

# What makes a sustainable city?



**#nordicsolutions  
to global challenges**



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**Nordic  
Innovation**

***“We know that the creation of a sustainable society will always be a complex process. There is no single solution but rather thousands of small steps that need to be taken.”***

*Stefan Löfven  
Prime Minister of Sweden*

## **Find inspiration in the Nordic cities**

This booklet showcases the Nordic Sustainable Cities – giving you an insight into the shared practices that Nordic cities are using towards sustainable urban futures.

The challenges that Nordic cities face – unsustainable resource consumption, pollution, homelessness, segregation, to name a few – are not unique to the region, but found all over the world.

The Nordic region and its cities are on a journey towards sustainability, and we invite you to join us.

For more information visit  
**[www.nordicinnovation.org/sustainablecities](http://www.nordicinnovation.org/sustainablecities)**



# Inclusive City

## Cities made for and by the people

With a focus on the human scale and the enhancement of people's everyday lives, the Nordic cities are some of the world's most accessible, pleasant, and safest places in the world to live. In fact, inclusivity is one of the key foundations of the Nordic Sustainable Cities story.

From Jan Gehl's cities for people mantra to the Nordic charter for universal design; strategies and solutions that ensure people have access to public spaces and services and encourage social interaction continue to shape Nordic cities today. Inclusive housing policies contribute to the Nordic cities' capacity to provide housing options for all residents. While civic engagement ensures that the physical city represents the diversity of its people.



***"We continuously strive for readable accessibility and seek to represent an attitude in architecture which includes social behaviour. This may be achieved by a certain degree of intimacy between public and projects, a touchable reality leading to public ownership."***

*Kjetil Thorsen  
founding partner, Snøhetta*



## Mixing housing & mixing people

Helsinki, Finland

The City of Helsinki uses a mixed tenure housing policy to counter social segregation, bringing people of all backgrounds together in neighbourhoods.

***"It wasn't until we started working internationally that we realised how fundamental it is for Nordic architects to think about everyone's access to views, daylight, and a social life."***

Cat Huang  
Architect, BIG



# Healthy City

## **Human wellbeing and environmental health are one and the same**

Traditionally, the combined effects of rapid urban development, increased urban sprawl, and pollution have overwhelmed many cities' efforts to improve civic health and wellbeing. The Nordic cities are applying practices that bring city, nature, and health under one strategic umbrella.

Across the Nordic region, cities are using the natural landscape as the underlying principle for urban development. By preserving nature and access to clean waterscapes, the Nordic cities are simultaneously offsetting negative climatic effects, such as flooding and urban heat retention, while increasing opportunities for biodiversity and recreation. This all adds up to improved human physical and mental wellbeing.



## Bringing the sun to commuters

*Umeå, Sweden*

Umeå invites commuters to soak up the benefits of light therapy at bus stops. Installed with anti-SAD (Seasonal Affective Disorder) lamps, the repurposed bus stops have supported an increase in public transport usage while bringing the benefits of nature's best qualities to residents in the dark winter months.

## Swimming in the harbour

*Copenhagen, Denmark*

Copenhagen harbour baths are a result of an extensive cleaning initiative that has rid the water of industrial pollutants and sewage. Bathers can enjoy access to Copenhagen's three harbour baths and two urban beaches all year round.

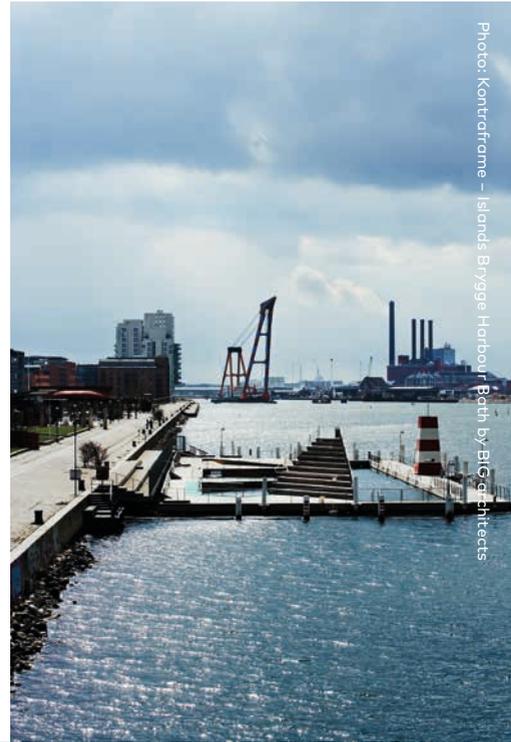


Photo: Kontrastframe – Islands Brygge Harbour Bath by BIG architects



Photo: Kontrastframe – Islands Brygge Harbour Bath by BIG architects



# Resilient City

## Climate change adaptation across actions

The Nordic region utilises a unique balance of adaptation and mitigation practices to safeguard itself against climate change. Focusing on the reduction of greenhouse gas emissions and the management of rain and flood events, the Nordic cities are developing resilience through multifunctional urban spaces, innovative planning tools, and circular ecosystem initiatives.

The Nordic region promotes sustainable urban development with the decoupling of emissions from economic growth. In fact, emissions across the region were reduced by 9% as the total Nordic GDP increased by 55% between 1990 and 2011.



Photo: Daniel Källstrand Modulkoncept AB – Augustenborg

## **Green roofs preventing floods**

*Malmö, Sweden*

Augustenborg has undergone a huge transformation from a deprived residential area with flooding problems to one of Malmö's most popular places to live. Issues with flooding were resolved with the addition of 10,000 m<sup>2</sup> of green roof vegetation and the integration of an open stormwater management system. The green roofs have resulted in a 20% reduction of the total rainwater run-off.



Photo: HANSEN ACHTENBERG LANDSCAPE ARCHITECTS BY GHB LANDSKABSARKITEKTER

## The first climate-adapted square

*Copenhagen, Denmark*

Tåsinge Plads in Copenhagen is part of the city's first climate quarter. Landscaped stormwater bunkers provide adaptation in the form of increased stormwater storage while the overlying green areas provide a multifunctional urban space for recreation with water parasols for children's play, and sloping green areas and benches for relaxation.



# Compact Green City

## **Balancing density and green infrastructure**

Striking a balance between urban density and access to nature is a challenge faced by cities around the world. The Nordic Compact Green City is a model that promotes urban development without compromising the benefits of nature, water, and green areas for urban dwellers. By defining strategic urban/rural boundaries, fostering development around transport hubs, and making clever use of existing urban spaces, the Nordic cities are at the forefront of green infrastructure planning.



Photo: Mørte Garmann - Pilsfædet Park

***“We’ve managed to bring nature into the city. In Stockholm, closeness to water and nature, in Finland closeness to forest. These natural elements are well-integrated into urban development so it is quite a contrast to the urbanity you find outside the Nordic region.”***

*Tina Saaby  
City Architect, Copenhagen*

## **Reusing the best of the past for a bright future**

*Oslo, Norway*

The former hospital area of Pilestredet Park was converted into housing, commercial, and recreational space in 2006. The focus was on reusing existing materials and access to pocket parks and water features in the area.



# Mobility City

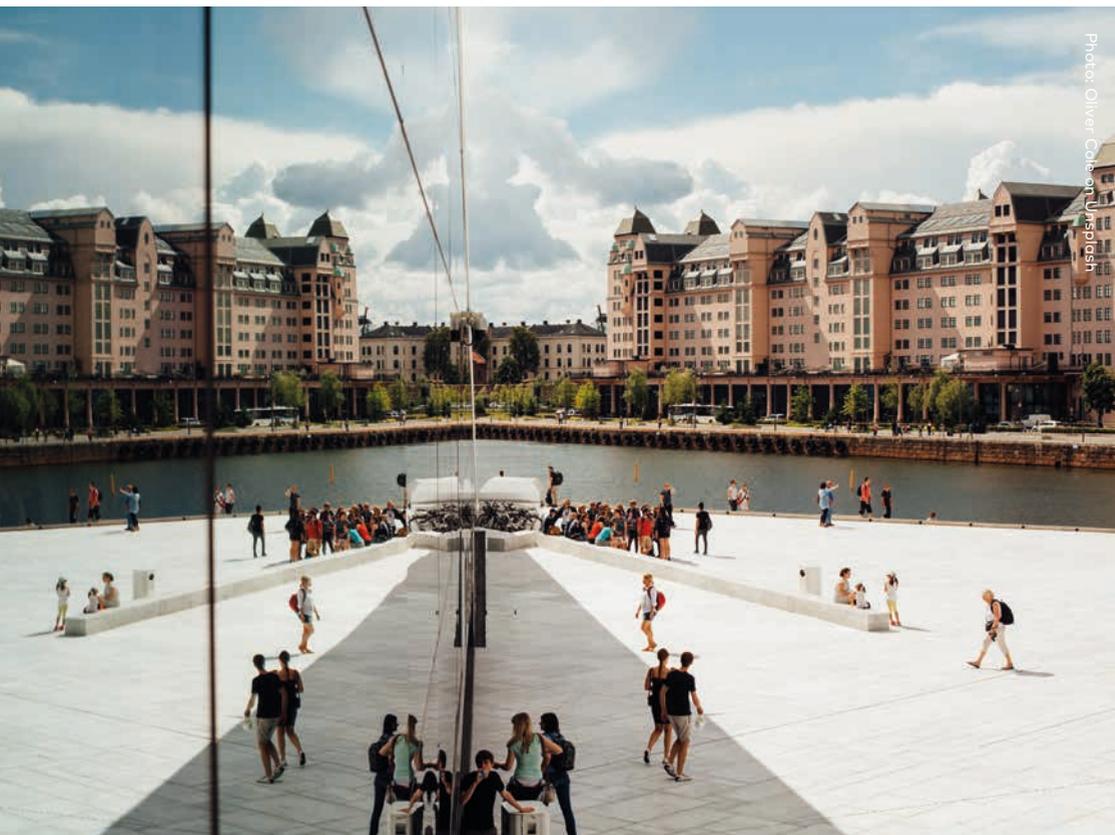
## **Safe and clean transport for all**

Mobility is a key factor in the daily life of people in cities around the globe. The Nordic Mobility City is characterised by its many public and private transport options that are connected, convenient, time- and energy-efficient, affordable, safe and, of course, environmentally friendly.

Nordic cities promote sustainable mobility through rational land use policies and planning. Creating a balance of land uses in any given area, cities are able to incentivise, discourage, or eliminate certain mobility choices. Meanwhile, testing and implementing new technologies provides more efficient and less polluting modes of transport.



Photo: Rasmus Høftsmø — Dissing +Weitling



## **Pedestrians first, cars second**

*Oslo, Norway*

The Oslo city centre will be car-free by 2019. Under development, the city is removing all on-street parking and narrowing car lanes to build new bicycle paths and prioritise pedestrians.



# Low Carbon City

## **Growth without increasing emissions**

Urban areas are home to approximately 85% of the Nordic population. The Nordic Low Carbon City capitalises on the close proximity of urban residents, converging initiatives that reduce emissions without reducing economic growth.

Nordic cities concentrate their low carbon efforts to buildings, transport, and energy. Many buildings are built to exceed the national building standards, multimodal transport networks promote collective journeys, and renewable energy is integrated into the energy supply for industry, residential areas and, increasingly, public transport.

***"No nations have come so far in proving that decoupling ecological degradation and climate change from economic growth is possible, yet still have good living conditions in advanced societies."***

*Andras Simonyi*

*From the book Nordic Ways*

## **The next generation of green buildings**

*Stockholm, Sweden*

Sweden's largest hospital is also its greenest! Achieving LEED Gold standard, the hospital has a dedicated geothermal plant providing 65% of heating and cooling demand.



Photo: Kasper Mørch - Ny Karolinska Hospital by Skanska developers



# Circular Economy City

## Turning waste into a valuable resource

Transitioning a city's operations from a traditional to a circular economy model requires systematic change and an inclusive approach that goes beyond a single company or organisation. Throughout the Nordic region, city authorities, businesses, and citizens are developing innovative ways to increase the potential of products and services.

Designing out waste is a key principle of circular economy initiatives. Businesses find that Nordic cities are increasingly looking to profit from resource efficiency. The materials used to construct new buildings, the recycling of residents' waste, and the energy pulled from sewage networks all contribute to greater efficiency in the existing urban systems.

## Turning old newspapers into facades

Nyborg, Denmark

Using recycled materials at every turn, Upcycle House has reduced its material lifecycle carbon emissions by 86% compared to traditional housing. Facades are made from post-consumer paper, insulation from recycled newspapers, wool and plastic, and flooring from glue-free industrial wood boards.



Photo: Pixabay



Photo: Ditte Valente - Upcycle House by Lemnager Group + Realdania By & Byg



Project: Cedar Knoll  
The House by Lendager Group + Realdania By & By



# Smart City

## **Smart technologies create opportunities for collaboration**

The smart city concept is revolutionising the way cities operate and the way in which people interact with each other and their surroundings. Founded on the Nordic region's long history of communications technology development, city authorities, businesses, and tech savvy citizens are driving change across smart city platforms. Solutions include smart transportation, smart energy grids, and smart waste and water management systems. Empowering people is a key component of Nordic city planning. Digital solutions provide more information to residents and further engagement opportunities in the planning process.



## **A breath of fresh air across the whole city**

*Helsinki, Finland*

Helsinki Air Quality Testbed is the world's first comprehensive city-wide air quality system. The vast range of sensors allow authorities and residents to access real-time air quality measurements. With data available on an open platform, the city hopes for the further development of innovative applications that can improve the quality of life in the city.

## The more ideas the better!

*Reykjavik, Iceland*

Smart platforms are key arenas for collaboration between cities and residents. In Reykjavik, the 'Your Priorities' platform hosts residents' ideas on how to improve the city. So far, over 70,000 contributions have been submitted, resulting in 200 projects, including new road connections, parking, and children's play areas.



Photo: Yodid Levy / Norden



# Design City

## Human-centric and functional urban design

Urban design sets the stage for civic life across cities. From the layout of the local park to the lettering of street signs, every element of the urban environment can affect how people use and experience their city.

The human experience is central across Nordic design thinking. Taking inspiration from Nordic designers, such as Arne Jacobsen, Gunnar Asplund, and Alvar Aalto, the urban environment is based on a clear understanding of the needs and functionality associated with the everyday use of objects. As such, many Nordic urban areas are consistently welcoming, encouraging social interaction, and using public space as a meeting place for all.



Photo: Jeff L. Hume  
AAO/REV



## **An urban space for bankers and skaters**

*Copenhagen, Denmark*

Taking inspiration from the Swedish landscape, the space between SEB Banks' two buildings in Copenhagen has been transformed into a multifunctional urban space. Rising from street level, the park area uses trees, grasses, ferns, and mosses to create a 'Nordic' feel while encouraging recreation, even providing skateboard friendly slopes and ledges.





Nordic Sustainable Cities is one of six flagship projects under the Nordic Solutions to Global Challenges initiative, which is coordinated by the Nordic Council of Ministers.

Nordic Solutions to Global Challenges is an initiative by the prime ministers of the most integrated region in the world. The Nordic region promotes sustainability and progress towards the UN Sustainability Goals, sharing knowledge of three themes: Nordic Green, Nordic Gender Effect and Nordic Food & Welfare.

