

Guide

Western Harbour

Sustainable City Development

Each year, Western Harbour and the Bo01 area attract thousands of visitors from all over the world who want to take a closer look at the unique sustainability solutions in the area. However, not all smart solutions and inputs are visible on the surface.

We have therefore pointed out a few Green Dots that indicate particularly interesting investments in Western Harbour. You cannot help but see some of these, while others are more difficult to spot with the naked eye.

This guide will help you to see what lies beneath the surface so you can understand for yourself why Western Harbour is unique.

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- 1 Sustainable Development in Malmö and the world
- 2 Education for sustainable development
- 3 The history of the Western Harbour
- 4 Economic Sustainability
- 5 Social Sustainability
- 6 Stapelbäddsparken and ecological playground
- 7 The building and living dialogue
- 8 The sea
- 9 Cycling
- 10 HSB Turning Torso
- 11 Public transport
- 12 Soil decontamination
- 13 The parks
- 14 Skanska's wooden buildings
- 15 Architecture
- 16 Energy efficient buildings
- 17 100 % locally renewable energy
- 18 Art
- 19 Nature
- 20 Open storm water-system
- 21 Fair, organic and local
- 22 Sun, wind and water
- 23 Circulation
- 24 Kockum Fritid sports complex

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Welcome to the Western Harbour in Malmö

The Western Harbour has in a couple of decades transformed itself from being an industrial park into becoming an area for knowledge and sustainable living. Since the closing of Kockums machine halls and cranes have been making way for parks, swimming areas, schools, and living accommodations. Malmö University opened in 1998 and 3 years later the European home fair Bo01. These two milestones marked the start for a new urban area coming to life in Malmö.

Western Harbour and the Bo01 area attract thousands of visitors from around the world every year who want to get a closer look at all the unique sustainability solutions in the area. However, not all of the smart solutions and projects are visible on the surface.

Therefore, we've pointed out a number of points of interest. These are called Green Dots and they highlight some especially interesting projects in the Western Harbour. The idea with Green Dots is for inhabitants and visitors to build up their own understandings based on experiences they encounter on site. Certain points are hard to miss while others are much harder to discover with the naked eye.

This guide will help you see what's behind the surface so you can create your own understanding of why the Western Harbour is so unique.



Sustainable city development

Today, half of the world's population lives in cities, which is a unique milestone in world history. In the 1970's, the first ideas came to light for creating an environmentally adapted society and the result was eco-villages spread outside the cities. The next step was pilot projects such as Bo01, where urban and sustainable living solutions of the future are prominent.

Bo01 has experienced an enormous amount of international attention. Already today, approximately 20 000 international visitors have come to the Western Harbour solely to look at the environmental focused solutions and projects! Bo01 is also very popular amongst Malmö's inhabitants. On any given warm summer day, approximately 15 000 people visit the area.

After eco-villages and projects like Bo01, we of course want to take the next step by making the whole of Malmö economically, socially, and ecologically sustainable for the future.



Sustainable development in Malmö and in the surrounding world

Here in Helixhuset, across the street from Malmö University, drawings for submarines were once designed for Kockums Industries. Today, it has become a meeting place for local and regional sustainability participants. Helixhuset is a good starting point for discovering the Western Harbour with all it has to offer in the area of sustainability.

The City Planning Forum is located on the ground floor at Helix, with a library where you can learn more about ongoing and planned projects. The fourth floor offers a

showroom and facilities for conferences and workshops that focus on sustainable development.

In connection with major reconstruction, environmentally sound furniture and equipment such as kitchen cabinets, desks and textiles were chosen. TVs and computers are certified by the Swedish "Svanen" environmental organisation. On the roof there is a sun terrace with examples of renewable energy solutions. Solar cells are integrated into the roof windows and solar thermal panels provide heat for the kitchen water and the bathroom water.



Education for sustainable development

You are now facing Malmö's new Teacher Training Department called Orkanen. The building, beautiful both in the daylight and at night, is built on the same scale and simplicity as the old industrial buildings in the area.

Malmö has been transformed from an industrial city to a knowledge-based city of the future. The city has proven itself to be a good arena for new innovations. Directly opposite the Teacher Training Department is the Malmö Business Incubator (MINC), where entrepreneurs are

supported in building their businesses.

The UN has declared 2005 – 2014 "The Decade for Education for Sustainable Development". In order to support this process, the UN has launched the "Regional Centre of Expertise on Education for Sustainable Development – RCE" concept. Malmö University is one of five partners in RCE Skåne together with the City of Malmö, Lund, Lund University and Region Skåne. RCE Skåne supports learning about sustainable development.



The history of the Western Harbour

100 years ago, the Western Harbour did not exist. Land was gradually created using fill masses in the sea, with the final filling taking place in 1987, which created the shape of the land as it is today. Sand from Køgebukten was used to fill the large harbour basin and Scaniaparken was created.

Kockums Industries was founded in the area right back in the 1870's. Kockums built tankers longer than the Turning Torso is tall. At its peak, 6 000 people worked among docks, cranes and big industrial buildings. The decision to close the business was made in 1986.

Saab-Scania was then established in Malmö and

one of Europe's most modern car manufacturers operated out of Kockums Hall, a huge building of 100 000 m² with 40 metre-high ceilings. But the plant was closed in 1996 due to a decline in profit and re-structured when Saab-Scania merged with General Motors. The land and the buildings were bought by the City of Malmö and the plant was transformed into the Malmö Exhibition & Convention Centre.

In 2001, the European Housing expo Bo01 opened, which saw the start of the Western Harbour, a new district in Malmö.

In 2009, Sveriges Television moved into the old part of Kockums, machine hall 101.



Economic sustainability

In recent years, Malmö has been transformed from an industrial city into a knowledge-based city. This transformation is most obvious in the Western Harbour. Kockums used to be the backbone of Malmö, but today, more people are working in this area than during the glory days of the wharf. Technology and knowledge-based service businesses have established themselves in the area, and the old wharf area has become the new IT hub of Malmö.

The symbol of the old wharf, the Kockums crane, is now standing tall in South Korea. Instead, the Turning Torso is the new landmark of post-industrial Malmö. Malmö University is also located in the area with its more than 20 000 students. The university is the eighth largest in Sweden today. The close proximity between the business world and the university makes for easy cooperation between the two.



Social sustainability

In a sustainable district, it has to be possible to interact with other people and to participate in cultural activities. The social aspects have to be taken into consideration from different perspectives. Stapelbäddsparken, which is dominated by the concrete skateboard area, is located in the centre of the Western Harbour. The entire Stapelbädd area is becoming an activity centre with cafés, boules court, climbing wall and greenery.

The idea is for the activity park to become a natural breeding ground for both the street culture and the more organised community groups. The park will become a meeting place for all age groups, offering a broad range of activities promoting the health and well-being of the visitors. The skateboard park was designed and created on the basis of the initiative from the Bryggeriet organisation, and is a part of today's youth culture.

The residential area of Flagghusen is located not far from the area. The area is built with social sustainability and safety issues in mind. Various types of home such as co-operative apartments and rental apartments are being built in the same block and the security of the residents is safeguarded by the correct construction of meeting places.



Stapelbäddsparken and ecological playground

The importance of trees in a sustainable society is one of the reasons that so many parks were planned in the Western Harbour. Green areas are important for many reasons, since they are a place where children play and discover new things, where people stroll and animals live. Stapelbäddsparken is planned for all these activities. The idea is for citizens of Malmö to be able to walk from the centre of Malmö to the Western Harbour through parks and new green zones. The large, green, lush Stapelbäddsparken creates opportunities to meet people, rest and play.

The new school in the area will also be built in the park.

The park has a unique playground. The playground was created for the housing expo Bo01 and it is educational, innovative, ecological and, most importantly, fun for the children. The playground is entertaining for many children while being playfully sustainable at the same time. As much of the material as possible is recycled and can be re-used if the playground needs to be demolished in the future.



The building and living dialogue

The Flagghusen residential area consists of the Kommendörkaptenen and Flaggskepparen neighbourhoods with a total of 16 buildings and more than 600 apartments, both rental and co-operative apartments. After eco villages and demo projects, they represent the third generation of sustainable urban design.

Before the Flagghusen area was built, the Good dialogue was started. This means that both citizens and the developer were invited to take part in the planning of the area from the start. In this dialogue, the plan, the architecture, the quality issues and the environmental adaptation were discussed with an unprejudiced approach in order to come up with the best solutions.

The high levels of social, economic, and ecological sus-

tainability in this area will become the new standards.

The active focus on creating safety and security for the residents by wise planning and the design of meeting places, is an example of social sustainability in the area. The economic sustainability is reached by creating reasonable costs for the residents in the area. This is achieved by efficient processes and planning in everything from thought to implementation. The apartments also have a long lifespan and low maintenance costs, which lowers the cost of living even further.

Ecological sustainability is created by energy efficiency, the discontinued use of poisonous substances, source sorting in the near vicinity, local surface water handling and much more, which of course contributes to the strong ecological profile in the area.



The sea

In the sea below the promenade and the Scania Park, there are neighbours other than those in the buildings. The native seagrass areas, the nurseries of the sea, is where the European sprat, European plaice, broad-nose pipefish and shrimp live. The native seagrass areas in Öresund are generally in very good condition, which is also important to the birdlife. Just below the surface lives the common jellyfish. In more shallow waters, where strong currents take over and the seagrass cannot grow, the rag worm lives instead.

Scaniabadet, the public bath is located in the Scania-parken. It consists of a 75 metre-long and 20 metre-wide promenade with steps to sit on and three long piers.

From here, you can also see the Boel windmill, which supplies the entire Bo01 area with electricity. Boel is situated in the Northern Harbour.



Cycling

Malmö has put a lot of effort into becoming a bicycle city. The city has miles and miles of good, fast and safe cycle paths that make it easy to get where you want to by cycling. In the Western Harbour alone there are 8 185 metres of new cycle paths that blend very well into the area. In Malmö, everything is within cycling distance!

Cycling is one of the most environmentally friendly ways to get around. The bicycle does not pollute, it takes up a minimum amount of space and it is great for your health. The bicycle is definitely the transportation choice of the future in Malmö.



Construction started in February 2001. The first residents moved in during the summer of 2005.



HSB Turning Torso

HSB Turning Torso is Malmö's landmark by the sea. This spectacular building, 190 m above ground and with 2 500 windows, was created by the architect Santiago Calatrava. HSB Turning Torso has won international acclaim and many awards.

In HSB Turning Torso, the two lowest cubes house offices, while the other cubes consist of apartments. On the two top floors there is a convention centre with an amazing view.

The use of hot and cold water and heat and electricity is measured in every apartment. The residents can then check their consumption via the intranet in the building and see how they can save more water, heat and electricity. HSB Turning Torso has also been equipped with energy efficient appliances, an air recirculation ventilation system and energy-saving controls in the apartments. All apartments are equipped with food grinders for the separation of organic waste.

Materials such as types of wood and fixtures are chosen with great care and LED lighting has been installed in the hallways to minimise the use of electricity. The residents are offered a briefing of the environmental aspects of the building before moving in.



Public transport

Many improvements have taken place in the Western Harbour in order to make public transport more attractive. Buses are given high priority at traffic lights, the bus stops now have elevated platforms, electronic timetables and weather protection. Higher frequency bus services are now available, connecting central parts of Malmö with vital areas of the Western Harbour.

Efforts have been made to lower harmful emissions

in the area. This has contributed to making public transport even more sustainable. As early as 2003, a pilot project was initiated where two city buses operating in the area were fuelled by a mixture of 8 % hydrogen gas from wind power and 92 % vehicle fuel. The project is very successful and plans are being made to use the fuel mixture in more buses in Malmö.

Thanks to the improved public transport, it is easy to live in the Western Harbour without using a car.



Soil decontamination

Not so long ago, the entire Bo01 area was sea. However, excavation masses have been dumped into the sea and industries have moved in and out of the area. It was therefore necessary to decontaminate the soil before houses could be built.

In some areas there were high concentrations of toxins, and around 10 000 tonnes of soil were processed. The soil that was dug up was thoroughly tested and as much as 75 % of that soil could be used again in the area. The remaining 25 % was decontaminated both chemically and biologically. In many areas, the decontamination areas were low enough to enable the old soil to be covered with a layer of new, clean soil.

The water in the canals in the area is pumped in because the main canal is purposely built a few metres above sea level so that the water does not permeate through the contaminated layers of soil. This was done to minimise the risk of toxins spreading.



The parks

Ankarparken and Daniaparken are two parks in the area. In Ankarparken there are many biotopes such as alder marshes, oak groves, beech groves and a pine grove. These biotopes are like an exhibition of what nature can look like outside of the city. The biotopes also attract various animals, and a variety of plants and wildlife is created in the area.

Daniaparken offers plenty of opportunities to follow the changes in nature from season to season. The park has a strict yet exciting architecture. A large ramp leads up to a gigantic stone table. The space has both an open area where you can enjoy the powerful weather conditions on stormy days, and a calmer seating area next to an area planted with perennials. This is a place for rest and relaxation.

Skanska's wooden buildings

There are many areas of wooden houses and houses made from materials derived from wood in the Western Harbour. Skanska has successfully built one of these blocks with 3-floor apartment blocks, terraced houses and tower blocks with a yard. The area offers unique possibilities to individually adapt the housing and it is full of new, creative solutions. The yard consists of a lawn with apple trees, a water reservoir, elevated flower beds and a circular staircase with a tree in the middle. There is also a stone covered area where vegetation can grow in the apertures. One area of the garden is covered with sedum plants that take care of the rain water.

The wooden houses are energy efficient with extra heat insulation. The residents can also measure their consumption individually in every apartment. The appliances are energy-efficient and taps and toilets are water-efficient. All apartments are also equipped with a recycling system underneath the sinks.





Architecture

The urban architect Klas Tham was a key person in the process of creating Bo01. The idea of buildings that create a wall against the sea and with a small-scale interior was a novel idea that initially met with strong criticism. The idea of building in an existing park and transforming a strip of the waterfront into a promenade was also controversial. But today, Sundspromenaden is a very popular place for everybody with its promenade and seating areas in the evening sun.

Many architects and builders are co-creators of the area, which has given it its unique character. A character and style that will never go out of fashion. Take a look at what the area offers! Winding roads, unexpected discoveries, unusual colours and spaces. The area consists of both low, densely-built houses with green areas in between and a very tall building.



Energy efficient buildings

The ecstatically appealing and energy efficient single-family houses by LB-hus and Yxhult are important assets of Bo01. It takes a variety of solutions to achieve the energy efficient and ecologically sustainable houses of the future, and these energy-efficient houses have paved the way. When it comes to both electricity and heating, the consumption of the houses is half as high as that of the average home.

The LB-house is well insulated to use very little heat and the windows are energy efficient to minimise heat loss. The energy from the ventilation is re-used and heats radiators and tap water. The interior climate in the houses is very stable and pleasant. The houses are also very easy to clean, since they have a central vacuum-cleaner and since many of the surfaces consist of re-used material.

The Yxhult house is a light-weight concrete house. The material itself is insulating to store heat. The warm out-going air is re-used and transferred to incoming fresh air. The houses are densely built, but have the ability to let moisture pass without any risk of damage to the structure. Since the buildings consist of modules and a homogeneous material, the building process is very efficient.



100 % locally renewable energy

Our effect on the climate means that we have to find solutions for the future. The carbon-neutral energy system of Bo01 proves that it is possible to supply an entire city district with 100 % locally renewable energy. The district offers ways for people to live in a sustainable way, use public transport and economise on resources.

The Bo01 area is an important example for the future and the district has received a lot of international attention.

The goal of the district is to have very low energy consumption, but at the same time, the residents demand a high level of comfort. They want to live well, even if they save energy. Better ventilation and more efficient buildings have led to much less energy being used for heating than in the average home. The residents can also monitor their indoor climate individually using different IT solutions.

Art

There are works of art from several different artists in the Bo01 area, all representing different forms of expression, surprising and unexpected for the residents and visitors in the area.

Examples include the beautiful, polished, stones along Sundspromenaden which are transformed into unique forms. The stones are chosen and polished and then put back in their original place. Each and every stone is like a diamond! The work of art, very fittingly called “Diamonds are Everywhere”, was created by Sigurdur Gudmundsson.

Next to the waterfall by the marina there are 102 faucets! They are supposed to be associated with a large bathroom, but also with the shortage of natural resources. The work of art is called “Waterfall” and was created by Kari Cavén.

The glass bubble is a spectacular piece of art created by Monica Gora. The bubble, 830 m³, is constructed in crystal clear glass and has a rounded shape. The sunlight creates an even and pleasant temperature all year round for the residents.

Many houses have their own identity, just like many entrances. The houses are decorated by a series of symbols which give the area a specific symbolic signature. A sustainable city should also be an attractive place to live in.





Nature

Nature is present throughout the city district thanks to conscious planning. Rich and varied greenery in parks, yards, along streets and in squares has a positive effect on the health of residents and visitors. The plan is to efficiently use the space available and to promote biodiversity. The natural areas also handle rainwater and meltwater.

The hard surfaces that are no longer permeated by rainwater or house any greenery have to be compensated with other green surfaces such as green roofs and green walls. The green roofs are also good for

the local climate. From where you are standing now, you can see a beautiful example of a roof that is green with sedum.

In the Bo01 area, there is a strategy for all the plants and trees in yards and in gardens. For example, some of the plants are chosen for their nectar productivity. The Swedish flora flourishes in the country-style gardens in the area. Among the plants climbing the walls, butterfly gardens and undisturbed corners, wild animals feel at home. There are also plenty of bird and bat nesting boxes in the area.



Open storm water-system

The rainwater, also called storm water, falling in the area does not just pour down into the sewer system like in other areas. Here, it runs into canals, ponds and fountains in the area before reaching Öresund, either directly or by passing through the salt water canals. This system is not only beautiful for the residents, but it is also good for the environment. In this way, the water is biologically cleaned before reaching Öresund. Being able to enjoy the view of running water from their houses or apartments also benefits the physical and mental health of the residents.

The open storm water system in the area is unique and very much appreciated by the residents and by visitors, especially by children. The water in the canals, ponds and the fountains offers a variety of entertainment. If the ponds dry up, they are refilled in order to maintain the biodiversity.



Fair, organic and local

Buildings and homes are not the only things that are sustainable in the Western Harbour. The Salt & brygga restaurant takes sustainability seriously. It is the most sustainable and energy efficient restaurant in Sweden and it focuses on organic and locally produced food. The restaurant also offers organic wine and organic and Fairtrade coffee.

Details like the staff's organic clothes, energy efficient appliances, environmentally labelled tablecloths and napkins contribute to a very holistic sustainable approach.

The food we eat affects our environment in many ways. The farming, the refining and transportation of products consumes energy and contributes to the green-house effect. By making environmentally conscious choices, we can make our impact less harmful. Malmö is Sweden's first Fairtrade City. Being a Fairtrade City testifies to the commitment to promote ethical consumption. There is a political consensus in Malmö to choose Fairtrade alternatives in procurement, and there are already many work-places ordering Fairtrade products.



Sun, wind and water

In the Bo01 area, the energy solutions were already integrated into the buildings in the architect's original design. When the energy solutions blend into the environment, the overall effect is more visually satisfying. There are solar panels, solar cells and underground thermal mass storage facilities. In the Bo01 area, one of Sweden's largest wind turbines supplies the area with electricity.

1 400 m² solar panels in the area absorb the heat from the sun and warm the water in the pipes in the panels. The water is then used to heat the

water in the radiators and in the taps.

The 120 m² solar cells produce electricity in addition to the wind turbine. The solar cells are placed on semi-transparent glass roofs that let the light through to the balconies below.

A water pump draws energy from natural water reservoirs, known as aquifers, in the underground rock. The system stores warm water from the summer to heat buildings and water in the winter and cold water from the winter to cool buildings in the summer.



Circulation

The aim of a sustainable society is to recycle, re-use and minimise all aspects of circulation. All buildings have access to source-sorting of refuse where food waste is separated. The food waste from the more than 200 food grinders in the kitchen sinks is made into energy-rich biogas for electricity and heat generation. The food grinders are very popular among the residents.

There is also a refuse suction system in the area. The only thing that is visible in the system is pipes sticking up from the ground where the residents discard their refuse. The refuse is then sucked through underground pipes to the outskirts of the area where it is then later picked up by refuse trucks. This means that the trucks do not have to drive into the residential area.

Here, at the harbour office, you can see both the refuse disposal and the hatch where the refuse is sucked up into the truck.





Kockum Fritid sports complex

The Kockum Fritid sports complex was built in the mid-seventies by Kockums Industries to promote the health of the employees. However, when the wharf-crisis hit, the complex was sold to the City of Malmö in 1982. Today, a City of Malmö municipal foundation runs the whole of the Kockum Fritid complex.

The Kockum Fritid sports complex has been transformed from something of an “environmental bad boy” to an envi-

ronmental example. When the complex was built, the energy prices were low and the complex used large amounts of energy and chemicals. Conscious focusing on better insulation, the installation of a new energy system and 1 200 m² solar panels on the façade have lowered the energy consumption of the building by 50 %. The complex now also uses far fewer chemicals so people can swim, play and skate with a clean conscience!

