustainability profiling among property owners and other managing organisations.
- Ensure at least 90 per cent of residents have knowledge of and understanding for system solutions in Stockholm Royal Seaport
- Increase residents' knowledge about Stockholm Royal Seaport's sustainability profiling and participation for sustainable development

### 5.2 SUSTAINABLE BUSINESSES

- Increase the sharing of commercial spaces
- Ensure the City's and private sector companies in Stockholm Royal Seaport contribute to the area's sustainability profiling
- Stimulate initiatives that employ people outside the labour market

### 5.3 INNOVATION AND DEVELOPMENT

- Develop knowledge and experience through collaboration and innovation in which Stockholm Royal Seaport is a testbed
- Develop the capacities of actors that participate in the development of Stockholm Royal Seaport
- Share experiences and learnings
- The digital infrastructure creates opportunities for new tools and services

Appendix I includes detailed descriptions of targets, sub-targets, measures, key figures, and division of responsibilities.

#### EXPERIENCES TO DATE

- Residents feel that built-in solutions contribute to making it easy to do the right thing.
- Residents show considerable interest in knowing more about the development of Stockholm Royal Seaport.
- Considerable interest exists nationally and internationally to learn more about Stockholm Royal Seaport.
- Stockholm Royal Seaport being a testbed creates conditions for innovation projects that are important for achieving targets as well as establishing common visions and increased collaboration.

#### CHALLENGES

- Due to the amount of time between planning to occupancy, it is challenging to establish long-term participation of residents in development initiatives.
- It has been difficult to encourage new groups to engage in citizen dialogues alongside those that already exist.
- Ensuring the long-term and sustainable management of the area.
- Capacity development for the long-term management and operation of the area.



# Process, steering documents, and organisation

In 2010, Stockholm City Council adopted the first sustainability programme, the Overarching Environmental and Sustainability Programme for Stockholm Royal Seaport, which designates the area as a testbed. Stockholm Royal Seaport is a collaboration project with shared learning that drives innovation. This is achieved by applying sustainability targets early in the planning stage and cross-organisational collaboration.

Monitoring and review of the targets has contributed to unique knowledge about new technical solutions and operational approaches. To reflect the continuous knowledge development that occurs and constitutes a complement to plans and planning programme for parts of or the whole area, the programme – i.e., this document – is reviewed regularly. Applying the programme at different levels and at different stages, ensures that urban planning qualities and high sustainability targets characterise the entire project – as a whole and in detail.

Updates and revisions of the City of Stockholm's Vision 2040, budgeting, the Environmental Programme, investment strategy, and other steering documents have also been included. This is the third overview of the Programme for Sustainable Urban Development and has been conducted following a review of the Environmental Programme and the preparation of the Climate Management Plan. This ensures that the ambitions in Stockholm Royal Seaport are higher than in these steering documents. In this way, Stockholm Royal Seaport can act as leverage by testing and developing knowledge for future goal formulations.

# Overarching level

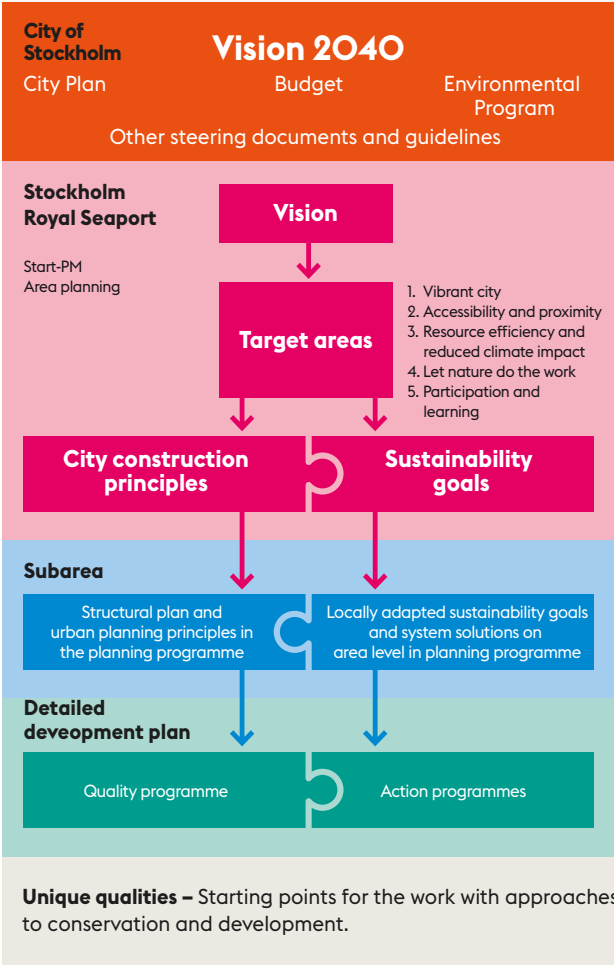
## → Project area

The unique qualities and conditions of the area provide a direction for the urban planning principles and sustainability targets for the urban development of the area and form the basis for overarching conclusions.

## → Subareas

For each sub-area, a planning program is developed as an in-depth study of the overarching programme for the urban development area, where conditions and planning orientation are presented. The urban planning principles are applied to design the

## STOCKHOLM ROYAL SEAPORT STEERING DOCUMENTS





planning program and the structural plan and are then clarified in special quality programs in the detailed development planning phase. The in-depth programme also describes how the sustainability targets can be realized. Any goal conflicts are then dealt with, but this can also happen in the detailed development plan.

→ **Phases or detailed development planning**

Detailed development plans are developed for each development phase in which future land use is regulated in legal terms. Detailed development plans produce quality programmes, which are based on the site’s unique qualities and the overarching urban planning principles. Based on the overarching sustainability targets, action programmes are developed with specified sustainability requirements for developers’ projects on development sites and in the design and procurement of contracts for public land. Action programmes with sustainability targets form the basis for land allocation agreements and subsequent processes to ensure quality. In conjunction with the adoption of a detailed development plan, the City draws up an agreement on land use to which an action programme is attached. In addition to what is regulated in the detailed development plan, the agreement is one of the City’s most important tools for regulating the City’s requirements in relation to developers. When a detailed development plan gains legal force, it forms the basis for building permits etc.

**Buildings and facilities**

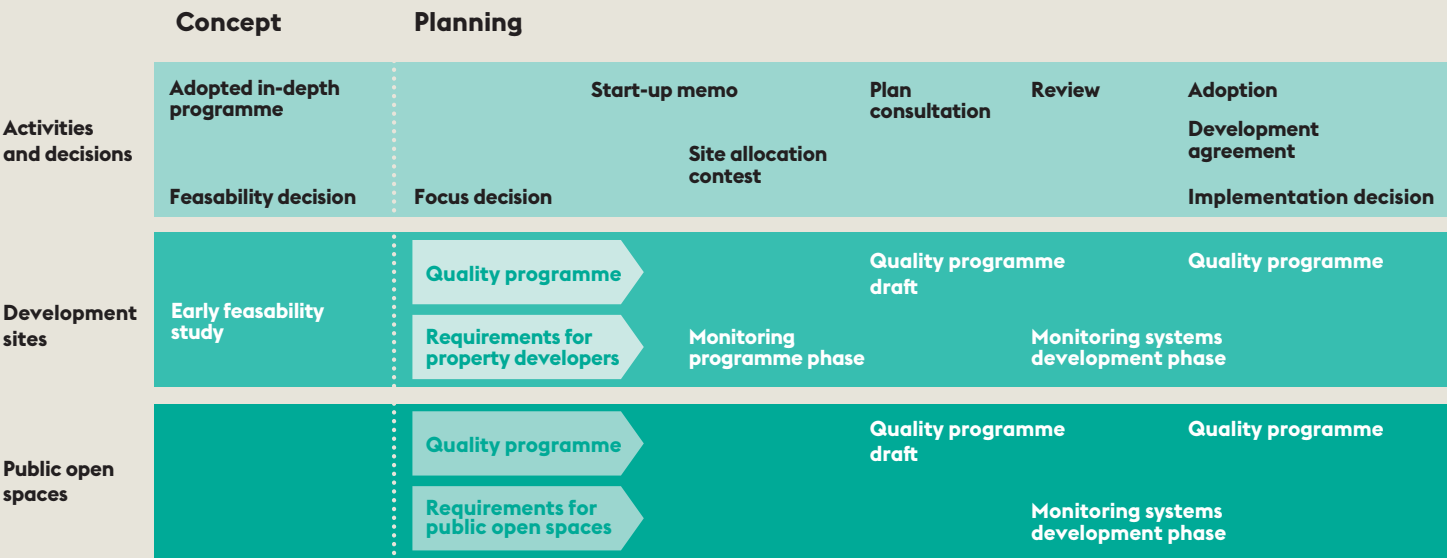
In building permit applications, the urban planning principles help to ensure a quality implementation. How each property developer intends to meet the sustainability requirements is monitored continuously by the Stockholm Development Administration until the building has been in place for two years. Monitoring occurs through frequent contact with the property developers and a review of their submitted results. This process contributes to an increase in skill sets among developers and the City of Stockholm. Continuous monitoring is also conducting into the City’s own projects on public open spaces.

**Organisation and collaboration**

The development of Stockholm Royal Seaport is a broad collaboration between the City’s administrations and companies. The Urban Development Project is led by the City Development Committee and staffed by the City Development Administration, the City Planning Administration, the Transport Department and the Environment and Health Department. Other bodies that work actively on the project include the City District Department of Östermalm, Stockholm Vatten och Avfall AB and other management bodies, and Ports of Stockholm.

On issues where the City is unable to act, but that are important for the project, work is conducted to support regional and national collaboration. An example of this is the construction of housing in the port environment.

**How urban planning principles and sustainability goals are implemented in the urban planning process**



Responsibilities

The City Planning Administration prepares programmes and zoning plans. This work determines the location and design of buildings, parks, infrastructure and more. The City Planning Administration is also responsible for building permits, ensuring that the urban planning principles are fulfilled in area planning and detailed development plans, and execute quality programmes.

The City Development Administration is responsible for implementing detailed development plans and developing public open spaces, streets, and parks, and is responsible for budgeting. The City Development Administration enters into agreements with developers on site allocation and development. It also prepares requirements based on sustainability targets in the area programmes and prepares detailed development plans that include sustainability requirements for block land and public open space. The process may look different for different parts of the project.

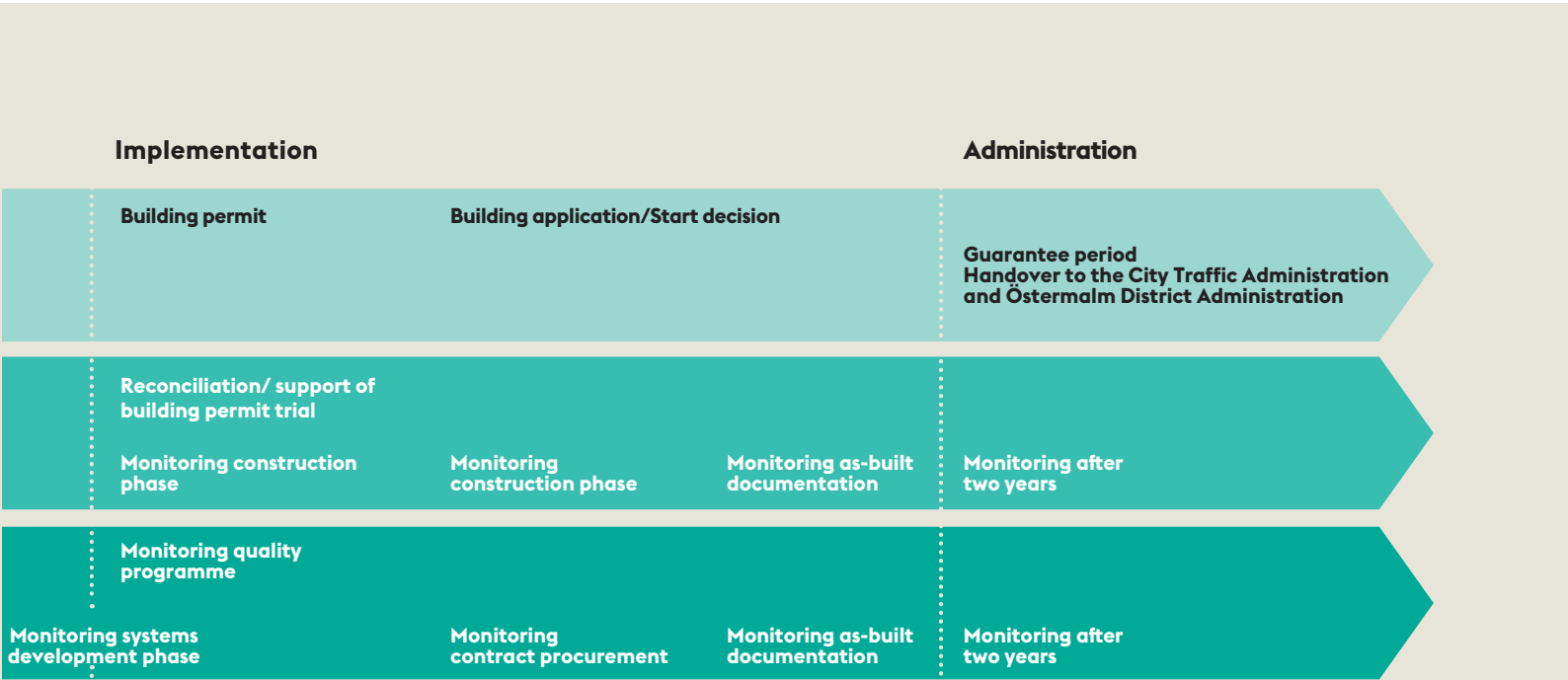
One example of the planning and development process and how work on sustainability can be included in the project is illustrated below. At which point developers enter the process has looked different for different phases of the project. In the Kolka-jen phase, developers were assigned land after the structure of plan had been prepared.

Monitoring and feedback

To achieve the programme’s vision and targets, systematic monitoring, continuous evaluation, and analysis of how targets are achieved is necessary. Dialogue and monitoring is transferred and documented experiences relating to successes of the project in line with planning, implementation, operation, and management. The regularity of monitoring and contact with developers and those who have taken on management roles, sends direct signals on how well sustainability targets works in practice. Feed-back occurs regularly and is valuable for how specifications could be developed moving forward.

The City Development Administration reports results annually, for developers and for the City’s work on planning and implementation. The sustainability report is aimed at disseminating these achievements and experiences within the City and other external stakeholders.

Other forums are organised, educational outreach and dialogue meetings with the aim to promote experience exchange with and between the City, civil society, developers, infrastructure owners, consultants, entrepreneurs, suppliers, and academia.





# Appendix 1

## Sustainability targets

### Vibrant city

#### TARGET 1.1. AN EQUAL CITY

Sub-target	Example measure	Key figures (method)	Principal/follow-up responsibility
1.1.1. At least 90% of residents are satisfied living in Stockholm Royal Sea-port.	Social value-creation analysis. Child impact assessment. Gender equality analyzes in service statements prior to land allocation/policy decisions/implementation decisions. Safety measurement.	Satisfaction by gender and age (resident survey).	The City Planning Committee and the City Development Committee, in collaboration with the City's housing companies, have the principal responsibility for the goal.  The City Development Committee, supported by the City Planning Committee, is responsible for follow-up.
1.1.2. Even distribution of different types of lease	Land allocation strategy.	Proportion of apartments and tenancies.	
1.1.3. Range of housing and premises that meets people's different needs at all stages of life.	Knowledge development of norm-creative housing design. Land allocation strategy. Pilot project to develop affordable housing concepts.	Proportion of one- two-, three, four, five-room dwellings.	

#### TARGET 1.2. ACTIVE DAILY LIFE

Sub-target	Example measure	Key figures (method)	Principal/follow-up responsibility
1.2.1. At least 80% of residents are satisfied with access and proximity to public and private amenities.	Measures reviewed in social value-creation analysis. Child impact assessment.	Satisfaction, access to public and private amenities by gender and age (resident survey).	All committees and boards responsible.  The City Development Committee, supported by the City Planning Committee, is responsible for follow-up.  The City Planning Committee, supported by the City Development Committee, has principal responsibility for this goal.  The City Development Committee, supported by the City Planning Committee, is responsible for follow-up.
1.2.2. At least 80% of residents are satisfied with the outdoor environment and access to places for meeting and activities.	Social value-creation analysis. Child impact assessment. Studies of public open spaces with social values and free surface analyses.	Satisfaction, outdoor environment and access to places for meeting and activities by gender and age (resident survey).	
1.2.3. At least 20% of total land area in the project area to comprise of public open spaces with social values and should be at least 15 m² green oasis per resident.	Social value-creation analysis. Child impact assessment. Studies of public open spaces with social values and free surface analyses.	Proportion of public open spaces with social values, %. Public open spaces with social values per dwelling, m².	

#### TARGET 1.3. SAFE SPACES – DAY AND NIGHT, YEAR-ROUND

Sub-target	Example measure	Key figures (method)	Principal/follow-up responsibility
1.3.1. At least 90% of residents feel safe.	Social value-creation analysis. Child impact assessment. Safety analysis.	Perceived safety by gender and age (resident survey). Mixed use.	The City District Council of Östermalm, in collaboration with all councils and boards, has principal responsibility for this goal.  The City Development Committee is responsible for follow-up.

# Accessibility and proximity

## TARGET 2.1. PRIORITISING WALKING, CYCLING, AND PUBLIC TRANSPORT

Sub-target	Example measure	Key figures (possible method)	Principal/follow-up responsibility
2.1.1. Pedestrian walkways and paths accessible and safe.	Pedestrian plan. Mobility Index	Proportion of walking compared to the average in the rest of the inner city (travel habits survey). Perceived attractiveness and safety by age and gender (resident survey).	The City Planning Committee and the City Development Committee, in collaboration with the Transport Committee, have principal responsibility for this goal. The City Development Committee is responsible for follow-up.
2.1.2. Attractive, safe and accessible public transport.	Public transport plan	Proportion of public transport use (travel habits survey). Travel time ratio for public transport and private cars between selected points. Perceived attractiveness of public transport by age and gender (resident survey).	
2.1.3. Easy to cycle.	Cycling plan. Mobility Index	Proportion of cycle use compared to the average in the rest of the inner city (travel habits survey). Perceived attractiveness and safety by age and gender (resident survey).	The City Planning Committee and the City Development Committee, in collaboration with all committees and boards, have principal responsibility for this goal. The City Development Committee is responsible for follow-up.
2.1.4. Reduce private car use compared to inner city	Mobility Index. Limited parking access for offices and retail. Prioritise proximity to sustainable modes of transport.	Proportion of car use compared to the average in the rest of the inner city (travel habits survey). Vehicle km/capita (by car).	

## TARGET 2.2. EFFICIENT, SUSTAINABLE FREIGHT TRANSPORT

Sub-target	Example measure	Key figures (possible method)	Principal/follow-up responsibility
2.2.1. Reduce vehicle traffic in the construction area by at least 40% of all registered transports to the Construction Consolidation Centre.	Joint loading at the Construction Consolidation Centre.	Joint loading quota in construction logistics, %.	The Transport Committee and the City Development Committee have principal responsibility for this goal. The City Development Committee is responsible for follow-up. *Stockholm Vatten och Avfall has principal responsibility for measures.
2.2.2. Efficient service transports.	Study: logistics co-ordination and logistics areas. Study: joint waste management from environmental areas*		
2.2.3. Efficient goods transports.	Study property design, logistics, co-ordination, and logistics areas. Pilot project.		

## TARGET 2.3. STREET AS A MEETING PLACE

Sub-target	Example measure	Key figures (possible method)	Principal/follow-up responsibility
2.3.1. At least half the streets in the area to be traffic-free zones.	Street design and street furniture that encourages low speeds.	Traffic-free zones as a proportion of street metres.	The City Planning Committee and the City Development Committee, in collaboration with the Transport Committee, have principal responsibility for this goal. The City Development Committee is responsible for follow-up.
2.3.2. Streets and squares have multiple functions that support city life and daily mobility.	Draft list of examples. Study: how nudging could be used to improve opportunities for daily mobility.	Perceived attractiveness by age and gender (resident survey). Number of city amenities.	



TARGET 2.4. FIVE MINUTES TO BASIC AMENITIES

Sub-target	Example measure	Key figures (possible method)	Principal/follow-up responsibility
2.4.1. Maximum 200 metres to parks and areas of high recreational and nature values and a maximum of 500 metres to district parks.	Programme plans. Studies of public open spaces with social values and free surface analyses	Proportion of dwellings that are maximum 200 metres from parks and a maximum of 500 metres to district parks, respectively.	The City Planning Committee and the City Development Committee, in collaboration with the Transport Committee, have principal responsibility for this goal. The City Development Committee is responsible for follow-up.
2.4.2. Maximum 400 metres to basic amenities and public transport.	Programme plans.	Proportion of dwellings that are maximum 400 metres from basic amenities and public transport. Satisfaction with public transport, % (resident survey).	
2.4.3. Dominant proportion of active ground floors (of facade length) at street level at designated target points and walkways.	Programme and detailed development plans.	Proportion of active ground floors at street level.	

Resource efficiency and reduced climate impact

TARGET 3.1. REDUCE AMOUNTS OF WASTE

Sub-target	Example measure	Key figures (possible method)	Principal/follow-up responsibility
3.1.1. Maximum 1.5kg residual waste per person and week	Communication strategy.	kg residual waste/person/week. Systems for efficient sorting of waste, pick analysis, sample checks.	The City Development Committee and Stockholm Vatten och Avfall have principal responsibility for this goal. The City Development Committee, supported by Stockholm Vatten och Avfall, is responsible for follow-up.
3.1.2. Continuous control of the quality of collected materials.	Communication strategy.	Purity level of newspapers and plastic packaging, %. Systems for efficient sorting of waste, pick analysis, sample checks.	
3.1.3. No hazardous waste in residual waste.	Communication strategy.	Proportion of hazardous waste in residual waste, % (pick analysis).	
3.1.4. Increase recycling and sharing of consumer goods.	Physical and digital places for reuse and sharing. Mobile reuse centre, Pop-up Reuse.	Tonnes of material collected by Pop-up Reuse every year. Proportion of dwellings that reuse, % (resident survey).	
3.1.5. Reduce the amount of construction waste to 20 kg/m² GFA.	Knowledge development.	Kg construction waste/m² GFA.	The City Development Committee, in collaboration with the City's housing companies, has primary responsibility for this goal. The City Development Committee is responsible for follow-up.
3.1.6. At least 65% of excavated materials reused in Stockholm Royal Seaport.	Excavated materials plan. Mass Consolidation Centre	Proportion of reused excavated materials, %	The City Development Committee has primary responsibility for this goal.

**TARGET 3.2. RESOURCE-EFFICIENT WATER AND EFFLUENTS**

Sub-target	Example measure	Key figures (possible method)	Principal/follow-up responsibility
3.2.1. Increase recycling of phosphorus and nitrogen from waste water.	Development and testning of source-separated waste water system.		<p>The City Development Committee and Stockholm Vatten och Avfall, in collaboration with the City's housing companies, have principal responsibility for this goal.</p> <p>The City Development Committee and Stockholm Vatten och Avfall are responsible for follow-up.</p>
3.2.2. Increase recycling of waste heat from waste water per capita compared with Henriksdal's treatment plant.	Development and testning of source-separated waste water system.		
3.2.3. Optimise biogas production from waste water.	Development and testning of source-separated waste water system. Organic waste grinder for tanks.		
3.2.4. Purified greywater made available for irrigation.	Development and testning of source-separated waste water system.		
3.2.5. Water use is 30% lower than average use in Stockholm.	Water use billing.	Litres of water/person/day	

**TARGET 3.3. FOSSIL-FUEL FREE ENERGY AND TRANSPORT SYSTEM**

Sub-target	Example measure	Key figures (possible method)	Principal/follow-up responsibility
3.3.1. 100% fossil-fuel free commercial and private transport by 2030.	Environmental zone study. Study fossil-fuel free construction sites. Study follow-up method for commercial transport. Expanded charging infrastructure for electric vehicles.	Proportion of electric/fossil-fuel free cars for residents in Stockholm Royal Seaport, % (registrered vehicles).	<p>The City Development Committee and the Transport Committee, in collaboration with the Environment and Health Committee, have principal responsibility for this goal.</p> <p>The City Development Committee, supported by the Transport Committee, is responsible for follow-up.</p>
3.3.2. Energy consumption must be less than 50kWh/m <sup>2</sup> net energy A <sub>temp</sub> and year with a view to 45kWh/m <sup>2</sup> net energy A <sub>temp</sub> and year.	Knowledge development. Land allocation competitions. Previous studies (e.g. solar, wind, building volume).	Proportion of buildings that meet the energy requirement, %.	<p>The City Development Committee, in collaboration with all committees and boards, has principal responsibility for this goal.</p> <p>The City Development Committee, supported by the Environment and Health Committee, is responsible for follow-up.</p>
3.3.3. Reduced energy use in facilities.	LED for street and park lighting. Vacuum waste optimisation.	Energy use lighting kWh/km. Energy use vacuum waste kWh/kg waste and fraction.	<p>The City Development Committee, the Transport Committee (street lighting), the City District Council of Östermalm (park lighting), and Stockholm Vatten och Avfall (vacuum waste), have principal responsibility for this goal.</p> <p>The City Development Committee, with the support of the Traffic Committee and Stockholm Vatten och Avfall, is responsible for follow-up.</p>
3.3.4. Energy system to be resource efficient and fossil-fuel free by 2030.	Resource flow analysis. Kolkajen heating system study. Louden energy system study.	Supplied energy/year/energy type MWh	The City Development Committee, in collaboration with the Environment and Health Committee and the City's housing companies, has principal responsibility for this goal.
3.3.5. Supplied electricity to contribute to increased production of renewable energy.	Resource flow analysis. Investigate options for regional large-scale wind production.	Proportion of new-produced renewable energy/energy type.	The City Development Committee, supported by the Environment and Health Committee, is responsible for follow-up.



TARGET 3.4. LOW CLIMATE IMPACT

Sub-target	Example measure	Key figures (possible method)	Principal/follow-up responsibility
3.4.1. Limit climate impact from production of buildings and facilities.	Climate calculation and action plan. Land allocation strategy.	Buildings: kg CO <sub>2</sub> e/m <sup>2</sup> GFA. Facilities: kg CO <sub>2</sub> e (climate declaration)	The City Development Committee, in collaboration with all committees and boards, has principal responsibility for this goal.  The City Development Committee, supported by the Environment and Health Committee, is responsible for follow-up.
3.4.2. Low climate impact from the operation of buildings and facilities.	Climate calculations.	Buildings: kg CO <sub>2</sub> e/m <sup>2</sup> A <sub>temp</sub> /year, incl. household electricity and commercial electricity. Facilities: kg CO <sub>2</sub> e/year (climate declaration).	

TARGET 3.5. GOOD INDOOR CLIMATES

Sub-target	Example measure	Key figures (possible method)	Principal/follow-up responsibility
3.5.1. More than 90 % of those who live and work in the area feel indoor environments are good.	Environmental building assessment, indoor environment.  Knowledge development on energy-efficient buildings related to good indoor environments.	Proportion of buildings that meet Sweden's "Gold" indoor environment standard, %.  Proportion of residents who are satisfied with indoor environments by age and gender, % (resident survey).	The City Development Committee, in collaboration with all committees and boards, has principal responsibility for this goal.  The City Development Committee, supported by the Environment and Health Committee, is responsible for follow-up.

TARGET 3.6. SUSTAINABLE SELECTION OF BUILDING MATERIALS

Sub-target	Example measure	Key figures (possible method)	Principal/follow-up responsibility
3.6.1. No substances that are hazardous to health and the environment are present in buildings and facilities.	Documentation.  Level 3 for preschools and schools	Proportion of deviations, %.	The City Development Committee, in collaboration with samtliga nämnder och styrelser, has principal responsibility for this goal.  The City Development Committee, supported by the Environment and Health Committee, is responsible for follow-up.
3.6.2. 100% of wood and stone products examined on basis of ethical responsibility in the supply chain.	BVB (a Swedish national building material assessment).  Self-assessment survey.	Proportion of wood and stone products that have been assessed, %.  Proportion of especially risk-assessed wood and stone products, %.	The City Development Committee and the Transport Committee, in collaboration with the Environment and Health Committee, have principal responsibility for this goal.  The City Development Committee is responsible for follow-up.
3.6.3. Lifecycle costs (LCC) are considered when designing and selecting materials in facilities.	LCC analysis.		The City Development Committee, in collaboration with the Transport Committee and the City District Council of Östermalm, has principal responsibility for this goal.  The City Development Committee is responsible for follow-up.
3.6.4. Increase proportion of reused and recycled building materials.	Study: opportunities and potential to recycle building materials.  Land allocation strategy.	Proportion of natural gravel, %.  Proportion of reused construction material, %.	The City Development Committee, in collaboration with the Environment and Health Committee, has principal responsibility for this goal.  The City Development Committee is responsible for follow-up.

# Let nature do the work

## TARGET 4.1. USE ECOSYSTEM SERVICES

Sub-target	Example measure	Key figures (possible method)	Principal/follow-up responsibility
4.1.1. Biodiversity and ecological connections are strengthened over time.	Green Space Index (GSI) on development sites. Goals for public open spaces. Ecosystem services analysis.	Proportion of spaces that meet GSI in % (inventory of nature values every 10 years, connectivity analysis every 10 years).	The City Development Committee, in collaboration with all committees and boards, has principal responsibility for this goal. The City Development Committee, supported by the Environment and Health Committee, is responsible for follow-up.
4.1.2. Green and blue structures purify and retain rainfall.	GSI on development sites. Retention, purification, and infiltration of stormwater in plant beds with biochar/ crushed stone. City of Stockholm's stormwater strategy and guidelines.	Proportion of spaces that meet GSI in %. Proportion of spaces that meet required level, %. Proportion of hardened surfaces on public land that can withstand the required level.	
4.1.3. Green and blue structures purify and retain rainfall.	GSI on development sites. Climate regulation strategy.	Proportion of spaces that meet GSI in %.	
4.1.4. Minimise effects of heavy rain.	Multifunctional surfaces and solutions. Heavy rain plans developed for each catchment areas.		The City Development Committee, in collaboration with the City Planning Committee and the Environment and Health Committee, has principal responsibility for this goal. The City Development Committee, supported by the Environment and Health Committee, is responsible for follow-up.
4.1.5. Create conditions for livelihood-supporting and cultural ecosystem services.	Cultivation strategy. Knowledge development of biochar.		
4.1.6. At least 90% of the residents are satisfied with the recreational and social values of blues and green structures.	Goals for public open spaces. Free Space Guide.	Satisfaction, % (resident survey). Use of parks – function (resident survey).	



# Participation and learning

## TARGET 5.1. STIMULATE LONG-TERM PARTICIPATION

Sub-target	Example measure	Key figures (possible method)	Principal/follow-up responsibility
5.1.1. Property owners and other managing organizations have knowledge of Stockholm Royal Seaport's sustainability profiling.	Communication strategy.	Proportion of property owners who have received information about sustainability profiling, %.	The City Development Committee, in collaboration with all committees and boards, has principal responsibility for this goal.  The City Development Committee is responsible for follow-up.
5.1.2. At least 90% of residents have knowledge of and understanding of system solutions in Stockholm Royal Seaport.	Communication strategy.	Proportion of residents who continue and can use system solutions, % (housing survey).	The City Development Committee, in collaboration with the City District Council of Östermalm och Stockholm Vatten och Avfall, has principal responsibility for this goal.  The City Development Committee is responsible for follow-up.
5.1.3. Increase residents' knowledge of Stockholm Royal Seaport's sustainability profiling and commitment to sustainable development.	Support housing initiatives, city walks, theme meetings.	Proportion of residents who feel involved in the development of the area, % (housing survey).  Proportion of residents who participate in activities; proportion of residents who receive information about these activities.  Proportion of residents who are aware of the sustainability profiling, %.	The City District Council of Östermalm, in collaboration with the City Development Committee and Stockholm Vatten och Avfall, has principal responsibility for this goal.  The City Development Committee is responsible for follow-up.

## TARGET 5.2. SUSTAINABLE CONSUMPTION

Sub-target	Example measure	Key figures (possible method)	Principal/follow-up responsibility
5.2.1. Increase the sharing of premises.	Study: Underused commercial premises.  Collaboration with stakeholders.		The City Development Committee, the City District Council of Östermalm, and the Education Department, in collaboration with the City of Stockholm's companies, has principal responsibility for this goal.  The City Development Committee should raise this issue during the planning stage.  The City Development Committee is responsible for follow-up.
5.2.2. The City of Stockholm and business community's activities in Stockholm Royal Seaport contributes to sustainability profiling.	Communication strategy.		The City District Council of Östermalm, in collaboration with all committees and boards, has principal responsibility for this goal.  The City District Council of Östermalm, supported by the Environment and Health Committee, is responsible for follow-up.
5.2.3. Stimulate initiatives to employ people who are outside the labour market.	Land allocation strategy.  Procurement strategy.	Number of people who have found work.	The City Development Committee, in collaboration with the City of Stockholm's companies, has principal responsibility for this goal.  The City Development Committee is responsible for follow-up.

TARGET 5.3. INNOVATION OCH DEVELOPMENT

Sub-target	Example measure	Key figures (possible method)	Principal/follow-up responsibility
5.3.1. Develop knowledge and experience through collaboration and innovation with Stockholm Royal Seaport as a testbed.	Innovation projects. Procurement.	Innovation projects. Innovation budget. .	The City Development Committee, in collaboration with all committees and boards, has principal responsibility for this goal.  The City Development Committee is responsible for follow-up.
5.3.2. Actors who participate in the development of Stockholm Royal Seaport undergo skills development.	Competence programme. Forums for sustainable solutions. Dialogue meetings.	Number of participants in competence development.	
5.3.3. Experience and learnings shared.	Event activities. Participation in networks. Conferences and seminars. Communication strategy.	Number of visitors.	
5.3.4. Digital infrastructure creates conditions for new tools and services.	Expanded IoT infrastructure. Innovation projects.		



# Appendix 2

## Stockholm Royal Seaport's contribution to Agenda 2030

This appendix shows how the Stockholm Royal Seaport urban development project can contribute to the City of Stockholm achieving the Agenda 2030 Sustainable Development Goals. Each goal begins with the UN definition and then describes how the goal is interpreted from the perspective of the City of Stockholm. Finally, it describes how Stockholm Royal Seaport contributes, as well as synergy and leverage effects that arise.



### Goal 1: No poverty

Poverty encompasses more dimensions than purely the economic and includes a lack of freedom, power, influence, health, and education. Despite the fact that Sweden has a well-developed welfare system, income disparities have increased and access to support for vulnerable groups has decreased. For example, people with disabilities and those who are foreign-born are less well established on the labour market compared to other groups.

Through its goals – **Vibrant city, Accessibility and proximity** and **Let nature do the work** – Stockholm Royal Seaport contributes to greater citizen dialogue in the design of the city's public spaces.

Goal **Participation and learning** stimulates initiatives that employ people who are outside the labour market by setting requirements in land allocation and contract procurement.



### Goal 2: Zero hunger

Access to adequate and nutritious food is a human right that every country has an obligation to guarantee its citizens. To put the goal of zero hunger in a relevant context, the City of Stockholm focuses on the sub-goal of malnutrition and obesity, which is a global and growing public health problem and one in which the City of Stockholm, like the rest of Sweden, has challenges.

Stockholm Royal Seaport contributes through the **Let nature do the work** goal with increased local production of nutritious food, through cultivation both in the neighbourhood blocks and on a larger scale by developing innovation projects.



### Goal 3: Good health and well-being

Healthy lives must be ensured, and well-being must be promoted at all ages. Life expectancy is increasing in Stockholm and the number of those in ill health

is declining, but there are considerable differences between parts of the city and between different groups of Stockholmers. Women live longer but feel worse and people with a higher level of education have better health on average. Differences in children's upbringing can affect health and well-being for the rest of their lives. Although access to nature areas and parks is generally good throughout the city, it remains a priority to ensure good conditions for healthy lifestyles throughout the city.

Through its goals **Vibrant city, Accessibility and proximity**, and **Let nature do the work**, Stockholm Royal Seaport contributes to public spaces for meetings and activities, facilitates walking and cycling for increased movement and exercise, and the design of blue and green structures for recreation that leads to healthier lifestyles. This is ensured in planning through, among other things, social value-creating analyses, child impact assessments, and walking and cycling plans. The goal of **Resource Management and Climate Responsibility** ensures healthy indoor and outdoor environments, which contributes to good health.



### Goal 4: Quality education

Inclusive and equivalent education of good quality must be ensured, and lifelong learning must be promoted. The City of Stockholm has a well-educated population, which is reflected in a knowledge-intensive business life. However, considerable differences within the city persist and differences in, above all, parents' educational background and origins are clear explanatory variables.

Through its goals **Vibrant city, Accessibility and proximity**, **Let nature do the work**, and **Participation and learning**, Stockholm Royal Seaport contributes to access and proximity to preschools and schools with safe school routes, which leads to inclusive and safe educational environments. The sustainability profile promotes lifelong learning.



## Goal 5: Gender equality

Gender equality and the empowerment of all women and girls must be ensured. By international standards, Stockholm is an equal city where the income gap between women and men is slowly decreasing. But there are still differences between the living conditions of women and men. Women's median income is lower than men's. It is more common for women to use public transport and get about on foot, while cycling accounts for an approximately equal proportion of women's and men's journeys. Women experience greater insecurity than men, which affects how women and men move in the public space – especially during the evening.

Through **all its goals**, Stockholm Royal Seaport ensures that girls and women, as well as boys and men, have equal access to the city, its resources, services, sports grounds, parks, transport alternatives etc. This is done in planning through, among other things, social value-creating analyses, child impact assessments and gender equality analyses.



## Goal 6: Clean water and sanitation for all

Access to and sustainable management of water and sanitation must be ensured. Access to clean water and sanitation is largely adequate for all residents of Sweden. Stockholm's challenges are primarily related to eutrophication and emissions of environmental toxins, which contribute to some lakes and watercourses failing to achieve sound ecological status.

Through its goals of **Resource efficiency and reduced climate impact**, Stockholm Royal Seaport contributes to reduced eutrophication and resource use through innovation projects to develop source-separated wastewater systems where water, energy, and plant nutrients are utilised.

The **Let nature do the work** goal contributes to local management of stormwater indirectly to reduce the risk of discharge of untreated wastewater.



## Goal 7: Sustainable energy for all

Access to affordable, reliable, and sustainable energy must be ensured. The City of Stockholm needs to change and reset its energy systems, replace fossil fuels with renewables, and make energy use more efficient in society.

Through its **Resource efficiency and reduced climate impact** goals, Stockholm Royal Seaport contributes to reduced energy use and increased production of renewable energy by setting requirements for land allocation and by developing innovation projects.



## Goal 8: Decent work and economic growth

Continuous, inclusive, and sustainable economic growth and full and productive employment with decent working conditions must be ensured. Stockholm is the engine of the Swedish economy with strong economic growth and a well-educated workforce. Challenges are linked to the two-tier labour market, which is characterised partly by a lack of skills and partly by the fact that there are groups that have difficulty finding work due to a lack of education and qualifications.

Through its **Participation and learning** goal, Stockholm Royal Seaport contributes to the development of new knowledge and innovative technologies that benefit entrepreneurship, creates jobs, and economic growth. The **Vibrant city** goal ensures a mix of functions that indirectly contributes to a varied content and opportunities for companies to establish themselves in the area.



## Goal 9: Sustainable industry, innovation, and infrastructure

Infrastructure must be resilient, and the planning of cities must promote inclusive and sustainable industrialisation and support innovation. Stockholm has well-developed transport and technical system infrastructure. The challenge is, among other things, to address climate change and reduce the city's resource use, incorporating digitalisation as part of the solution. Stockholm should offer safe, well-functioning, and innovative environments for entrepreneurship.

Through **all its goals**, Stockholm Royal Seaport contributes to building a multi-function city with robust and flexible infrastructure that will last over time and meet the challenges of the future with innovation and digitalisation being important tools. Stockholm Royal Seaport is a testbed for innovative and sustainable urban development.



## Goal 10: Reduced inequalities

The basis for a sustainable society is a fair distribution of resources and economic, social, and political influence in society where nobody is prevented from benefitting from progress. An equal society is based on the principle of equal rights and opportunities for all, irrespective of gender, gender identity, ethnicity, religion, physical ability, sexual orientation, and age. More needs to be done to reduce inequality and segregation, as well as to improve the living conditions of vulnerable groups in Stockholm.

Through **all its goals**, Stockholm Royal Seaport contributes to creating an inclusive, accessible, safe, equal part of the city where public space can be used by everyone and on equal terms. Cycling solutions contribute to a more equal use of resources now and over time. Through expanded citizen dialogue and



opportunities for co-creation, everyone is invited to contribute to the development of the area.



### Goal 11: Sustainable cities and communities

The rapid and large influx of people into cities places new demands on urban areas. Sustainable urban development includes housing, commercial spaces, public places, energy supply, transport, and water and waste management, which in turn require new technologies and co-operation between several sectors. Stockholm is one of the fastest growing regions in Europe and has challenges including growing segregation, housing shortages, and overcrowding. The availability of affordable housing needs to increase. A high proportion of the city's commuting is made on public transport, but leisure trips are made to a much greater extent by car. Stockholmers' access to nature areas and parks is generally good but still needs to be improved.

Through **all its goals**, Stockholm Royal Seaport contributes to inclusive and sustainable urbanisation that reduces negative climate effects and environmental impacts with accessible transport systems and an inclusive green structure where cultural and natural heritage such as Gasverket and the Royal National City Park are protected. Opportunities to create affordable housing is reviewed with the help of innovation projects.



### Goal 12: Sustainable consumption and production

Sustainable consumption and production patterns must be ensured. Our current consumption patterns have a negative effect on the environment and the climate, which is a major challenge as prevailing consumption patterns are linked to social norms that take time to change. The City of Stockholm has made progress in terms of waste management and recycling, but more needs to be done.

Through **Resource efficiency and reduced climate impact** and **Participation and learning** goals, Stockholm Royal Seaport contributes to increased recycling and resource-efficient management of other material flows.



### Goal 13: Climate action

Immediate action to reduce greenhouse gas emissions and combat its consequences must be taken. The City of Stockholm has conducted successful efforts to reduce greenhouse gas emissions for decades. Although emissions have almost halved since 1990, much remains to be done, especially in terms of vehicular traffic. The city also needs to deal with the expected effects of climate change, such as floods and heatwaves.

Through **all its goals**, Stockholm Royal Seaport contributes to

reducing the use of fossil fuels in transport and energy systems, increasing the production of renewable energy, and reducing energy use. Green structures are used to mitigate climate effects such as heatwaves, downpours, and dry periods. This is achieved by setting requirements in land allocation.



### Goal 14: Sea and marine resources

Ocean and marine resources must be preserved and used sustainably. Stockholm's water bodies, Lake Mälaren, and the Baltic Sea are heavily burdened by human activity. Eutrophication, environmental toxins, and physical impacts contribute to it becoming difficult to achieve acceptable ecological standards in the city's waters.

Through the goals of **Resource efficiency and reduced climate impact** and **Let nature do the work**, Stockholm Royal Seaport contributes to reduce the climate impact on watercourses through land reclamation and efficient stormwater management.



### Goal 15: Ecosystems and biodiversity

Sustainable use of land-based ecosystems must be protected, restored, and promoted, forests must be used sustainably, land degradation must be stopped, and the loss of biodiversity must be halted. The rapid pace of development in Stockholm and the fact that exploitation takes place partly in weak green links that provide a reduced proportion of green space represents challenges to biodiversity.

Through its goals of **Vibrant city** and **Let nature do the work**, Stockholm Royal Seaport contributes to the creation of habitats and dispersal zones that benefit biodiversity and robust ecosystems by increasing ecosystem services. This is achieved with the help of multifunctional green and blue structures and effective management of stormwater.



### Goal 16: Peace and inclusive societies

Peaceful and inclusive societies for sustainable development must be promoted and access to justice must be provided. The City of Stockholm focuses on issues related to increased social inclusion and security. Turnout is increasing overall in the city, but considerable differences between districts persist. There are also differences in the experience of security between different parts of the city and between different groups of Stockholmers.

Through its goals of **Vibrant city**, **Accessibility and proximity**, **Let nature do the work**, and **Participation and learning** Stockholm Royal Seaport contributes to planning for well-populated places and thoroughfares that support increased security and inclusion for people who feel insecure in public environments.

Through inclusive processes in the development of the area, more people, regardless of gender, age, and background, will be able to participate



### Goal 17: Implementation and global partnerships

The world today is more interconnected than ever, and the SDGs can only be realized through global partnership and co-operation. Many of the important initiatives that are underway in the Stockholm region are based on well-developed co-operation and various forms of partnership between the City, other public actors, academia, business, and civil society.

Through the project's **working methods** and the goal **Participation and learning**, Stockholm Royal Seaport contributes to

increased collaboration between all actors involved, as well as to innovation, knowledge development, and dissemination of experiences. In addition, skills- and capacity development programmes are provided for all participants.

### AGENDA2030 DIRECT AND INDIRECT TARGET FULFILLMENT

● Direct   ● Indirect

	Vibrant City	Accessibility and Proximity	Resource efficiency and reduced climate impact	Let Nature Do the Work	Participation and Learning
Goal 1	●	●		●	●
Goal 2				●	
Goal 3	●	●	●	●	
Goal 4	●	●		●	●
Goal 5	●	●	●	●	●
Goal 6			●	●	
Goal 7			●		
Goal 8	●				●
Goal 9	●	●	●	●	●
Goal 10	●	●	●	●	●
Goal 11	●	●	●	●	●
Goal 12			●		●
Goal 13	●	●	●	●	●
Goal 14			●	●	
Goal 15	●			●	
Goal 16	●	●		●	●
Goal 17					●



# Appendix 3

## The City Plan's urban development goals and Stockholm Royal Seaport's goals

Urban development goals are described in the following way in the City Plan:

### A growing city

Stockholm is to be a growing city, attracting people, companies and visitors from across the world. A rapid rate of urban development is to guarantee homes and public services for everyone. Good accessibility is to give people and companies everything they need to develop and grow.



### A cohesive city

Stockholm is to be a cohesive city where moving between different areas and visiting new places comes naturally. People with different backgrounds must be able to encounter each other as they go about their daily lives and the city's many urban settings with all their different features must be accessible to all of the city's residents.



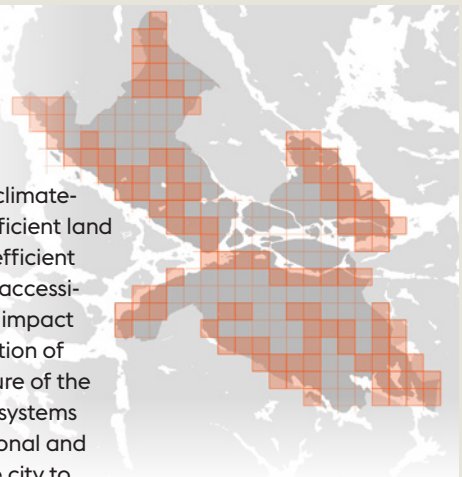
### Good public spaces

Stockholm is to have many, diverse neighbourhoods with strong identities and flourishing local centres. Every part of the city must offer a good environment in which to live, with good access to the benefits of urban living and well-designed, safe public spaces encouraging participation and engagement in local community life.



### A climate-smart and resilient city

Stockholm is to be a climate-smart city in which efficient land use and a transport-efficient layout foster greater accessibility, a lower climate impact and limited consumption of resources. The structure of the city and its technical systems must be highly functional and resilient, enabling the city to cope with climate change and other stress factors



## How the urban development goals relate to Stockholm Royal Seaport's goals:

### Goal 1. Vibrant city

This goal primarily contributes to the fulfilment of the City Plan's urban development goals: **Growing city**, **Cohesive city**, and **Attractive public environment**. Growing city means that Stockholm should be an attractive and well-functioning city with good accessibility; this is included in the Vibrant city goal.

The urban development goal **Growing city** states that Stockholm should be able to offer housing in different price ranges and tenancy forms. It reappears in the goal Vibrant city, which states that there should be a variety housing options. The urban development goal, **Cohesive city**, and goal Vibrant city state that the city must be connected through a coherent network of streets and parks, with a coherent network of urban spaces and strong destinations in all parts of the city. Both goals state that it should promote that people with different backgrounds should be able to meet. The urban development goal **Attractive public environment** highlights, among other things, the need for vibrant local centres, good access to different urban qualities, mixed urban environments, varied housing stock, and inviting public spaces. This goal deals with all these objectives.

### Goal 2. Accessibility and proximity

This goal primarily contributes to the fulfilment of the City Plan's urban development goals: **Cohesive city**, **Attractive public environment**, and **Climate-smart and resilient city**.

From both the urban development goal **Cohesive city** and the goal Accessibility and proximity states that the city must be connected through a coherent street network and good public transport. The urban development goal **Attractive public environment** highlights, among other things, the need for access to everyday services and public transport. This is also highlighted in this goal, which also adds an even clearer gender equality perspective on these issues. The urban development goal **Climate-smart and resilient city** states that total vehicular work must be reduced, especially for cars, for Stockholm's traffic system to function efficiently. This is in line with the goal's focus on stimulating sustainable modes of transport.

### Goal 3. Resource efficiency and reduced climate impact

This goal primarily contributes to the fulfilment of the City Plan's urban development goal **Climate-smart and resilient city**.

The urban development goal **Climate-smart and resilient city** emphasizes, among other things, that Stockholm should have efficient land use and create greater proximity, which is also part of the goal Resource efficiency and reduced climate impact. Energy efficiency and planning to strengthen ecosystem services are highlighted in the urban development goal **Climate-smart and resilient city** and these goals are found in Resource efficiency and reduced climate impact.

### Goal 4. Let nature do the work

This goal primarily contributes to the fulfilment of the City Plan's urban development goal **Cohesive city** and **Climate-smart and resilient city**.

A cohesive park network is highlighted in the city building goal **Cohesive city**. The Let nature do the work goal states that well-thought-out design, blue and green structures can fulfil several functions, contribute to synergy effects, deliver ecosystem services, and provide opportunities for recreation. The **Climate-smart and resilient city** urban development goal highlights the importance of the development of climate-adapted urban environments where networks of greenery and water provide ecosystem services that equalize temperatures, promote good stormwater management, and improve flood resistance – issues addressed in the Let nature do the work goal.

### Goal 5. Participation and learning

The **implementation section of the City Plan** emphasizes the importance of participation and dialogue in urban development – issues that are found in the Participation and learning goal.

# Appendix 4

## Glossary

**Active ground floors.** Mixed-use ground floors that contribute to attracting people to streets and places at different times of the day. This can be shops, cafés, restaurants, laundries, shared commercial spaces, or bicycle rooms with workshops.

**CCC, Construction Consolidation Centre.**

Co-ordinates all transports of building materials and waste to and from the construction area and offers various services such as short-term storage of materials.

**Cultural ecosystem services.** Values offered by nature that are of significance to people in form of experiences, recreation, aesthetics, knowledge, and education.

**District park.** According to the City of Stockholm's Open Space Guide: a district park is a large park that functions as a destination and a social meeting place for a district, or larger part of one or several districts. A district park should be at least three hectares and at least 50 metres wide.

**Form factor.** Describes how compact a building is and calculated as the ratio between the surface area of a building's envelope and its heated surface area ( $m^2 A_{temp}$ ).

**Fossil-fuel free transport and energy systems.** System boundary for calculated emissions is the energy use for heating and transports as well as electricity and gas use within the geographical boundaries of the municipality.

**Fossil-fuel free.** Fossil-fuel free is defined by the City of Stockholm's climate action plan 2020–2023. See [start.stockholm](http://start.stockholm).

**GFA, Gross Floor Area.** The sum of each storey of a building's floor area limited by the inside of the exterior walls.

**Green oasis.** Open spaces with social values that are predominately areas of greenery and are at least 300  $m^2$ .

**Grounds for discrimination.** Gender, transgender identity or expression, ethnicity, religion or other belief system, disability, sexual orientation, and age.

**GSI, Green Space Index.** A calculation tool for the eco-efficient surface area, i.e., the green spaces that contribute positively to a site's ecosystems and local climate as well as social values linked to greenery and/or water.

**Level of action stormwater.** Specifies requirements for dimensioning, retention, and purification of stormwater. All water from hardened surfaces on block land and public land should lead to local stormwater installations with 20mm retention.

**MCC, Mass Consolidation Centre.** Local facility for management of excavated materials where the materials are sorted for local use or transported away from the area.

**MI, Mobility Index.** Calculation tool for evaluating measures at property level for sustainable travel.

**Norm-creative housing design.** A way to change and break housing planning norms.

**Nudging.** Methods aimed at increasing people's motivation and awareness by encouraging them to make more sustainable decisions and adopt more sustainable behaviours.

**Open Space Guide.** Provides practical guidance on how to measure and evaluate access to public open spaces when the city is built or expanded. The Open Space Guide deals with publicly accessible open spaces with social values.

**Public open spaces with social values.**

Publicly accessible open spaces with social values.

**Quality programme.** Quality programme is an appendix to the detailed development plan and is approved by the City Planning Committee. It is designed to form a common basis for the City and developers for project planning, building permit management, construction, and management of buildings in the planning area. Through the development agreement approved by the City Development Committee, developers undertake to monitor the quality of the programme.

**Residual waste.** Waste that remains after hazardous waste, electronic waste, heavy waste, and recyclable materials are sorted.

**Satisfaction ratio.** Key figures that describe how satisfied residents and workers are with different aspects of their local area.

**Sojourn streets.** Streets that are designed to allow for recreational activities over traffic

**Source-separated wastewater system.** In a source-separated wastewater system, wastewater is separated into three streams: grey water, (bathing, dishwashing and washing clothes), closet water, and organic food waste. The aim is to utilise resources, (water, biogas, nutrients, waste heat) in wastewater more efficiently.

**Supply chain.** Flow of construction materials from manufacturers to customers.

**Swedish Building Code regulations.** A collection of regulations and general advice determined by the National Board of Housing, Building and Planning that apply to Swedish buildings.



**System integration.** Several different free-standing systems that are connected so as to work together and optimise synergies.

**Traffic flow.** Denotes the total amount of traffic in a given area and given time.

**Traffic-free zones.** Streets that prioritise surface area for activities and greenery above vehicular traffic.

**Urban planning principles.** The starting points that form the basis for work with planning structures as well as planning and design of the city's buildings and public spaces to achieve an attractive built environment.



**Sustainable Urban Development  
Programme**

Stockholm Royal Seaport is leading  
the way to a sustainable future

City of Stockholm  
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