



Hamburg — European Green Capital: 5 Years On

The City takes it further



CONTENT

I. Overview	5
II. Green City of Well-Being.....	6
III. The Path to becoming a Green Capital	7
IV. Hamburg's Year as European Green Capital: Programme and Objectives	8
V. Assessment and Long-Term Developments	14
All eyes on Hamburg.....	14
Hamburg as a business location	15
Hamburg as a travel destination.....	15
Hamburg and the European Commission	16
Hamburg and other European Cities	16
Influence on the culture of participation and debate.....	16
VI. Hamburg's Population is Growing: Opportunities and Challenges	
for the Environment and Climate Protection.....	18
Ambitious goals: Climate Protection and Climate Change Adaptation	19
The city sets an example – energy-efficient retrofitting of public buildings	21
Hamburg's Green Roof Strategy	21
Severe cloudbursts without severe damages	22
Hamburg: a Forerunner of the Energy Transition.....	23
NEW 4.0 North German Energy Transition	23
HAMBURG ENERGIE: the city's own utility company	23
Remunicipalisation: the city as a network operator	24
The Grid Advisory Council: transparency and participation	25
Energy Bunker and Energy Hill: transforming contaminated sites into showpiece projects.....	25
Hamburg protects its Green and Natural Resources	27
Integrating nature protection and parks	27
Hamburg's natural resources	28
Hamburg strengthens its position as No. 1 in the country for nature reserves	28
Hamburg's outpost in the Wadden Sea.....	28
Hamburg is getting greener –	
more and better green spaces for more citizens in Hamburg.....	29
The world's largest park cemetery reinvents itself.....	30
From igs 2013 to the new sports park.....	31
More money for street trees; every tree at a click	31

Hamburg grows further: people-oriented and climate friendly	32
Leap across the Elbe	32
HafenCity Hamburg – a sustainable city of the 21st century	33
Allotment gardens in place of concrete: a green cover over the motorway	34
Save and recycle rather than waste	35
Hamburg is also stepping up its efforts to protect its natural resources	35
Plastic waste at the port instead of in the sea	35
Recycling – an area that needs improving: Hamburg is catching up	36
Green Procurement Guidelines make Hamburg a purchasing pioneer	36
Air quality: this is where Hamburg must take action	38
Cleaner air at the port	39
Noise mitigation requires action	39
Transport transition helps tackle air pollution and noise, and helps protect the climate	40
Increasing the share of bicycle traffic to 25 per cent	40
Expanding bus and train transport eases road congestion	41
The waterfront city	42
Flood control: foresighted planning based on painful experience	43
The Elbe Habitat Foundation – a successful alliance for the Elbe	43
The return of fish	44
Participation: citizens have their say	45
Cooperation between industry and the city benefits climate and the environment	46
Eco-Partnership – involving 1,000 companies	46
Companies for Resource Protection – the name says it all	47
Companies act as “ambassadors” for clean air	47
Hamburg, the wind energy capital	48
A sustainable city	48
Hamburg as a “developing country”:	
Agenda 2030 and the Sustainable Development Goals	49
Francop disposal site as a public recreational area with a mountain bike course	49
Movement in public spaces: sport in the park	49
Sustainable major events	50
VII. Conclusion: Recognition and Incentive	51

Dear Friends of Hamburg

At the end of April, Hamburg's environment administration gained 200,000 new members of staff: four bee colonies have found a home on the roof of my ministry. The new building, which the Ministry for Environment moved into in 2013, is a symbol for how we in Hamburg seek to retain the momentum generated by the city's year as European Green Capital. After all, it features green roofs and a high energy standard, and is located in a part of our city that was long neglected.

Once again, Hamburg has ambitious plans. On the occasion of the 2015 Paris Climate Conference, we set ourselves the goal of halving our carbon emissions by 2030. We intend to double the share of bicycle traffic in future years. And we are working towards transferring Hamburg's distribution network for district heating – one of the largest in Europe – back in the hands of the local authorities, facilitating the energy transition in the area of heat supply.

These projects are sustained by the same convictions on which our application to become European Green Capital 2011 was based: that modern cities have the potential to resolve our global environmental problems, and that a high environmental quality also means a better quality of life for our citizens.

We will be able to harvest our first honey in June. However, a glance out of my window at the bees reminds me of the fact that a lot of diligence and joint efforts will be required for us to achieve our goals.

Jens Kerstan

Senator for Environment and Energy
of the Free and Hanseatic City of Hamburg



I. OVERVIEW

The European Commission awarded Hamburg the title European Green Capital 2011, making it the second European city after Stockholm that was permitted to use this title. Hamburg beat off rival bids from 34 other European cities.

By creating this brochure, Hamburg Ministry for Environment and Energy complies with the European Commission's request to provide an overview of developments since Hamburg's year as European Green Capital. Brief information is given on how Hamburg became European Green Capital, and which activities took place during its year as European Green Capital (a more detailed report was drawn up in 2012 in the form of the final documentation). This brochure focuses on presenting a number of environmental policy projects and measures that have been initiated since 2011. In view of the large number of measures taken, we confine ourselves to selected measures; the report is not exhaustive.



II. GREEN CITY OF WELL-BEING

With a population of almost 1.8 million, Hamburg is the second largest city in Germany. Over 5 million people live in the Metropolitan Region of Hamburg. Hamburg is the quintessential 'green waterfront city', featuring a multitude of nature reserves, parks and green spaces, as well as the Alster and Elbe water bodies. Green spaces, recreational areas and forest make up 16.5 per cent of the metropolitan area. Nature reserves make up almost 9 per cent of the urban area; areas of protected landscape cover a further 19 per cent. At the same time, however, Hamburg is also an industrial city with Europe's third largest port and Germany's fifth largest airport.

The City of Hamburg is growing. Forecasts predict that up to 1.9 million people will be living in Hamburg by the mid-2030s. This presents Hamburg with very specific challenges in social and environmental policy. Traffic, industry and wealth are still accompanied by problems concerning air quality, noise, land use and carbon emissions. Other ongoing challenges faced by Hamburg include threats to social cohesion and the rise of rent levels and prices in general.



III. THE PATH TO BECOMING A GREEN CAPITAL



Initially, Hamburg had applied for the title in order to find out whether and how well advanced the city was with regard to urban environmental and climate protection in comparison with other European cities. The competition also gave Hamburg the opportunity to share best practices in environmental protection with other European metropolises, and to learn from them in turn. Another motivation for applying for the title was to position Hamburg internationally as a green metropolis offering a high quality of life. In February 2009, Hamburg was designated "European Green Capital 2011" by the European

Commission. Stockholm was declared European Green Capital 2010 at the same time. Hamburg scored the highest number of points of all 35 participating European cities. This outcome was primarily due to the consistently high scores Hamburg gained in all environmental indicators.

By accepting the title, Hamburg agreed to implement the programme presented in the bid and to develop a communication strategy in accordance with EU regulations.

IV. HAMBURG'S YEAR AS EUROPEAN GREEN CAPITAL: PROGRAMME AND OBJECTIVES

Having been awarded the title of European Green Capital, Hamburg had set itself the goals of advancing its own environmental protection in a sustainable fashion and of conceptually developing its environmental policy, and doing it in dialogue with like-minded members of the European public. Additional objectives included raising environmental awareness in Hamburg and other European cities; publicising Hamburg as European Green Capital 2011 both locally and nationally as well as Europe-wide; and developing new ideas and giving fresh impetus for the years to come and for future Green Capitals. These objectives were to be achieved during Hamburg's year as European Green Capital through a number of different aspects of the programme.

For example, the Info Pavilion, located at the Central Station, acted as a central meeting point for citizens of Hamburg and visitors alike, providing them with information about events, publications and the European Green Capital itself. Ten additional information points were also installed across Hamburg and its Metropolitan Region where visitors could discover more about the Green Capital's central themes. In 2011, a total of over 36,000 people visited the Info Pavilion alone. The Info Pavilion was also used by the International Garden Show in Wilhelmsburg between 2012 and 2013; almost all of the other information points have continued to be used after Hamburg's year as European Green Capital.

Environmental tours gave people the opportunity to explore the green spaces of the Hamburg metropolitan region and to discover local nature conservation and environmental protection projects. In addition to the "City Tour – Hamburg

for Green Explorers", numerous partners from industry, academia, environmental associations and other institutions also offered their own special tours. In total, the official guided tours were enjoyed by over 12,000 people.



Among other things, the Train of Ideas met the European Commission's requirement to involve the residents of other European cities in Hamburg's year as European Green Capital. The rolling exhibition, consisting of seven carriages, visited a total of 17 cities in ten European countries in addition to Hamburg. In ten cities (Malmö, Gothenburg, Zurich, Riga, Vienna, Barcelona, Marseille, Nantes, Paris and Antwerp), the Train of Ideas' destination was the train station; in the other seven cities (Copenhagen, Oslo, Munich, Warsaw, Tallinn, Brussels and Amsterdam), a suitable alternative was found in a public space. Representing Hamburg, the First Mayor, the Second Mayor, the Senator for Urban Development and the Environment, and Councillors of State of the Senate Chancellery and of what was then the State Ministry for Urban Development and the Environment opened the exhibition in the individual cities. Many of the cities arranged special corresponding events to mark the arrival of Hamburg's Train of Ideas.



The Train of Ideas leaves Hamburg for Copenhagen

In addition, high-profile debates were held in nine cities with representatives from the respective host city.

The exhibition in the Train of Ideas focused on the challenge of how European cities of the future can be shaped in a sustainable, environmentally friendly manner, while at the same time making them a desirable place to live. The presentation

of projects from many European cities was a consistent feature of the interactive, educational exhibition, which took a hands-on, thought-provoking approach. A further aim of the Train of Ideas was to raise international awareness of Hamburg as a Green Capital, with its innovative projects and concepts, and as a green, waterfront metropolis for tourists and companies. The Train of Ideas attracted over 70,000 visitors, by



Visitors inside the Train of Ideas



far exceeding its own goal of 40,000. In addition, nearly 16,000 more people (especially school groups) visited the Train of Ideas in 2013, which had been a fixed element on Harburg's Schlossinsel during the presentation year of the International Building Exhibition IBA 2013.

The programme of events included activities for a demanding, specialised audience, as well as for interest groups and the general public. They were carried out and partially funded by the city or in collaboration with a variety of partners. In addition, numerous events were organised independently of the city that were included in the calendar of events and integrated into the Green Capital programme nonetheless. In all, the programme contained almost 2,000 event listings.

Examples included a launch event, an opening event for the public, the Environmental Youth Summit and the environmental tour dates. A number of events, such as the International Environmental Law Conference, were held regularly in subsequent years.

A new series of events was created on the occasion of being named European Green Capital. Over the course of eight European Green Capital Dialogues, citizens of Hamburg were invited to discuss with experts the central environmental issues affecting the city, such as climate protection, stormwater management and sustainable consumption, in order to inspire new approaches and to produce results through dialogue. Altogether, some 1,600 guests attended the eight

discussions. After each dialogue, participants had the opportunity to continue debating via an internet discussion group.

The aim of the communication activities was to further raise the public's awareness of environmental issues and to harness the increased public interest in order to further advance urban environmental protection in an open discourse with citizens and the European public with a special interest in this area. Hamburg was also to raise its profile all over the world as European Green Capital. The official EU logo was used in all communication activities. In addition to the EU logo, a key visual logo was created that stood for Hamburg's citizens' love of their city, in this case the "green" city. This logo offered scope for identity and leeway without having to adhere to the tight constraints governing the EU logo.

Many messages were communicated in publications such as an environmental magazine, brochures on the Train of Ideas, calendars of events, posters and press releases.

Online communication took place via a dedicated official website in German and English (which attracted around 11,000 visits per month) as well as social networks (the Facebook page had over 3,860 fans at the end of 2011). Key events were also posted on the general City of Hamburg Facebook page, which had over 500,000 fans in 2011.

A number of Hamburg daily newspapers published editorial features on relevant key areas of the Green Capital on their own initiative (with

a media value of around €830,000). One national newspaper featured "environmental heroes" and presented awards to them at a grand gala.



Announcement in Barcelona

International communications, including international press activities for the Green Capital, were conducted in cooperation with Hamburg Marketing GmbH. A central connecting factor within international communications, but by no means the only one, was the Train of Ideas. The Train's tour to other European cities and the attention it attracted was used to inform people about Hamburg as the Green Capital, as well as to communicate other facets of the city, such as Hamburg as a commercial and industrial metropolis and a creative city, or Hamburg as a tourist destination. In addition to these measures, the topic was actively positioned in the international media beyond the countries where the train visited.



Green Capital Challenges Discussion with the then EU Director-General for Environment in Brussels

National and international media reporting between October 2010 and December 2011 was documented and assessed. The 6,600 or so national media reports in the print sector alone achieved an estimated readership of over 380 million. International media monitoring recorded a total of around 1,200 media reports. As a result, the authentic image of the city as an innovative, sustainable metropolis offering a high quality of life was conveyed and became established globally.

Both international and national media reporting was largely positive. In the local Hamburg media, lively debate was conducted on the expectations and successes of Hamburg's year as European Green Capital. The discussions

mainly reflected the different positions taken by environmental associations, representatives of industry, and citizens with regard to the title and the measures associated with the European Green Capital.

Hamburg made use of a number of national and international events to present itself as European Green Capital. To mark Hamburg's year as European Green Capital, numerous international delegations, groups of visitors and international (groups of) journalists were welcomed to Hamburg. In all, Hamburg was visited by approximately 80 international groups from around the world with a connection to environmental protection.

Collaboration with the European Commission was undertaken constructively and in a spirit of mutual confidence, both during the preparatory phase and throughout the whole year. The European Commission organised various joint events such as a panel discussion at the EXPO Shanghai with the City of Stockholm and the opening of the Train of Ideas in Brussels. To mark Hamburg's year as European Green Capital, many top-ranking representatives of the European Commission also attended Green Capital events.

Collaboration and exchange with other cities were a great success during Hamburg's year as European Green Capital. Events were held in collaboration with the cities visited by the Train of Ideas and with the other Green Capitals of Stockholm, Vitoria-Gasteiz and Nantes. On the

occasion of the Intelligent Cities Expo trade fair and conference in November 2011, political representatives from all the other Green Capitals at the time with their respective delegations met in Hamburg. In addition to exchanging information, the representatives became acquainted with major urban projects relating to the environment and the challenges associated with them. Many of Hamburg's green activities, ideas and event formats were met with interest. For example, Vitoria-Gasteiz adopted Hamburg's idea of the Eco-Partnership as a new initiative for the city's environmental programme. Hamburg also cooperated with European city networks.

The European Green Capital programme was fully financed by the City of Hamburg to the tune of €8.7 million. Sponsoring generated a further €1.1 million in cash funds as well as benefits in kind worth €1.2 million (before tax). The European Green Capital Hamburg 2011 project was delivered just under budget.

V. ASSESSMENT AND LONG-TERM DEVELOPMENTS

When assessing Hamburg's year as European Green Capital, one reaches a positive result. The self-defined goals of the programme, namely to raise awareness of environmental protection in the city, to publicise Hamburg as a green metropolis and to specifically advance environmental protection, were achieved. The city carried out the programme in its entirety and within budget, which, considering the technical and logistical challenges of a project such as the Train of Ideas, is no mean feat.

Hamburg's year as European Green Capital also enabled the city to position itself internationally as a city that offers a high quality of life. This was evident in the extensive and positive coverage of Hamburg in the international media. Following Hamburg's year as European Green Capital, the city was and continues to be perceived as a "green", sustainable, environmentally conscious and innovative city in which economic growth and sustainability are reconciled and where jobs

are created thanks to ingenious solutions and "green" technology.

Five years after Hamburg's year as European Green Capital, the title of Green Capital has since become recognised at European and international levels as a seal of quality synonymous with high standards of environmental awareness, a high quality of life, and innovative solutions in the cities that hold the title. This development has been helped by widespread national and international reporting about the achievements and activities undertaken in the eight European Green Capitals, as well as collaboration between these cities and with the European Commission.

1. All eyes on Hamburg

Hamburg has attracted attention in the international media not only as a "green" city, but also for other reasons as well.





Even five years after Hamburg's year as European Green Capital, media enquiries, delegations and conferences demonstrate that Hamburg is in demand more than ever on topics relating to the European Green Capital. Even now, some enquiries explicitly refer to the fact that the interest in Hamburg was triggered by the title European Green Capital 2011. Most often, however, they mention Hamburg's solutions and projects in the fields of climate and environmental protection, which have gained worldwide acclaim. International groups with a specific issue to address looking for a city with a wealth of experience in this area may well narrow down the options by searching for the term "European Green Capital".

Hamburg as a business location

Such reports, as only one of many factors, may spark the interest of international investors, drawing them to Hamburg as a potential location for commercial activities in Europe or Germany. In times of skills shortages, a company's location has an impact on its attractiveness. Such issues as the quality of life in a city, including other desirable aspects such as safety and a good educational system, often play an important role in location decisions.

Hamburg as a travel destination

The number of tourists visiting Hamburg has been increasing continuously for years. Over the past five years, overnight stays by visitors from abroad increased by 11 per cent on average, reaching the current level of 3.1 million. This in turn has meant an increase in the proportion of overnight stays by visitors from abroad by 24.5 per cent. The growing number of overnight stays by visitors from abroad is due to several factors, such as a wide range of cultural and sporting events, shopping opportunities, and good accommodation facilities. One important reason for Hamburg's growing popularity as a travel destination is also the quality of life that can be enjoyed in the city. In addition to urban development projects such as HafenCity, Hamburg offers city tourists a wealth of opportunities for recreation in parks, green spaces and water bodies close to the city centre.

Increasing the number of tourists was not an explicit aim of the European Green Capital project. In the end, however, this positive coverage about Hamburg in the role of European Green Capital enhanced Hamburg's image abroad as an attractive tourist destination. This perception has been reinforced by the title of European Green Capital and its associated activities, particularly at the international level. After all, for a

long time, Hamburg was merely regarded internationally as a “grey” industrial city with a port, and not really as an attractive tourist destination.

Hamburg and the European Commission

The city was also praised by the European Commission for implementing the European Green Capital year. The EU Environment Commissioner called the city a “shining example” for future Green Capitals. This close collaboration led to the European Commission recognising Hamburg for its commitment to reconciling commercial and environmental protection interests, and as an example that could be followed by other cities. In recent years, Hamburg has increasingly been asked to participate in events hosted by the Commission or in invitations to tenders for funding opportunities. Ultimately, Hamburg’s status as a European Green Capital has underpinned its collaboration with the European Commission in a spirit of mutual confidence.

In times of scarce public resources, EU funding plays an increasingly important role. Reference to its title of European Green Capital has enabled Hamburg, in applying for grants, to demonstrate its suitability for funding, as recognised by the funding agencies. This seal of quality plays an even more important role in the search for partners for EU projects. Potential partners use the title as a pre-selection criterion.

Hamburg and other European cities

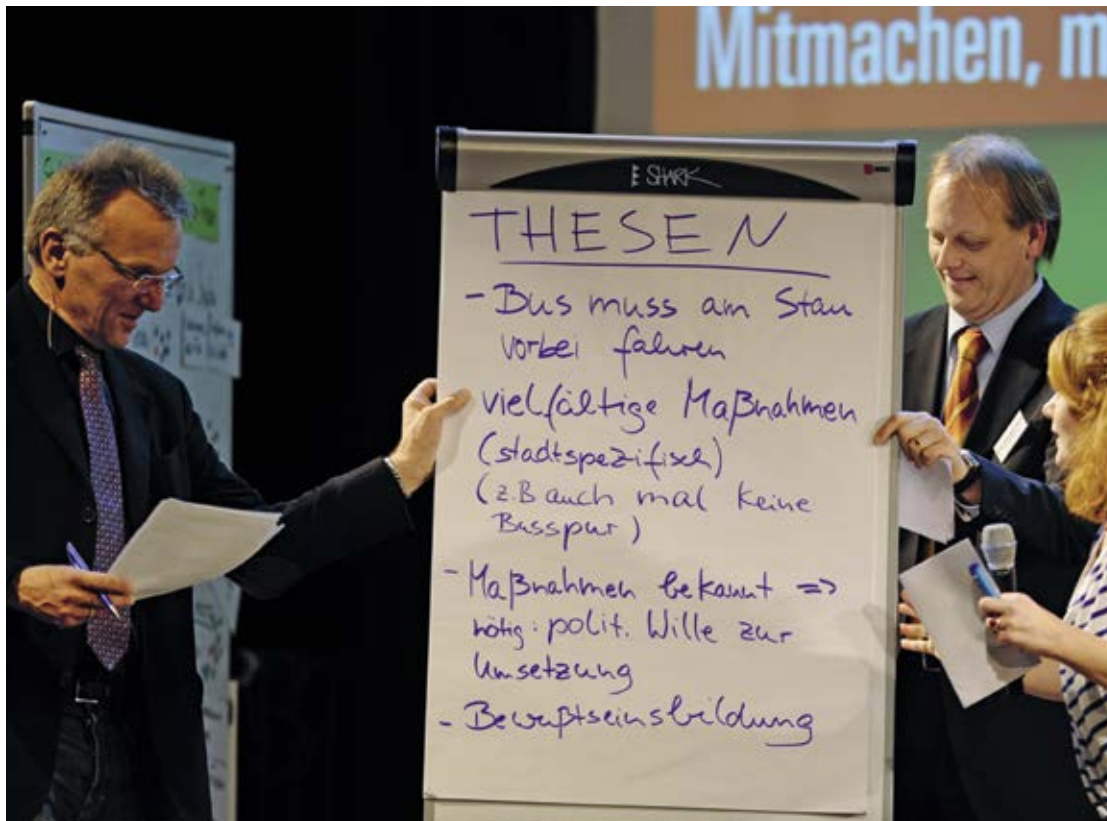
Even five years after Hamburg’s year as European Green Capital, the city relies on its international contacts and international exchange on urban environmental and climate protection issues. Collaboration with the seven other Euro-

pean Green Capitals and the even larger number of finalists has intensified thanks to the informal network. Hamburg now has particularly close contacts to its partners Copenhagen, Stockholm, Nantes and Bristol, evident in the large number of visits by delegations and joint participation in panel discussions. Open, honest exchange on similar challenges faced by the cities is also characteristic of Hamburg’s collaboration.

Ultimately, cooperation between the European Green Capitals also has a positive effect on the joint acquisition of funding. A number of grant applications for environmental and climate protection projects involving the European Green Capitals or finalists have already been submitted.

2. Influence on the culture of participation and debate

The topic of environmental protection was debated enthusiastically within the city as well. This was reflected by the European Green Capital Dialogues, which were very well attended by the public, and by the many debates conducted in Hamburg’s media. In so doing, the European Green Capital status offered a platform for discussion ranging across widely diverging viewpoints. For instance, a number of environmental associations criticised Hamburg Senate’s environmental actions and policy, with express reference to the Green Capital. Citizens drew attention to grievances, e.g. concerning waste disposal in their neighbourhoods or the lack of cycle paths or the poor quality of existing paths. Wherever possible, these grievances were addressed. Concerns voiced by areas of the economy that the title would encourage Hamburg to



directly or indirectly discriminate against companies in the environment's favour were allayed. On the contrary, cooperation between the city and industry was improved even further, for example, in new projects within the Eco-Partnership. Environmental and industrial associations expressed different opinions on the appropriateness of certain companies as sponsors for the programme.

All in all, the intense environmental policy discourse during Hamburg's year as European Green Capital made an important contribution to advancing the city's environmental agenda and a culture of participation.

VI. HAMBURG'S POPULATION IS GROWING: OPPORTUNITIES AND CHALLENGES FOR THE ENVIRONMENT AND CLIMATE PROTECTION

Five years after its year as European Green Capital, Hamburg still stands for being a sustainable city, addressing the challenges of urban environmental and climate protection. Time and again, Hamburg has made it clear that its year as European Green Capital was merely a partial victory that the city sees as an incentive to continue developing further.

Hamburg has been a very popular city for many years. As a result, its population is growing steadily. Forecasts predict that up to 1.9 million people may be living in Hamburg by the mid-2030s. The population in the metropolitan region is also expected to grow by up to 20 per cent by 2045. As in other cities, the number of refugees seeking protection in Hamburg has also increased substantially in recent years. While the number of people seeking refuge and requiring at least temporary accommodation was just

under 1,000 in 2011, this figure rose to 22,000 in 2015. As a city-state, Hamburg is faced with the challenge of it becoming increasingly difficult to accommodate refugees within its state boundaries, due to the lack of appropriate land and buildings. Integration issues must also be tackled.

For the City of Hamburg, the overall growth means that the housing supply and urban infrastructure for transport, cultural and social facilities, energy supply and stormwater, and so on have to be expanded accordingly. And not only that: in tackling these issues, nature conservation, climate protection and the environmental quality must be further improved.

Against this backdrop, the city has developed ground-breaking projects and strategies in recent years in a bid to align the needs of the growing city





with the interests of environmental and climate protection. Some measures were not implemented due to a change in government, or they were adapted to new findings. For example, the city ultimately decided not to pursue the introduction of a light railway system any further. Instead, the Parliament passed a resolution to modernise and speed up the bus system and to expand the underground railway, which would improve air quality and create more sustainable public transport options.

The growing population also presents climate and environmental challenges when it comes to building homes.

In Hamburg, there is great demand for the limited supply of available housing. One million homes are to be made available in Hamburg by the early 2020s. The city has set itself the goal of approving and building 10,000 apartments each year. Of these, 3,000 should be state-subsidised rental apartments for low-income and middle-income households. The number of permits has been increasingly steadily since 2011; in 2015, building permits were granted for just under 10,000 residential units.

In the process, inner urban development must have a higher priority than development in the outer zones; space-wasting construction, vacant buildings and misuse must be curbed effectively.

Quality objectives for inner urban development include more efficient use of land; preferred use of land earmarked for conversion; and urban density with high-quality open space. However, these targets must not detract from the objectives of retaining existing green areas and open spaces and of setting ambitious environmental and energy standards in new and existing buildings. The city has responded to this difficult balancing act by setting standards for investors and compensatory measures. In this respect, the city has pursued innovative funding approaches. For example, there are plans to finance the preservation of natural capital via the increase in value generated by the altered land use.

In the future, Hamburg will continue to take a leading role as a green city with a high quality of life for all its residents.

3. Ambitious goals: climate protection and climate change adaptation

By reaching the Paris Climate Agreement at the end of 2015, the world community gave a binding commitment for the first time to make every effort to combat climate change. The commitment to the goals of limiting global temperature rise to well below 2° Celsius above pre-industrial levels and of achieving greenhouse gas neutrality in the second half of the century is a positive signal for society and the global economy.

However, climate protection can only be successful if every country, every region and every city takes responsibility for its actions. The German Meteorological Service (DWD) has computed the consequences of climate change for Hamburg up to 2050. According to this estimate, Hamburg must reckon with significantly more severe cloudbursts, twice as many hot days with the temperature exceeding 30° Celsius, more storms in general and, all in all, more rain. This climate simulation once again clearly shows that Hamburg must adapt to these changes in a wise and farsighted manner, in spite of the necessary densification. Hamburg also has to continue to significantly reduce its carbon emissions.

The ambitious objectives of Hamburg's Climate Action Plan 2007-2012 at the time were one of the main reasons why Hamburg was nominated as European Green Capital 2011. Hamburg's Climate Action Plan was successfully completed at the end of 2012. Unfortunately, the carbon footprint had to be corrected for 2011 and 2012, due to a company providing inaccurate information about its consumption of refinery gas. This meant that the emissions reduction relative to 1990 levels decreased less than anticipated, achieving 11 per cent rather than 15 per cent. Nonetheless, by managing to reduce carbon emissions by 2 million tons as compared with 2007, the main objective of the Action Plan was met.

The Climate Action Master Plan, representing the continuation of the Senate's climate policy, was adopted in 2013. In addition to Vision 2050, with the aim of reducing carbon emissions by at least 80 per cent by 2050, the Master Plan contained short-term and medium-term measures

in what was termed its Action Plan 2020; these measures will enable Hamburg to make its contribution to the national goal of reducing carbon emissions by 40 per cent. The Action Plan to adapt to climate change thus complemented the Climate Action Master Plan.

In parallel to the climate negotiations in Paris, Hamburg adopted its climate action plan with the ambitious resolution to halve carbon emissions by 2030 as compared with 1990 levels. In addition, by 2020, Hamburg is attempting to curb the emission of two million tons of carbon dioxide as compared with 2012, which is in line with the savings set out in the Climate Action Plan 2007–2012.

In addition to setting climate objectives, the Climate Plan 2015 describes a strategy that combines climate protection with adaptation to climate change, and that sets cross-sectoral objectives and measures, such as integrated, climate-friendly urban and district development, for the first time.

Examples of climate protection measures include:

- » Hamburg has set itself the goal of making the state administration largely carbon neutral by 2030 or, failing that, to compensate for its carbon dioxide emissions.
- » Renovation concepts and roadmaps for city-owned buildings will be drawn up by the end of 2017.
- » Underground and suburban railway lines will be expanded, electric mobility promoted, and low-emission buses deployed. The proportion



of electric cars in the fleets of public authorities will double to 50 per cent by 2020.

- » The share of bicycle traffic in the transport sector will double to 25 per cent sometime in the 2020s.
- » More educational work will be performed at schools and for adolescents in a bid to encourage younger generations to actively contribute to climate protection.

Examples of adaptation measures from the Climate Plan are:

- » Flood control and protection against storm surges will be intensified.
- » More climate-resilient trees and plants will be grown in the city.
- » The Rain InfraStructure Adaption (RISA) project will be implemented in order to counter inland flood events and flooding due to severe cloudbursts. This includes, for example, the expanded use and promotion of green roofs.

The city sets an example – energy-efficient retrofitting of public buildings

In order to achieve its own climate change mitigation targets, Hamburg is investing in energy rehabilitation and technology in city-owned buildings.

The Senate has called for the extensive energy-efficient retrofitting of public buildings by 2050. In order to be able to coordinate these measures more effectively in the future, rehabilitation concepts and roadmaps for city-owned real estate will be drawn up by the end of 2017. The aim of the rehabilitation roadmaps is to reduce the final consumption of energy by 30 per cent by 2030 and primary energy consumption by 80 per cent by 2050 as compared with the consumption figures related to the actual buildings from 2008. A rehabilitation roadmap and energy management measures have already been drawn up for Hamburg's schools, set out in the School Construction Framework Plan.

Hamburg's Green Roof Strategy

Hamburg is to become even greener – from the top down as well: the Hanseatic City was the first city in Germany to develop its own comprehensive Green Roof Strategy. The objective is to create 100 additional hectares of green roofs in the urban area by 2020. This area corresponds to around twice that of the famous Planten un Blomen city park. The aim is to virtually exhaust the potential for creating 44 hectares of green roof on new residential buildings, as well as 66 hectares on new commercial buildings over a five-year period. Twenty per cent of the new



green areas are to be open to residents or employees as new productive and recreational areas in the form of sports grounds, parks or communal gardens. The Ministry for Environment and Energy has agreed to provide €3 million in funding by 2019 to promote the construction of green roofs. Building owners may be awarded non-repayable grants up to a maximum of 60 per cent of production costs. Thanks to the capacity of green roofs to retain rainwater, the owners of such buildings then benefit by having to pay half the usual amount for precipitation water charges. Maintenance costs are also lower because green roofs last twice as long as conventional flat roofs. Green roofs can help provide greater thermal insulation in winter and shield buildings from heat in summer. This reduces energy costs and creates a pleasant climate on the top floor. The project was initiated by the Ministry for Environment and Energy in cooperation with HafenCity University.

Severe cloudbursts without severe damages

The impacts of climate change threaten to bring about more frequent occurrences of severe cloudbursts in the future. The need to build up to 10,000 new homes per year and the development of industrial areas inevitably cause increased densification, leading to an increase in surface sealing.

In order to be better prepared to counter potential flooding and overflowing sewers, less stormwater should enter the city's drainage systems in the future. Instead, rain in Hamburg should

be retained where it falls, soaked up or should evaporate on site. This is one of the findings demonstrated in early 2016 by the joint project Rain InfraStructure Adaption (RISA) in its Structure Plan Rainwater 2030. This document contains cross-disciplinary and cross-administrative objectives and recommendations for dealing with stormwater in Hamburg in the future.

In order to relieve the drainage infrastructure, specific measures will be taken to adapt the previous drainage systems, which should then pave the way for even more thorough modifications.

In the urban district of Volksdorf, for example, a meadow is to be used as natural lowland where excess stormwater can be absorbed, preventing uncontrolled flooding. The site will be designed to ensure that water will only fill the meadow temporarily before seeping away. The meadow will otherwise continue to be used as a playing and sunbathing area. This measure therefore also contributes to the adaptation to climate change because the increased evaporation has a cooling effect, especially on hot summer days.

The city is also endeavouring to integrate modern stormwater management in its urban development. After all, it is not the first time that Hamburg has led the way in this area: it was the first city on the European continent to have a centralised sewerage system.



4. Hamburg: a forerunner of the energy transition

Climate change and, more recently, the reactor disaster in Fukushima in 2011, have radically changed energy policy in Germany. Since then, there has been social and political consensus to, at last, abandon nuclear energy. By 2050, 80 per cent of Germany's electricity production is to be generated from renewable sources.

The energy transition is one of the central areas of activity for Hamburg, too. Hamburg has set a goal for itself to make its energy supply more sustainable, climate-friendly and focused on the common good.

For Hamburg, the energy transition is both an opportunity and an obligation. With 1.8 million inhabitants and a strong economy, the city needs considerable amounts of electricity and heat. For this reason, Hamburg must also contribute to achieving Germany's climate objectives.

The city is pressing ahead with the transformation of its energy supply. In the process, Hamburg is focusing on three areas of key strategic importance in reducing energy consumption by achieving greater energy efficiency, intro-

ducing smart grids, and promoting more energy from renewable sources.

NEW 4.0 North German Energy Transition

Together with Schleswig Holstein, Hamburg is becoming a beacon for a sustainable energy economy in Germany. Starting in the second half of 2016, the two northern German federal states will jointly demonstrate how 70 per cent of the region's energy needs can be met using renewable energy by 2025 through the North German Energy Transition (NEW 4.0) project. This will be achieved by intelligently coupling electricity generation with electricity storage and consumption.

More than 60 North German partners from industry and science have joined forces in the project funded by the federal government, forming an innovation alliance with the support of both federal states' governments. The model region, where around 700 companies in the renewable energy sector employ some 40,000 people, has extensive experience in this field. The goal of the project is to demonstrate that the entire region can be reliably and affordably supplied with power having a high share of renewable energy. By synchronising the fluctuating production from renewable energy sources with consumption, i.e. by intelligently connecting consumption and making it more flexible, the complete integration of renewable energies in the pilot region will become apparent.

HAMBURG ENERGIE: the city's own utility company

The power supply in Hamburg was privatised in the 1990s. Today, Hamburg has its own



municipal electricity supplier once again. Since 2009, HAMBURG ENERGIE has been offering its customers climate-friendly, coal-free, nuclear-free energy as well as gas products with a high proportion of biogas. Serving more than 100,000 customers, HAMBURG ENERGIE is now one of the key suppliers in the city.

In addition to commercial business, HAMBURG ENERGIE has also developed into an innovative energy generator, especially offering solutions in the area of renewable energies and combined heat and power.

Remunicipalisation: the city as a network operator

One of the key projects is the reacquisition of the energy grids. As early as 2008, the city's options for buying back the grids were examined.

First of all, the city acquired a 25.1 per cent share in the electricity and gas grids as well as the heating grid. In a September 2013 referendum, however, the citizens decided that the City of Hamburg should completely buy back the electricity and gas distribution networks, as well as the supply of district heating. At the same time, they resolved that the city should meet the objective of ensuring a climate-friendly supply of energy on the basis of renewable energy technologies.

The electricity grid has been owned fully by the city since the beginning of 2015. Upon granting the electricity concession, the city and Stromnetz Hamburg GmbH concluded a cooperative agreement, which is the foundation of energy policy and energy management collaboration between the city and Stromnetz Hamburg. The



goal of this agreement is to help maximise room for manoeuvre in the interests of a secure, affordable, consumer-friendly, efficient and environmentally compatible power supply and to do so in the context of various projects. These include activities leading to the development of a modern smart grid, the successive introduction of intelligent metering and measurement systems, the expansion of Hamburg's Energy Efficiency Platform, and the development of a recharging infrastructure for electrical vehicles in Hamburg.

In 2018 and 2019, the city will exercise its options for the reacquisition of the gas grid and the supply of district heating. Until then, the city will remain a minority shareholder with a 25.1 per cent stake.

An important course will be set in 2016 with regard to the supply of district heating. The largest power generation unit located in Wedel, which supplies around 140,000 households in West Hamburg with heat from hard coal, needs to be replaced. By changing from coal to gas and renewable energies, the city intends to take its first step towards decarbonising its district heating. In the long term, zero-carbon district heating would be Hamburg's most important contribution to achieving its climate change mitigation target for 2050.

The Grid Advisory Council: transparency and participation

The newly formed Energy Grid Advisory Council will provide advice on decisions concerning the replacement for the coal-fired combined heat and power plant in Wedel. By appointing an Energy Grid Advisory Council, the Hanseatic City is blazing a new trail of participation in energy policy. The council includes representatives from environmental associations and initiatives, chambers, industry and trade unions, academia and the parties in the Hamburg Parliament. These members will provide advice to Hamburg's administration and, in turn, will be kept informed by it. Thanks to the council, the expertise of specialists, initiatives and industry will be incorporated into the city's energy policy in the future.

The appointment of a council for all grid stakeholders and its establishment at the Energy Office means that such a council can also address more general issues regarding energy policy. This includes council participation on solutions for replacing the coal-fired combined heat and power plant.

Energy Bunker and Energy Hill: transforming contaminated sites into showpiece projects

The local expansion of the use of renewable energy is an important objective. In city-states such as Hamburg, however, limited space is available for the use of renewable energy technologies.

Hamburg's Energy Bunker, which went into operation in 2013, is a highly innovative example of transition to decentralised energy supply through renewable energy. The former artillery bunker in Wilhelmsburg from World War II was transformed into a renewable local power plant featuring solar collectors and a large heat reservoir during the International Building Exhibition IBA Hamburg 2013. At present, 1,650 residential units in the vicinity are supplied with climate-friendly heat; in the future, the system is set to supply heat to 3,000 residential units. At the same time, the solar collectors generate electricity for around 1,500 households, which is fed into the grid. Even now, the overall project saves around 4,700 tons of carbon emissions each year.

A café with an outdoor terrace is located on the roof of the bunker, at a height of 30 m, commanding spectacular views of Hamburg.



Georgswerder Energy Hill is indicative of how a highly problematical toxic landfill site can be transformed into a beacon for renewable energy innovation as well as a place of learning and relaxation.

After WWII, building rubble and household waste were piled up on the Georgswerder landfill site. Later, it was also used as a dump for toxic industrial waste. This is how the 40 m or so high hill evolved. The landfill site ceased to be operational in 1979. In 1983, however, it was discovered that dioxin was escaping from the foot of the artificial hill and was being discharged into the groundwater. This was resolved by covering the landfill site using a complicated process. Nevertheless, leachates and groundwater have to be purified to this day.

The first wind turbines were erected on the top of the hill as early as the 1990s. For years, the landfill gas produced by decomposition has been collected and transported to the adjacent copper works. Within the context of IBA Hamburg 2013, the potential for energy generation was fully exploited by installing a new wind turbine, a photovoltaic system and a heat pump. This renewable electricity can supply some 4,000 households. As a result, 20 per cent of private households on the island of Wilhelmsburg receive their electricity from the Energy Hill. In 2013, a visitor centre was installed at the site, providing information about the site's history, renewable energy technologies, and modern waste management. The horizon path encircling the crest of the hill offers a spectacular view of the city and the surrounding area.



Both the Energy Hill and the Energy Bunker received financial support from the European Regional Development Fund (ERDF).

5. Hamburg protects its green and natural resources

It is unlikely that the space required to build additional housing can be met fully by urban densification alone. This means the danger of the loss of areas that play an important role for the balance of nature, species diversity and the urban climate; for recreation and leisure activities for the population; and, ultimately, for Hamburg's image as a green city. This loss would cause the city's "natural capital" to shrink. However, this loss of natural capital can be compensated for by increasing the quality of the city's natural resources. This can be achieved by taking better care of nature reserves and the biotope network, or by equipping and maintaining green areas according to their intended use.

The City of Hamburg is currently examining how to develop a long-term financing mechanism for these cost-intensive tasks. It makes sense to link the costs for preserving the natural capital to the increase in value generated by the altered land use. The income from this financing mechanism should go towards upgrading natural areas that are under considerable pressure to ensure their continued use. Some of the income should also be used to purchase land in order to rea-

align the boundaries of the biotope network, the Green Network and the landscape axes.

The Senate has also decided to compensate for the removal of parts of protected landscape areas – necessary in order to construct housing for refugees – by designating new nature reserves. These new designations, which are currently being prepared, will increase the relative amount of nature reserves on Hamburg's territory even further – which is already the highest in the country.

6. Integrating nature protection and parks

The Ministry for Environment and Energy seeks to make nature protection and local recreation in Hamburg even more closely intertwined. The city's parks are to be increasingly maintained with ecological aspects in mind, creating valuable habitat for animals and plants. Visitors to Hamburg's parks should be able to experience these habitats, adding to the recreational value. Habitat quality in the city's nature reserves will also be improved by creating new heathland and ponds or by rehydrating wetlands. These areas are also open to the public, who should be able to experience these natural resources without putting them at risk. In this context, the Ministry for Environment and Energy has also planned to cooperate closely with district offices, nature protection bodies, environmental educa-

tors, recreationalists, and the German Federal Agency for Nature Conservation. The project is expected to begin in 2017.

7. Hamburg's natural resources

Hamburg strengthens its position as No. 1 in the country for nature reserves

When it comes to designating nature reserves, Hamburg has been extending its lead even further. Since Hamburg's year as European Green Capital, the city has continued to gradually expand its nature reserves. Hamburg intends to designate three new nature reserves, covering a total area of around 350 hectares. Once accomplished, these strictly protected natural areas will make up 9.4 per cent of the total municipal area (excluding Hamburg Wadden Sea National Park) – a figure no other state in Germany has reached.

Areas containing very rare or even endangered animal and plant species, and those containing vulnerable habitats, are placed under natural protection. Placing such areas under protection helps maintain the ecological balance of the areas typical for the region. It also plays a major role in increasing the quality of life in the Hamburg area.

By designating new nature reserves, Hamburg demonstrates that it can maintain the quality of life in the city and its green oases in spite of having to create additional urgently required housing on parts of protected landscape areas.

Hamburg's outpost in the Wadden Sea

In 2015, Hamburg celebrated the 25th anniversary of Hamburg Wadden Sea National Park. This natural treasure of Hamburg is around 105 km from the Town Hall as the crow flies, situated on the Outer Elbe Estuary. The area was designated a



Schweenssand Nature Reserve, located in Harburg on the Southern Elbe



An aerial view of Hamburg's Wadden Sea, showing the dune islands of Scharhörn and Nigehörn in the centre

European protected area, a sign of its outstanding quality. It was also recognised as being part of the Wadden Sea UNESCO World Heritage Site during Hamburg's year as European Green Capital.

From the very beginning, the national park was the best protected area in the whole of the Wadden Sea: over 90 per cent of its area belongs to a zone in which nature takes priority. The island of Neuwerk in the heart of the national park offers an opportunity for sustainable management – at low tide, the island can be reached from the mainland using traditional horse-drawn carriages, offering a unique nature experience.

Hamburg's Wadden Sea attracts visitors seeking unspoiled nature, walks through salt meadows, a dip in the sea, tidal mudflat hikes, guided tours to the seal bank and the dune island Scharhörn, and countless opportunities for birdwatching.

8. Hamburg is getting greener – more and better green spaces for more citizens in Hamburg

Hamburg is getting greener and greener. Since Hamburg's year as European Green Capital, its Green Network has been enlarged and its quality upgraded. Public parks, recreation areas and woodland now make up 16.8 per cent of Hamburg's urban area. They are used every week by 1 million people for leisure and recreation; 89 per cent of the population lives within 300 m of a

park. The central elements of this city-wide open space structure are the two Green Rings and the landscape axes, which extend out radially from the city centre to the periphery.

The Horner Geest landscape axis is being created in tandem with new urban development in the east part of Hamburg. This landscape axis provides an opportunity to create a continuous thread of green spaces, biotopes, experience areas and transit connections along 9 km from the city centre (Central Station) to the open countryside (Öjendorfer Park). The urban fabric it passes through, consisting of several neighbourhoods towards the east, is extremely heterogeneous from an urban development and socio-cultural perspective. In addition to functioning as a connecting, urban-ecological and climate-friendly area, the landscape axis therefore also plays an important role as an area of social interaction for those living in the adjacent neighbourhoods, some of which are densely populated. The Geesthang, which until now has been largely neglected, can now finally emerge as an important natural area. The Horner Geest landscape axis, linking this all together, is an important element in the endeavour to maintain a high quality of life in Hamburg while acknowledging the need to increase population density. A route for pedestrians and cyclists is planned along the entire length of the axis, with newly planted trees, meadows, play areas and leisure



opportunities. Hamburg will complete the initial steps of the project by the end of 2019 at a cost of €5 million. Two-thirds of the funding will come from the federal government's "National Urban Development Projects" support programme. A key element of the project is public participation in the form of an extensive, multi-level participatory process to help plan and implement the landscape axis. For the first time ever, citizens will be able to actively decide how €1 million in funding should be allocated to measures within this project.

The world's largest park cemetery reinvents itself

In view of declining burial rates and a changing burial culture, the Ministry for Environment and Energy, together with Hamburg's cemeteries, has planned to draw up a comprehensive, long-term development strategy for Ohlsdorf Cemetery. The objective is to preserve, restore and develop the cemetery as a cultural landmark and garden monument of national and international importance.

The plans focus on extensive participatory processes involving local residents and relatives of the interred, international scientific exchange, and the pooling of resources in the search for new forms of use that may be appropriate for

the cemetery. It is crucial that the plans do an effective job of balancing the aspects of heritage and monument protection, nature development, and funeral services and cemeteries, while securing the long-term economic outlook of the cemetery as a business operation. The first dialogue with citizens is expected to take place in 2016.

By establishing Ohlsdorf Cemetery in Hamburg, past generations created the world's largest park cemetery, containing important listed gardens. The large size of the cemetery (almost 400 hectares) and the wide range of facilities are based on historical and demographic conditions. Due to a decline in deaths and changing burial cultures, however, these have become largely obsolete.



A visit to Ohlsdorf Cemetery in July 2014

Initial thoughts envisage burials being restricted to an area of around 120 hectares in the future. In the long term, the far larger remaining area would be further developed into a cemetery park.

In any case, the entire cemetery will be preserved and maintained according to principles of garden heritage conservation and nature protection. Nature protection measures as well as artistic and cultural projects that would be appropriate for a park with a cemetery could also be carried out there. Places for interaction, meditation, reflection and recreation will play a dominant role.

From igs 2013 to the new sports park

Since mid-October 2013, Hamburg has had a new park, a legacy of the international garden show hamburg 2013.

The international garden show integrated a large part of Hamburg's allotment gardens into its concept. In 2013, visitors were invited to embark on a journey around the world to see Earth's diverse cultures, climates and vegetation zones, in keeping with the theme "Around the World in 80 Gardens".



Many of the attractions that were part of the garden show on the Elbe river island of Wilhelmsburg remained in place after the end of the event. For example, the eleven gardens in the "World of Movement" were retained, together with the whole sports and play area. The "World of Religions" installation will continue to act as an interreligious meeting point in the future.

The skating arena is the biggest attraction – in the true sense of the word – in the new 100 hectare park (including the allotment gardens), in the heart of Wilhelmsburg. This facility, as well as the well-equipped play areas and multiple secluded spots in the park, attract visitors both old and young, which has enabled the island park to evolve into a new public space for Hamburg.

More money for street trees; every tree at a click

Greenery and trees shape Hamburg's cityscape. Trees bring a bit of nature into urban life. It is not unusual for them to accompany local residents throughout their lives, supplying the city with oxygen and providing shade.

To keep it that way in spite of the construction boom, the new roads and the proliferating bike paths, the city has tripled its funding for replanting trees. More than 600 trees will be planted in spring 2016 alone.

The Online Tree Inventory, showing every single one of the 225,000 or so street trees on an interactive map, provides an overview of the location, species and age of each tree, as well as any special features. The results of on-site tree inspections are recorded and depicted in the map-



based application. Users can filter the results by street name, tree species, genus, year of planting, trunk circumference or crown diameter, and zoom in to view individual trees.

Hamburg's citizens also make an active contribution to preserving the city's trees. The "My Tree – My City" tree donation campaign launched during Hamburg's year as European Green Capital was so successful that it has been continued. Using an interactive map, citizens, companies

and associations select a tree species and a site for planting, and then have "their" tree planted. More than 5,300 trees have been planted since 2011 thanks to numerous donations and the city's dedication.

9. Hamburg grows further: people-oriented and climate friendly

Leap across the Elbe

Between HafenCity and Harburg, between the Northern and Southern Elbe, lies Europe's largest populated river island, home to the districts of Wilhelmsburg and Veddel. Despite being just an eight-minute trip away from the Central Station, for a long time comparatively little attention had been paid to this part of Hamburg, which had become neglected and had fallen into disrepair. The "Leap across the Elbe" has helped to increase the quality of life on the Elbe river islands and Harburg Inland Port, which links the city to its southern areas. Over an area of 35 square kilometres, the 70-plus projects from the International Building Exhibition IBA Hamburg



Wilhelmsburg Central

and the international garden show 2013 implemented between the end of 2006 and 2013 have immensely improved living conditions on the Elbe river islands and at Harburg Inland Port, giving a decisive boost to ecologically oriented urban development. Construction projects – including residential buildings, innovative case studies, educational and sports facilities, centres for the retired, locations for local economies and the creative scene, as well as the Energy Bunker – and parks and open spaces – such as the 100 hectare Wilhelmsburg island park, the waterfront park at Reiherstieg and the walk-in Georgswerder Energy Hill – have all helped to create attractive modern living spaces in Hamburg's south, reshaping the urban landscape.

This area is located between the city and the port; between tranquillity and noise; between greenery, water, open fields and grey transport thoroughfares. The many projects and infrastructure works have boosted the area's development dynamics, and the competence of IBA Hamburg GmbH will ensure that this momentum will be exploited and leveraged for additional positive urban development processes in the future. In 2019, a central state road route will be moved to an existing railway line, freeing up centrally located, well-developed land for residential areas. Developing this area into urban, green and mixed-use neighbourhoods – involving the construction of new buildings and the improvement of existing housing – is at the top of the city's agenda.

The core element is the "Wilhelmsburg Central" project, which involved the construction of a new building for the ministries for urban

development and for environment. The building, completed in 2013, has a primary energy requirement of 70 kilowatt hours per square metre, making it one of the most efficient office buildings in Germany.

In view of climate change, new strategies must also be pursued in Wilhelmsburg. The "Renewable Wilhelmsburg" concept represents another step in the gradual transition to supplying the Elbe river islands with regenerative energy. The findings generated from IBA 2013 will also be further perpetuated in an effort to maximise sustainable development.

HafenCity Hamburg – a sustainable city of the 21st century

The very nature of the idea of developing HafenCity corresponds to an important criterion for sustainable urban development. After all, rather than expanding Hamburg's municipal area into the outskirts, the project revitalises inner city dockland areas. Encompassing 157 hectares of former industrial sites, HafenCity will be home to the Elbe Philharmonic Hall, Hamburg's new landmark that is set to open in January 2017. The



HafenCity GmbH

area will also contain ten densely developed and mixed-use quarters for 13,000 to 14,000 residents, 45,000 employees, 5,000 students and up to 50,000 visitors each day. Ecological sustainability will be initiated at numerous levels, ranging from ecological building concepts and climate-friendly heat energy supplies to an ambitious mobility concept.

In 2007, the HafenCity Ecolabel was introduced as Germany's first quality label for the sustainable construction and operation of buildings. Initially, participation in the HafenCity Ecolabel was voluntary for house builders. Since 2012, compliance with the rigorous ecological criteria is an element of all tenders for plots.

Thanks to the dense mix of uses in HafenCity, there are short distances between places of residence and work, culture, recreation and trade, enabling citizens to refrain from using cars.



Project visualisation of Stellingen from 15 October 2013

In April 2011, an information centre on sustainability issues related to HafenCity was opened in the area to mark Hamburg's nomination as a European Green Capital. Since then, the "Osaka 9" Sustainability Pavilion vividly presents topics relating to the various areas of activity of sustainable urban development. In addition, the exhibition regularly invites visitors to participate in a guided tour taking in the "green" themes of HafenCity.

Allotment gardens in place of concrete: a green cover over the motorway

Hamburg's cover over the A7 motorway was merely a concept when the city submitted its application for the title of European Green Capital. Since 2009, the city has been feverishly working the project's completion.

The A7 motorway is one of the most important arterial roads in Europe, connecting Scandinavia with the core countries of Europe. The expected increase in traffic to around 165,000 vehicles per day by 2025 makes its expansion essential. Hamburg has seized this transport-related necessity as a further opportunity for sustainable urban development: to take on the necessary task of protecting residents from noise, the motorway – with up to ten lanes – will be covered with a three-part 'hood' along a stretch of road 3.5 km long. The "Hamburger Deckel" will offer space for around 25 hectares of new green spaces, comprising approximately 13 hectares of public parks and some 320 allotment gardens.

The additional noise protection will improve the quality of life in the adjacent urban districts considerably. At the same time, the green covers will bridge the division in the settlement struc-

ture, caused by the motorway. This urban repair will enable parts of historic parks on either side of the motorway to be reconnected with each other, creating new parks in the districts. New residential areas will also be created in the noise abatement areas on either side of the cover. This way, urban development can take place in the city over a large area of land that would otherwise not have been available. The soil structure on the covers will also enable existing allotment gardens to be moved from the development areas to close by within the urban districts.

A total of more than 3,200 residential units are to be created on these new development areas, covering around 65 hectares. The first two covers are expected to be completed in 2019 and 2020, respectively. The third cover will be completed by 2025 at the latest.

10. Save and recycle rather than waste

Hamburg is also stepping up its efforts to protect its natural resources.

Plastic waste at the port instead of in the sea

Hamburg has created additional incentives to encourage ships to dispose of their waste at the port, and not at sea.

In 2015, Hamburg passed a regulation that enables ships arriving at the Port of Hamburg to dispose of six times the amount of ship-generated waste at the port than before at no extra cost. As a result, Hamburg has created an incentive to put a stop to the illegal dumping of waste generated on board at sea. This regulation means that Hamburg – the third biggest port in Europe – contributes to reducing the 20,000



cubic metres of waste that are thought to be dumped into the North Sea each year.

Every ship that comes into Hamburg's port may now dispose of six cubic metres of ship-generated waste instead of just one cubic metre at no extra cost, regardless of the size of the ship.

The regulation has also been adjusted to reflect changes in the structure of the fleet, since fewer but considerably larger ships call at the Port of Hamburg. This adjustment increases allowances for sewage for all ships and for waste oil for ships over 50,000 gross tonnage. For the first time ever, it is now possible to dispose of waste derived from the cleaning of waste gases (scrubbing), which will eventually even be subsidised.

Recycling – an area that needs improving: Hamburg is catching up

The results of the nomination competition for European Green Capital revealed that, in Hamburg, waste separation by private households had not been implemented to the same



Professor Dr. Rüdiger Siechau, Monika Böhm and Jens Kerstan install the 150,000th blue waste paper container.

degree as in other German cities. For this reason, the State Ministry of Urban Development and Environment joined forces with the public waste management enterprise Stadtreinigung Hamburg to launch a recycling campaign in 2009.

Since then, the number of recycling bins for private households for organic and green waste, paper and recyclables has increased from 236,000 to around 370,000 bins, representing a 56 per cent increase compared to early 2011.

The quantity of organic and green waste collected has risen steadily since 2011. In addition to the recycling bin newly introduced in the same year, it has also been possible to increase the

quantities of lightweight packaging considerably by adding other waste from metal, such as old pots, and plastic. What counts is that the volume of municipal solid waste that year was reduced considerably by 55,000 tons.

The reduction in the quantity of waste ultimately led to the closure of a waste incineration plant in 2015. This offers new flexibility for making considerable progress in the area of waste prevention and recycling in the future.

In Hamburg, homeowners are required to roll out their recycling bins themselves. During Hamburg's year as European Green Capital, the city agreed with the housing sector that both single-family houses and apartment buildings would have to install recycling bins. This obligation will become mandatory in several stages. Since 2015, owners who do not have bins must expect them to be delivered, and will then have to use them unless they have a good reason for being exempted from the obligation. The aim is to give all citizens of Hamburg the possibility to separate their waste close to home.

Hamburg's citizens are also involved in cleaning up the city. An annual spring-cleaning campaign called "Hamburg Cleans Up" has been held in the city since 1997. In 2011, for instance, more than 850 action groups involving 53,000 people took part in the campaign; in 2016, there were 1,105 action groups with 65,000 people.

Green Procurement Guidelines make Hamburg a purchasing pioneer

In future, environmental criteria will play an even greater role in the selection and awarding



process adopted by Hamburg's administration. The Parliamentary Paper on green procurement passed by the Senate is a 150-page catalogue of criteria that defines ecological standards for purchasing products and awarding contracts – for goods such as printer paper, light bulbs, cleaning agents, wall paint and even company cars. In this way, criteria such as lifecycle costs, reparability and recyclability, packaging, climate impact and resource consumption can be taken into account in addition to price as a mandatory measure in the award decision. The new Environmental Guidelines also contain a negative list of products that the administration may no longer purchase or use in the future. Such items include coffee makers that use aluminium capsules, mineral water in non-returnable bottles, disposable dishes and chlorinated cleaning agents.

The city purchases goods, products and services to the sum of around €250 million each year. Having binding environmental criteria in the award process sends out an important signal to business and private individuals, encouraging them likewise to take greater account of the consequences of their purchasing decisions and to pay attention to each product's history. With its purchasing power, the city can help ensure that environmentally harmful products are

purchased less frequently and that sustainable products achieve even greater acceptance in the market.

This aspect has been fleshed out in the binding "Green Procurement Guidelines of the Free and Hanseatic City of Hamburg" (Environmental Guidelines), providing assistance. Public enterprises are also recommended to apply them when awarding contracts.

Example 1: The fleet of vehicles currently owned by Hamburg's core administration comprises 315 low-pollution and low-carbon cars, of which around 24 percent are electric vehicles. The Procurement Guidelines apply more stringent criteria in this respect: the aim is to achieve a share of 50 percent by 2020. The number of electric vehicles owned by public enterprises should also have doubled by then.

Example 2: The lifecycle of a product will be considered in the future. The guidelines contain calculation sheets for many product groups, enabling a lifecycle assessment to be made. Such assessments reveal that long-term savings are possible if products are durable, if parts can be replaced easily or if low maintenance costs are involved. This may be the case, for example, when energy savings can be made in buildings, vehi-



Cyclists at the Alster

les, lighting or computer centres. In such cases, energy-saving options represent the cleverer purchasing decision in the long run, even if the purchase price is slightly higher in the first instance.

Example 3: Around 66 percent of the copy paper used by the administration in 2014 was recycled paper featuring the Blue Angel environmental label organised by the German government. In the future, the city intends to further increase the proportion of recycled paper used. By using recycled paper, Hamburg has managed to reduce its carbon emissions by approximately 285 tons, in addition to saving around 51.9 million litres of water and some 10.65 million kWh of energy compared to the use of virgin fibre paper. The quantity of water saved meets the daily demand for drinking water of over 414,800 residents.

The fact that the city is on the right track is evident in the wide international media coverage given to the environmental guidelines.

11. Air quality: this is where Hamburg must take action

A major challenge facing Hamburg is its nitrogen dioxide (NO₂) air pollution. Although air pollution decreased at eight of the 16 monitoring stations, the annual average has remained stable at four stations and increased slightly at four. Overall, annual average nitrogen oxide pollution has decreased by more than 10 per cent since 2010.

However, as is the case in many other European cities, Hamburg still regularly exceeds the admissible limits. For this reason, the European Commission has initiated infringement proceedings against the Member States concerned. In addition, the Administrative Court in Hamburg passed a final judgment in April 2015 that the Senate is currently implementing by designing a new Clean Air Action Plan. For the first time ever, individual regulations are being designed specifically with regard to their potential for reducing nitrogen dioxide emissions. To this end, the city has commissioned experts to draw up a comprehensive emission assessment, which is currently underway. Numerous further measures are being added to the Clean Air Action Plan. One such measure is the goal of doubling the amount of bicycle traffic in Hamburg. Another example is

a package for greater environmental protection at the port, which involves the following aspects: more transfers by water in the port instead of by truck, and onshore power installations, including for container ships in the long run.

Cleaner air at the port

Providing power from the onshore grid is one way of supplying ships with environmentally friendly electricity while in port. In addition to improving air quality in the port, this measure helps ensure that the port, located in the heart of a city with over a million inhabitants, will continue to be a secure and well-accepted asset to the community in the future.

In autumn 2015, technical approval was given to the landside power plant for supplying cruise liners moored in the port with alternative energy. The initial operation of the plant will be celebrated in June 2016 with the arrival of the AIDA Sol cruise liner in the Port of Hamburg. The point of providing shore power is to minimise some of the main sources of air pollutants such as particulate emissions, nitrogen oxides or sulphur dioxide in the port. The landside power plant is part of the overall concept for supplying cruise liners with alternative energy in the Port of Hamburg. The pilot project receives funding from the federal government as well as from the European Union. In terms of its dimensions and technical design, the landside power plant is unique in Europe and anywhere else in the world.

In order to improve air quality in the port and the entire city, Hamburg is now examining the possibility of including container ships in shore power solutions.



12. Noise mitigation requires action

The aim is to make noise pollution related to the city as low and as reasonable as possible for Hamburg's citizens. For Hamburg, this meant the drawing up of the Noise Action Plan Hamburg 2013 to meet the EU Environmental Noise Directive.

In 2016, special emphasis has been placed on the following aspects:

In addition to its continued efforts to implement active noise abatement measures in the area of road traffic, which is proving difficult, the Ministry for Environment and Energy intends to launch a "noise abatement measure" support programme. Those responsible are currently conducting intensive preparatory work. The goal of the programme is to achieve an immediate but

sustainable improvement in quality of life, particularly by retaining natural ventilation as well.

A growing number of complaints were filed about the inner-city airport regarding aircraft noise. In April 2016, the Senate agreed on measures for implementing citizens' requests concerning the "16-Point Plan".

One of the measures is a regulation to institutionally strengthen the Aircraft Noise Abatement Officer. By passing this innovative regulation, Hamburg emphasises the importance of aircraft noise protection, sending a strong signal to the whole country in favour of greater protection from aircraft noise.

In addition, a variety of instruments are being developed to reduce noise pollution. One such example is the development of a new pricing system that creates financial incentives for the

use of the quietest aircraft possible; for avoiding delays; and for reducing noise pollution during the evening. If night flight restrictions are breached, the possibility of skimming off the profits should be examined.

The Ministry for Environment and Energy is examining the designation of so-called "quiet areas," as required by the EU Environmental Noise Directive, which aims to protect such areas against an increase in noise. The necessary investigations and consultations with the agencies involved have yet to be completed.

13. Transport transition helps tackle air pollution and noise, and helps protect the climate

Increasing the share of bicycle traffic to 25 per cent

In recent years, there has been fresh impetus for a strategic realignment of Hamburg's cycling strategy, adopted in 2008. The Bike & Ride development concept has specified that 12,000 new parking spaces for bicycles would be created at Hamburg's commuter railway stops by 2025. The city has also set up the "Fahrradwerkstatt," a committee composed of top-level representatives from relevant institutions. The committee is designed to better manage the promotion of cycle transport, stepping up such promotion by developing projects that are not yet contained in the cycling strategy. In addition, the city has set itself a goal of making Hamburg into a more bicycle-friendly city and of increasing the share of bicycle traffic in the modal split to 25 per cent by the 2020s.

Hamburg has a conceptual design for a cycle route network comprising 14 routes with a total



Cycle highway



StadtRAD station

length of approximately 280 km. The advantage of cycle routes is that they channel everyday bicycle traffic to less congested routes, connecting residential areas downtown and in the suburbs to urban centres and the city centre. They form the backbone of a cross-district network of cycle paths, making them an important element in enhancing the appeal of everyday bicycle use. The requirements and hallmarks of a cycle route include, in particular, safe, swift and convenient navigability, both on the route and at hubs. The aim is to continuously expand the cycle routes and to complete the network by 2020. At the moment, around one-third of the network has been completed.

Public cycle hire systems have become a regular feature of every urban mobility system, as is the case in Hamburg. They play an important role in bicycle use, connecting bicycles to local public transportation and hence to strengthening environmentally friendly transport on the whole. StadtRAD Hamburg was established in July 2009, and has been Germany's most successful bike hire system so far. By 2016, the system had expanded to 200 stations offering 2,450 bicycles. Bikes are rented conveniently using an app or via a terminal available at each rental point. StadtRAD Hamburg currently has over 333,000 registered customers. Over 2.5 million

rentals were registered in 2015. On peak days, each bike is used up to six times. The secrets of the system's success can largely be accounted for by the bike rental being free for the first half hour; the large and dense network of highly visible and well-kept rental points; the ease of handling; and the brand's distinctive design and name that has a clear reference to Hamburg. The red city bikes have since become a symbol and an integral part of the Hanseatic City.

Expanding bus and train transport eases road congestion

Hamburg continues to commit itself to ambitious goals that lead to less noise, fewer pollutants and carbon emissions, decreased consumption of resources, fewer accidents, and as little land consumption as possible.

To achieve this, the city works to optimise local public transport, especially enhancing the quality of the services offered and their attractiveness, and to encourage users of private motor vehicles to switch to buses and trains. But not only that, public transport vehicles themselves should be operated in a more environmentally friendly manner in the future.

Hamburg's metro bus system is to become more attractive by offering more legroom, higher



Plug-in bus at the electric bus terminal on Adenauerallee

frequency, shorter journey times, more capacity, and easier entry and exit for persons with reduced mobility.

Hamburg's transport companies are also testing innovative, zero-emission bus systems to pave the way for the exclusive procurement of zero-emission buses from 2020 on.

Hamburger Hochbahn is testing battery-powered and fuel cell buses for daily operational use on its innovative line 109.

Verkehrsbetriebe Hamburg Holstein (VHH) has announced that, starting in 2016, it will exclu-

sively use electrically powered articulated buses on metro bus line no. 3. Additionally, by procuring a battery-operated minibus for its 48 line, VHH has demonstrated the effectiveness of the basic concept of recharging energy on route – with green energy, of course.

The expansion of the underground railway network is gradually progressing. Plans are underway to create a new underground railway line. The U4 line is being extended. The section up to Elbbrücken is expected to be completed by 2018.

14. The waterfront city

Hamburg is known as the Green Metropolis on the Waterfront – the port, the Elbe, the Alster and the multitude of other smaller rivers, canals, fleets, waterways and brooks have determined its urban development, and continue to shape the city to this day.



Flood control: foresighted planning based on painful experience

Storm surge protection is one of the major long-term tasks that have dominated generations in the Free and Hanseatic City of Hamburg with its tidal Elbe. The severe storm surge of 1962 led to a large loss of life, leaving a path of destruction in its wake. Since 1990, more than € 600 million has been invested in expanding and elevating the flood defences. By the end of 2011, the Hanseatic City had reinforced 98 per cent of the entire length of the flood defence line. The remaining work for the new construction is also expected to be completed by the end of 2016.

Coastal protection has always had to cope with the effects of rising sea levels. However, current and future climate change presents a major challenge, and must be taken into account when calculating future flood defences. Hamburg has created the prerequisites for effective flood control, which it will continue to optimise.

In 2013, new design water levels for flood control were introduced for the Elbe in Hamburg. A new construction programme is currently being developed accordingly, which will involve raising the dykes over the next 20 to 25 years from 2016.

In the course of raising and broadening the dykes, interventions have to be made in ecologically valuable land. Interventions in the ecosystem must be compensated for somewhere nearby, which, due to the lack of available space, is becoming increasingly difficult.

For this reason, various eco-account measures are currently being explored. Major individual

processes (e.g. dyke relocation) or combinations of smaller processes are conceivable in this respect. Developments will be based on the Integrated Management Plan – Elbe Estuary, which describes ecological guidelines for the Lower Elbe.

The Elbe Habitat Foundation – a successful alliance for the Elbe

The Elbe Habitat Foundation, which had been created shortly beforehand by the Hamburg Parliament, started its work in 2011, Hamburg's year as European Green Capital.

Parliament's aim was to secure the future of the Elbe habitat by providing financial resources for ecological improvements. By establishing an independent foundation, a new chapter was written concerning collaboration within the region: for example, Parliament endowed the Elbe Habitat Foundation with a Foundation Board of Trustees with equal representation – environmental associations on one side, and representatives from the city, industry and the port on the other. Stakeholders who could not be more different, but who were connected to the habitat and economic area of the Elbe like no other, were to collaborate in common projects. The foundation became the nucleus of understanding for the Tidal Elbe River.

The foundation has now hit its stride: by the beginning of 2016, it had already initiated or completed some 40 projects – evidence of excellent cooperation in a spirit of mutual trust. In keeping with this success, the foundation funds will be increased: so far, the foundation has received 4 per cent of the port fees annually to fund its



Tidal Elbe River Elbe and Hamburg Port

projects; this figure will increase to 5 per cent in the future.

Part of this funding is earmarked for the estuary partnership, which is close to Hamburg's heart. By also including stakeholders from the two neighbouring federal states, dialogue on the Tidal Elbe River will be placed on an even broader footing.

The return of fish

One of the main objectives in implementing the EU Water Framework Directive is to establish ecological continuity of water bodies for fish and other aquatic organisms. In Hamburg, a major aspect in achieving this objective is represented by the Alster river system, featuring numerous tributaries. Like the Alster itself, some of these tributaries reach into the neighbouring federal state of Schleswig-Holstein, meaning they are relevant on both sides of the border.

Like many other heavily modified water bodies in Hamburg, the course of the Alster between its source and its mouth, where it empties into the Elbe, is interrupted by multiple sluices. These sluices were built over the past centuries to run mills, for example. In addition, they were (and continue to be, in part) necessary for regulating water levels (navigability, flood control).

Although fish bypasses were constructed at several sluices a long time ago, it was not always possible to achieve the necessary continuity in places for various reasons. Over the next two years, the existing fish bypasses at these sluices will be upgraded or converted. The new construction of fish bypasses at three additional sluices (e.g. involving fish ladders, see photo) will be completed in early summer 2016, which will then permit the passage of fish from the Elbe to the Alster system. Observations of fish stocks confirm the project's initial success. In order to assess the success of the sluice modifications, the fish stocks will be monitored.



Fuhlsbüttel sluice with fish ladder

15. Participation: citizens have their say

The city can only be developed in a dialogue with its citizens. In recent decades, there has been an expansion of public participation and citizens' greater involvement.

For more than 20 years, Hamburg's citizens have become familiar with and made use of the instruments of citizen law-making. In 2013, for example, the citizens decided that the city should buy back the energy grids.

In addition, citizens are involved in many projects and undertakings, such as in shaping the future of Ohlsdorf Cemetery and in designing the Horner Geest landscape axis.

Moreover, progressive policies such as the Transparency Act of Hamburg require the administration to make a wide range of documents and data available online for free, ensuring citizens are also informed at an early stage.

The city introduced a recurring format to enable citizens to contribute their own ideas in 2012. Based on the experience gained during the European Green Capital Dialogues, the City Workshop was launched as a wide-ranging event for public participation concerning urban development. The goal of these workshops is to develop a new planning culture in Hamburg by increasing the levels of information and involvement in urban development projects and environmental issues.

These workshops focus on informal participatory processes in addition to legally required, formal participation stages. The goal is to improve



planning results by ensuring that planners have better information, leading to fewer lawsuits and objections surrounding the eruption and resolution of conflicts. On the whole, this should create a high level of consensus, speeding up the implementation of projects.

In principle, participatory processes during the workshops should follow the following three steps: "Invite – involve – provide feedback." The scope of participation should be clearly determined and conveyed in advance, stating, for example, whether it is a matter of providing information or facilitating consultation, participation or co-decision. Public participation is understood to be an advisory procedure undertaken to pave the way for decision-making. City Workshops are therefore offered in a variety of formats, e.g. as dialogue workshops on city-wide topics, or as planning workshops for specific planning initiatives involving certain districts. In addition, the City Workshop team provides advice and



support to project groups within the Ministry for Urban Development and Housing with regard to participatory processes in major urban development projects (Leap across the Elbe, Moving upstream along the Elbe and Bille). In addition to these tasks, the City Workshop is also responsible for evaluating participatory processes and further developing participation methods. The current focus is on introducing a geodata-based, internet-supported participation platform and developing strategies for “inclusive” participation.

16. Cooperation between industry and the city benefits climate and the environment

One of the reasons why Hamburg was awarded the title European Green Capital 2011 was its outstanding cooperation with industry, politics and the civil service. On the one hand, statutory regulations are necessary to convince companies to make investments in ambitious environmental and climate protection requirements. On the other hand, Hamburg also demonstrates how voluntary measures, coupled with consultancy services, incentives and marketing opportunities, can generate innovative solutions to environmental problems. Indeed, environmental policy also has to do with the ability to establish and promote technical innovations. In recent years, Hamburg has focused its economic policy on future technologies, particularly in the field

of environment and energy. In this respect, the wind energy sector has developed particularly well in Hamburg, and even now has helped strengthen the labour market.

Eco-Partnership – involving 1,000 companies

Industry and trade are responsible for around half of Hamburg’s carbon emissions. Expenditure on energy is a major cost factor for many companies. The Eco-Partnership Hamburg provides information about specific action companies can take that can lead to savings. The objective of the Eco-Partnership, an alliance between the City of Hamburg and Hamburg’s economy, is to promote sustainable and resource-efficient economic activity. It acts as a central platform for environmental policy exchange between industry, politics and the civil service. The Eco-Partnership, established in 2003, is a voluntary alliance supported by the Chamber of Commerce, the Chamber of Crafts and Trades, the industrial association, the Unternehmensverband Hafen and the Ministry for Environment and Energy. The platform for information and networking is growing steadily. In 2016, more than 1,000 small, medium-sized and large companies voluntarily organised their processes in an environmentally friendly and resource-efficient manner. Since Hamburg’s year as European Green Capital, the number of EcoPartners has increased by almost 25 per cent. The Eco-Partnership has also set it-

self ambitious goals for the future: not only is the number of EcoPartners involved set to grow by 2018, but also the intensity of involvement.

Companies for Resource Protection – the name says it all

The Eco-Partnership paves the way for companies to improve efficiency and cut costs by offering numerous programmes and services. A great many of these activities benefit from financial support from the City of Hamburg, such as within the “Companies for Resource Protection” programme.

This programme, launched in 2001, is directed at manufacturing and services enterprises as well as firms for skilled trades. The aim of the programme is to initiate voluntary investments in efficiency improvement measures, in particular for reducing carbon emissions and generating energy savings, by offering customer-oriented programmes. Unlike other programmes, the Hamburg model offers a combination of financial, advisory and practical support. After all, it is often not just funding that companies lack, but also often information, qualified personnel and time, too.

The Ministry for Environment and Energy is enhancing the range of programmes with accompanying technology-related networks and the offer of low-budget technology checks for an initial plant analysis.

In the context of participation in the “Companies for Resource Protection” programme, Hamburg-based companies have so far invested in efficiency measures totalling some €367

million. Thanks to these investments, approximately 281,800 tons of carbon emissions are avoided each year, and 27,400 tons of material and 744,600 cubic metres of water are saved annually.

For example, one company – which is simultaneously an EcoPartner – managed to reduce the high cooling and heating demand of its plant by 59 per cent compared to the use of conventional technology. This reduction was achieved by installing an ice storage tank for heating and cooling. The ice storage tank reduces the company’s energy costs in the long term, and leads to a saving of 70 tons of carbon emissions each year.

Companies act as “ambassadors” for clean air

Hamburg’s industry and the city have jointly decided to continue to also help improve air quality in Hamburg. The “Partnership for Air Quality and Low-Emission Mobility,” established in 2012, was extended to 2020 at the beginning of 2016. Within this alliance, companies are supported in their endeavours to achieve low-emission company mobility.

The “eco-taxi” label introduced during Hamburg’s year as European Green Capital is being continued within the Air Quality Partnership. Building on this label, an “eco-courier” label was developed, which can also be awarded to bike couriers.

More than 200 companies are now involved in the Air Quality Partnership. These companies take measures to optimise their fleet of vehicles or to help their employees commute in a more environmentally friendly way. Every year during

the campaign week, some 10,000 Hamburg employees are made aware of the issue of low-emission mobility. The commitment demonstrated by air quality partners, especially those member companies labelled “Air Quality Partner of the Year,” makes them role models for other companies in Hamburg.

Hamburg, the wind energy capital

There are currently almost 1,500 businesses in the Hamburg Metropolitan Region which, together, employ around 24,700 people in the renewable energy sector. They experienced a growth in sales of over 50 per cent between 2008 and 2011.

In 2011, during Hamburg’s year as European Green Capital, the Renewable Energy Hamburg Cluster (EE HH Cluster) was established on the initiative of the environmental authority. The cluster now acts as a link between more than 180 companies.

The cluster enables Hamburg-based companies to engage in networking amongst themselves and with higher education institutions, research institutes and non-governmental organisations. For example, forums have been created to tackle issues such as heat supply, financing and law, and media/PR activities.

Every year, the sector network organises several “Renewable Energy Hamburg meeting points”. It also hosts a wide range of expert workshops, and presents the “German Renewables Award” on an annual basis. In 2016, the EEHH Cluster hosted a conference in collaboration with Hamburg University’s Center for Earth System Research and Sustainability for the first time.

Together, the EEHH Cluster, Schleswig-Holstein Renewable Energy Network Agency, the Wind Energy Network and the Wind Energy Agency in Bremerhaven make up the Offshore Wind Industry Alliance (OWIA). At the international level, the EEHH Cluster is a member of the International Cleantech Network (ICN).

The biennial trade fair WindEnergy Hamburg underlines Hamburg’s position as Europe’s wind energy capital.

17. A sustainable city

In addition to continuing the projects and strategies presented, Hamburg will step up its activities regarding sustainability.

In 2015, Germany’s candidate city – the Free and Hanseatic City of Hamburg – became Germany’s candidate to host the 2024 Olympic and Paralympic Games. In a referendum held in November 2015, however, Hamburg’s citizens voted by a narrow majority against a continuation of the bid. Even so, the application process gave fresh impetus to Hamburg’s sustainability policy. Sustainability was a central element of Hamburg’s bid – from the very outset, urban planners consistently kept in mind the continued use of the buildings after the Games. Moreover, sustainability acted as a guiding principle in the overall plan, which envisaged the Games being held together with Hamburg’s citizens, benefitting them all, rather than at the short-term cost to the environment and the local population. Ecological, social and, of course, economic interests played a role in this respect. The sustainability concept for the Games was significantly influenced by Agenda 2030. This agenda, adopted by the United Nations in



September 2015, commits its member states to sustainable development objectives for the first time. Together, they aim to tackle the major global challenges of sustainable development, including hunger, poverty, a lack of education, and environmental and climate protection.

Hamburg as a “developing country”: Agenda 2030 and the Sustainable Development Goals

Not only was the sustainability concept for the Olympic Games influenced by the Sustainable Development Goals (SDGs). Future policy for a modern, sustainable Hamburg also follows the United Nations’ notion that all countries, including Germany, are “developing countries.” As a city, a metropolis and a world trade hub, Hamburg can and must make its substantial contribution. In a “world of cities,” cities are the cause of the problems – but also their solution. In this respect, topics such as the energy transition, water and air quality, noise issues, the development of the port, educational opportunities and integration all play an important role. In future years, Hamburg will push hard to implement Agenda 2030 and to breathe life into its sustainable development objectives.

The guidelines drawn up for the Olympic Games reflected the basic understanding of Hamburg’s

policy. It is therefore only logical for the content of the sustainability concept for the Olympic Games to continue to be pursued even after the negative referendum. The City is looking at how specific project ideas that were developed for the bid can be implemented even in the absence of the Games, providing Hamburg’s citizens with an added value. This ActiveCity master plan focuses in particular on sports-related projects.

Francop disposal site as a public recreational area with a mountain bike course

One such example is the Francop disposal site, a hill located close to the port. This disposal site, which is to be decommissioned and redeveloped in the near future, was to become the mountain bike course for the Olympic Games. The disposal site is now set to be redesigned as a publicly accessible recreational area with an integrated mountain bike course, despite no longer being required as an Olympic sports facility. As a result, Hamburg’s mountain bikers would gain a new, attractive course – and all citizens of Hamburg would benefit from the new recreational area commanding a view of the port.

Movement in public spaces: sport in the park

The Olympic spirit should continue to have an impact on the sports city of Hamburg on the

whole, encouraging its citizens to engage in sport themselves. The fact that an increasing number of people use urban spaces for sports purposes is visible daily in Hamburg's green areas, even after the Olympic bid. Whether jogging or tai chi, Hamburg is on the move. The idea of "sport in the park" will be strengthened and supported in future years. Examples of such support include the creation of new jogging routes and the installation of "outdoor exercise stations" with sports equipment for public use.

Sustainable major events

The goal of the sustainability concept was to host the Olympic and Paralympic Games as

sustainable events. The approaches developed for this purpose will also be taken up in future years and applied to other major events taking place in Hamburg. A pilot project was carried out in 2015 for the "altonale," a popular urban district festival in Hamburg-Altona. The measures, including a bicycle locker room, cargo bikes, a waste concept and composting toilets, are to be expanded this year. The aim is to make major events in Hamburg greener (for example, by using seasonal, regional and organic food, as well as returnable crockery...), and to address social aspects (such as fair trade, social integration and intercultural encounters).



VII. CONCLUSION: RECOGNITION AND INCENTIVE

In looking back over the past five years, for Hamburg it has certainly been the case that the title of European Green Capital has acted as an incentive not simply to rest on its laurels, but to continue its endeavours in keeping with the title. Hamburg has initiated numerous new undertakings which, in turn, will show the way forward. These undertakings meet the standards

of current competitions for the title of European Green Capital and are on a par with activities undertaken by the most recent winning cities. The title of European Green Capital is suitable as a benchmark and a guiding principle for cities to present themselves as a role model for other cities and for citizens to sustainably develop their cities as an attractive place in which to live.



Published by:
Freie und Hansestadt Hamburg
Behörde für Umwelt und Energie
Neuenfelder Straße 19
21109 Hamburg
www.hamburg.de/environment

Responsible for the content under German press law: Jan Dube

Responsible for the project: Jennifer Wesche

Design:
Landesbetrieb Geoinformation und Vermessung, Kommunikationsdesign
Translation:
Teresa Gehrs

1st edition:
Juni 2016

Images:

title: [www.mediaserver.hamburg.de/Sven Schwarze](http://www.mediaserver.hamburg.de/Sven_Schwarze), [www.mediaserver.hamburg.de/Roberto Kai Hegeler](http://www.mediaserver.hamburg.de/Roberto_Kai_Hegeler), Patrick Mascart, Martin Elsen/National Park Archives, [www.mediaserver.hamburg.de/Witters GmbH](http://www.mediaserver.hamburg.de/Witters_GmbH), [www.mediaserver.hamburg.de/Christian Spahrbier](http://www.mediaserver.hamburg.de/Christian_Spahrbier), LGV/Hachmann, Chris Bahn, HAMBURG ENERGIE, [www.mediaserver.hamburg.de/Thies Raetzke](http://www.mediaserver.hamburg.de/Thies_Raetzke), Andreas Giesenberger, [www.mediaserver.hamburg.de/Andreas Vallbracht](http://www.mediaserver.hamburg.de/Andreas_Vallbracht), [www.mediaserver.hamburg.de/Ingo Bölter](http://www.mediaserver.hamburg.de/Ingo_Bolter), visualisation: TH Treibhaus Landschaftsarchitektur, aerial photo: Matthias Friedel; P. 4: Ministry for Environment and Energy/Jule Becker; P. 6: [www.mediaserver.hamburg.de/Thies Raetzke](http://www.mediaserver.hamburg.de/Thies_Raetzke); P. 7, 8: Ministry for Environment and Energy; P. 9 top: Sabine Vielmo; P. 9 bottom f. l. t. r.: 1 and 2 Alexis Houlot, 3 Luc Benevello; P. 11: Rainer Müller; P. 12: Alexis Haulot; P. 15: [www.mediaserver.hamburg.de/Elbe&Flut/Thomas Hampel](http://www.mediaserver.hamburg.de/Elbe&Flut/Thomas_Hampel); P. 19: [www.mediaserver.hamburg.de/Elbe&Flut/Thomas Hampel](http://www.mediaserver.hamburg.de/Elbe&Flut/Thomas_Hampel); P. 22: © Ministry for Environment and Energy/mount. Design und Kommunikation für soziales Wachstum, background photo Hamburg: ©Michaela Stalter; P. 25: HAMBURG ENERGIE; P. 26: IBA Hamburg/Matthias Friedel luftbilder.de; P. 27: [www.mediaserver.hamburg.de/Sven Schwarze](http://www.mediaserver.hamburg.de/Sven_Schwarze); P. 28: Andreas Giesenberger; P. 29: Martin Elsen/National Park Archives; P. 30 top: aerial image: Matthias Friedel; visualisation: Breimann & Bruun; P. 30 bottom: Sarah Schafer; P. 31: igs hamburg 2013/Andreas Bock; P. 32: [www.mediaserver.hamburg.de/Elbe&Flut/Thomas Hampel](http://www.mediaserver.hamburg.de/Elbe&Flut/Thomas_Hampel); P. 32: IBA Hamburg GmbH/Johannes Arlt; P. 33: Miguel Ferraz; P. 34: DEGES/V-KON; P. 35: [www.mediaserver.hamburg.de/Martin Brinckmann](http://www.mediaserver.hamburg.de/Martin_Brinckmann); P. 36: H. Hass/SRH; P. 37: [www.mediaserver.hamburg.de/Andreas Vallbracht](http://www.mediaserver.hamburg.de/Andreas_Vallbracht); P. 39: [www.mediaserver.hamburg.de/H.-J. Hettchen](http://www.mediaserver.hamburg.de/H.-J._Hettchen); P. 40, 41: Ministry of Economic Affairs, Innovation and Transport; P. 42 top: Hamburger Hochbahn AG; P. 44 top: Dr. Elisabeth Klocke; P. 44 bottom: Helmut Ramers; P. 46: [www.mediaserver.hamburg.de/Michael Lindner](http://www.mediaserver.hamburg.de/Michael_Lindner); P. 5, 14, 49: [www.mediaserver.hamburg.de/Christian Spahrbier](http://www.mediaserver.hamburg.de/Christian_Spahrbier); P. 50: [www.mediaserver.hamburg.de/Sven Schwarze](http://www.mediaserver.hamburg.de/Sven_Schwarze); P. 18, 21, 23, 24, 38, 51: [www.mediaserver.hamburg.de/Roberto Kai Hegeler](http://www.mediaserver.hamburg.de/Roberto_Kai_Hegeler); P. 10, 17, 42 bottom, 45: Michael Zapf



Hamburg | Ministry of
Environment and Energy