HafenCity, Hamburg

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Hamburg, Germany is developing the HafenCity project to signifcantly expand the city center and launch Hamburg as a Eurpoean hub for commerce and trade.

Photo: *HafenCity Hamburg GmbH, "Projects" brochure March 2010*

KEY TIMEPOINTS

1989 Idea for new inner city district conceived after fall of Berlin Wall

1996 Confidential study completed

1997 "Vision HafenCity" goes public with a much smaller scope, inner city should regain its waterfront

1999 Kees Christaanse/ASTOC win master plan competition

2000 Hamburg Senate approves master plan

2001 Groundbreaking for 1st new building (for SAP)

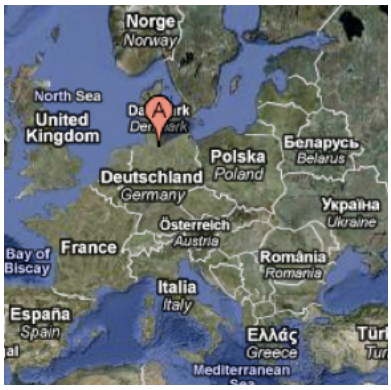
2002 Barcelona-based EMBT Arquitects win open space design competition for western end of HafenCity

2003 Customs barriers removed after 115 years and port zone dissolved

With the fall off the Berlin Wall in 1989 and the democratization of Eastern Europe and the Baltic, Hamburg, Europe's second largest port, recognized an opportunity to become a central hub for commerce and trade. In 1991, the mayor commissioned an unofficial study to look at the redevelopment of the inner city port fringes, which had become defunct as capacity had been developed farther south along the Elbe to accommodate larger scale container operations. The original study was done clandestinely to avoid disputes with the Port and private building owners, as well as inflating property values. The city began acquiring buildings via it's own private corporation HHLA und Logistik AG, and through a second private firm founded for that purpose in 1995 (now the face of the project - HafenCity Hamburg GmbH).

In 1996, a confidential study was completed by Hamburg architect and academic, Volkwin Marg, who proposed many of the development principles adopted in the master plan including the urban structure and mix of uses. The idea went public in 1997 as "Vision HafenCity", but was much smaller in scope than the project approved in 2000. Initially only 388 acres was to be developed into an upscale inner-city district with residential, work, cultural and recreational uses.

An urban planning competition was launched in April 1999 and the Dutch/German team Kees Christiaanse/ASTOC were selected by an international jury in October 1999. After the plan was approved in 2000 it was opened to public discussion.



Hamburg's seeks to capitalize on its central location.

Map: Google Maps

KEY PLAN ELEMENTS

Interaction between existing and new buildings and the water

Building elevation as a part of flood protection concept

Public access and character on ground floor

Fine-grained mix of uses

Neighborhoods and development timeline

Central city presence and role

Model for the 21st century European inner city

Flexibility to adapt to changing conditions

HafenCity Hamburg uses fuel cell technology to minimize carbon emissions as well as a planned hydrogen-powered bus fleet.
Photo: *HafenCity Hamburg GmbH*

Design Concepts & Features

HafenCity aims to develop an existing island site plagued with soil contaminates into a fully functioning and attractive waterfront district of Hamburg. Situated on the Elbe River, it is built among a series of canals, dikes and quays that for decades served the maritime industry of the Hamburg Port, and still functions, to a lesser degree, as a center for water transport. Prior to development, existing brick structures typical to pre-war German building lined the northern area of the site, while the southern area lay unused. Through development the need to deal with large tidal variation required the use of a double parallel infrastructure system on two different levels. This duel system is seen throughout HafenCity's network of car, bike and foot pathways and is echoed through in an intricate system of 25 new or renovated bridges that connect the development to the rest of Hamburg-Mitte.

HafenCity is characterized by a diversity of uses and both large and fine grains. The mix of industries within and surrounding the development, and the uses by citizens enrich the space with an authenticity found throughout neighborhoods and about individual buildings. With the variety of program - both public and private - all infused through both experimentation in development and traditional practices, an overarching concept plan required major focal points for designers and planners to consider. These driving elements would be manifested through a number of design features found throughout the development and strongly relate to the planning approach set forth at the start, and were implemented with a mix of physical design elements and policy.

Sustainability

Maintaining the highest standard for sustainable urban development from the start found root in the **redeveloping an urban brownfield**. Avoiding the consumption of previously undeveloped land, HafenCity was able to improve the value and quality of old industrial sites, replacing contaminated areas with new soil. The site is also made accessible to residents and visitors, with new rapid U4 transit underground stations to augment the **public transport network** of the nearby U1 and U3 sites. This idea of a flexible network is also seen in the tightly knit mesh of streets, sidewalks and walkways, providing citizens with quicker and more customizable paths to and from their destinations. Furthering the goals of ecological responsibility at the site level, district heating supplies buildings with a mix of energy sources from **solar thermal and fuel cell power**.

To encourage individual projects within the city to actively pursue the stated goals of ecological responsibility, HafenCity Hamburg GmbH **pioneered an eco-certification program**, available prior to the national award system for sustainable buildings, maintained by the German Sustainable Building Council.

New Urban Typography

In the new district of HafenCity, squares, promenade and parks play a crucial in the fabric of the district, linking various parts of the city and acting as contributing elements of the cityscape themselves. So much so, in fact, that **20% of the development's total area is devoted solely to public space**, squares and parks that are also used to inform the designs of the private outdoor areas (another 20% of the total development area is privately owned space with public obligations or right of way). This idea of the public use of the city also inspired

the **restructuring and appropriation of water surface** to for public use.

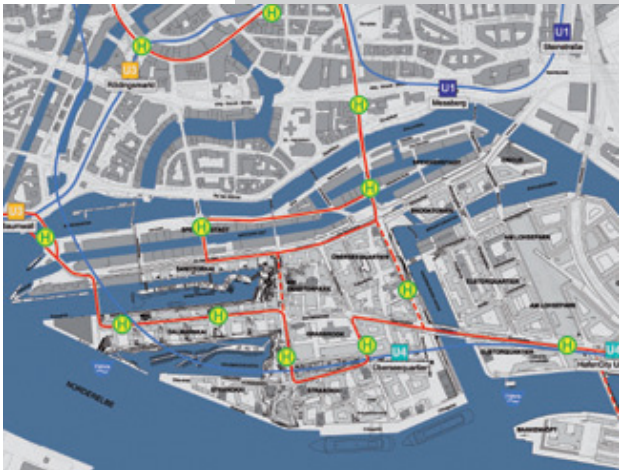
Within this language of public outdoor space, the new district had to navigate a new typography that considers emergency flooding levels and the means by which development would actually happen. To accommodate an eight meter variation of possible water levels, a **system of plinths and bases** allowing development to occur quickly, without larger operations (such as reclamation). The plinths made development of the lowest floors possible, and design elements, such as **water-tight hatches**, assured that they were water-tight against high flooding. And, the **plinths often took the shape of public spaces** - promenades along the water, or squares in various locations - that echoed similar elements on a higher system of platforms, allowing the development as a whole to be experienced on two (and sometimes three) levels. These layers are connect using a variety of stairs, walks, **ramps and bridges** (some multi-storied themselves), including those that connect HafenCity to the area and neighborhoods directly across the canal.

A very dense network of routes prioritizes pedestrian and bicyclist traffic.
Photo: *HafenCity Hamburg GmbH*

Urban Mobility as a Framework

HafenCity is linked to a complex and efficient transport system typical to German cities. Because the development is technically an island, designers were presented with a challenge when considering how to extend such a network to a site with such topographical variation. HafenCity has the advantage of proximity to the city center of Hamburg, but might still be considered isolated, and developers realized the importance of **developing connections to and from the area, as well as ones within**.

To realize the desired richness in the development, HafenCity was laid out with a **very dense network of routes to accommodate both pedestrians and bicyclists** in addition to motorized transport. Unlike many developments however, these non-motorized users were prioritized: **pedestrians have two and half times more kilometers of pathway** than cars. Further, 70% of foot and cycle paths are separated from motorized traffic. Considering footpaths and cycle routes from the start, with **flexibility for addition and densification** over time, distances for non-motorized users are short, making everything within and outside of the development easy to reach. Further consideration for those on foot are evident in the many public or publicly accessible paths through private building plots.



HafenCity is served by a new bus system and planned subway extension.
Photo: *HafenCity Hamburg GmbH*

To accommodate such a vision of priority for non-motorized users, HafenCity had to juggle policy requirements for parking capacity. Developers wanted to encourage walking and cycling without making it prohibitively difficult to access the site using private or public vehicles within the site. In this case, the advantages of the **double parallel infrastructure** within the site and to the mainland area north of the island (via **25 new or renovated single- or double-level bridges**) greatly aided the design. For example, parking requirements were usually met through basement level facilities, accessible at restricted points, and separated from pedestrian thoroughfares. This allowed for minimal surface parking, further prioritizing non-motorized users in outdoor spaces, and provided a safe utility for flood-protected levels, which were generally not desirable for habitation.

HafenCity in Numbers

Total size: 157 hectares

Land: 123 hectares

More than 2.0 million sq meters gross floor area

20% of site dedicated to public open space

Additional 20% of site dedicated to privately-owned public right of way

5,500 homes for 12,000 people

Business premises with capacity for 40,000+ jobs

Expansion of Hamburg's city center by 40%

Currently 67 projects planned, under construction or already completed

700+ separate architects involved in individual buildings

Representative Designers

Kees Christiaanse & ASTOC

EMBT Arquitects

WES and Partners

Dietmar Fiechtinger

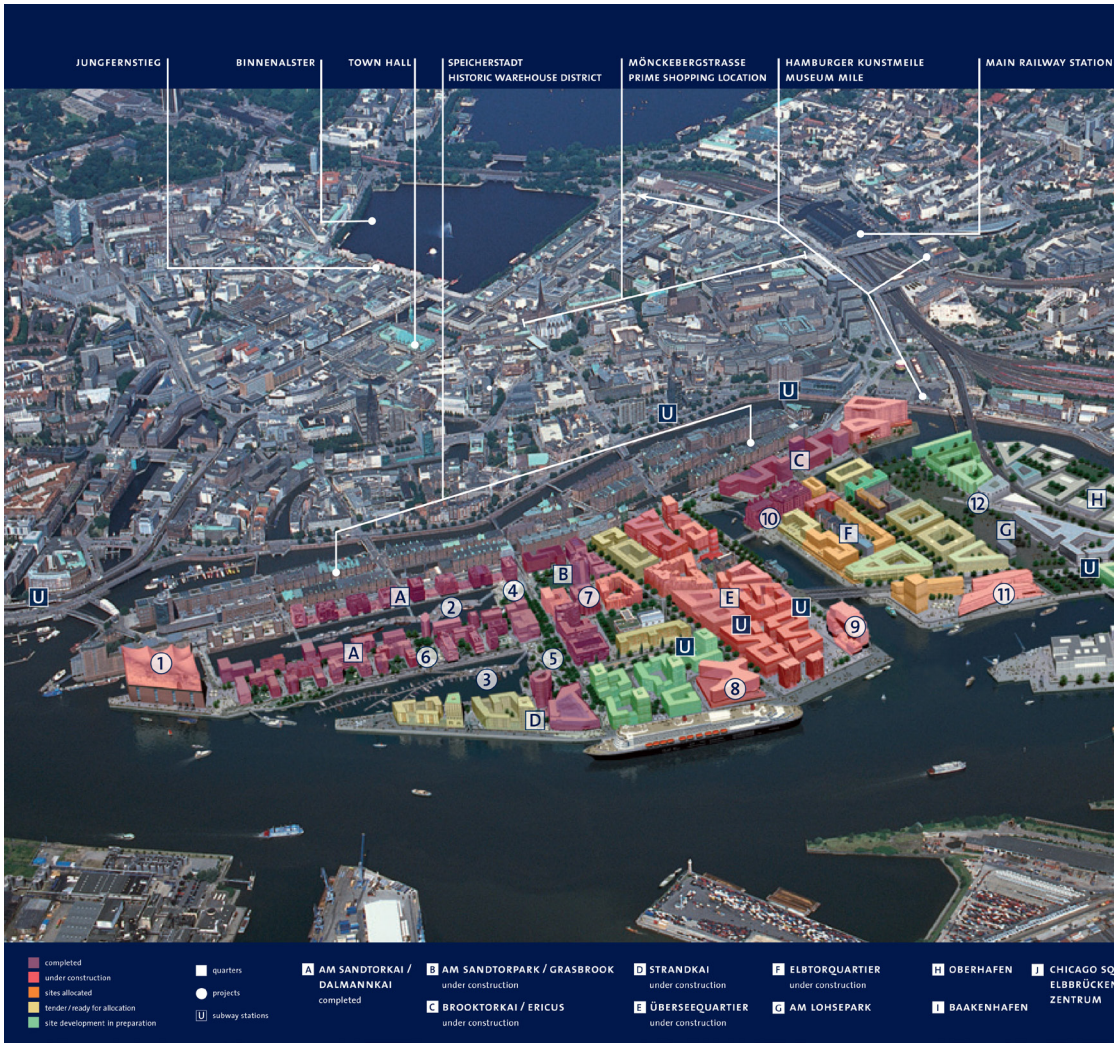
Herzog & de Meuron

Implementation

HafenCity, a 40% expansion of the Hamburg inner city, is being developed in 12 quarters from west to east and from north to south. Area currently under construction, including that completed, extends 1.1 kilometers and extends from the Elbphilharmonie Concert Hall to the tip of Dalmannkai from east to west and from the Speicherstadt to the banks of the Elbe from north to south. Nearly half of the development set forth in the master plan has been completed, is under construction or has been sold with binding building contracts. The eastern development foreseen in the master plan is being revised.

As of March 2010, 1500 people are living in the new neighborhoods, 6000 people are employed in the HafenCity and visitor numbers continue to rise. The first neighborhood, Am Sandtorkai/Dalmannkai, was completed in 2009, and a number of social spaces and networks have emerged including cafes, restaurants, bars and shops. A primary school was also opened in 2009.

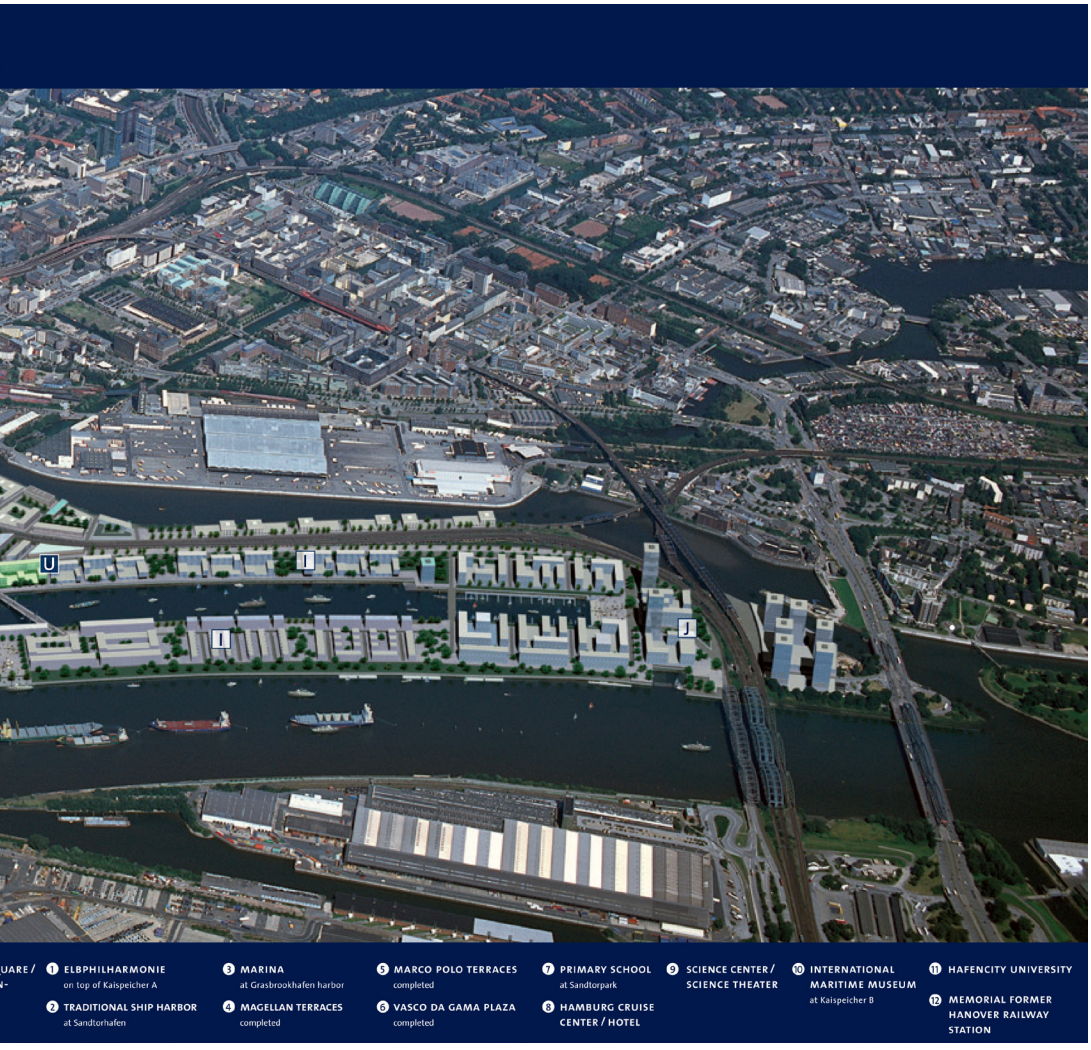
Construction of the next quarter, Am Sandtorpark/Grasbrook, will be completed in 2011. Development of the Elbtorquartier is also progressing.



Businesses already operating in other areas underdevelopment and include Germanisher Lloyd (1,600 employees) in the Brooktorkai/Ericus, Unilever (1,100 employees) and Marco Polo (58 residential units) in the Strandkai. In the Ueberseequartier, the largest city center site at 19.5 acres, the Greenpeace headquarters, the design center design port hamburg as a residential building have been under construction since early 2010 and will be nearly completed in 2012. The Ueberseequartier subway station will begin operating in 2012.

Information Sources:
HafenCity Hamburg website http://www.hafencity.com
HafenCity Hamburg “Projects” brochure
The Green Changemakers - HafenCity: A Case Study on Future-Adaptive Urban Development
http://green-changemakers.blogspot.com/2010/09/hafencity-case-study-on-future-adaptive.html

Overview of HafenCity Masterplan showing district and quarters and neighborhoods as well as stages of completion. Photo: *HafenCity Hamburg GmbH*



Connectivity

Key Distances
Town Hall: 800 meters

Main Station: 1100 meters

Higher Education
International School of Management

Kuehne Logistics University

HafenCity University

Cultural Institutions
Elbphilharmonie Concert Hall (mixed program)

International Maritime Museum Hamburg

Science Center with Science Theater

Public Waterfront
10K quayside promenades

Magellan Terraces: 4,700 square meters

Marco Polo Terraces: 6,400 square meters

Vasco da Gama Plaza: 2,700 square meters

Water
Development elevated 7.5-8 meters to maintain access to the river and tidal fluctuations.

Transportation
New subway stops, efficient road network with connections to city center and freeway

Evaluation

Subjected to varied criticism and praise, HafenCity Hamburg is realizing both successes in planning elements and continued challenges that must be resolved to create a rich urban development.

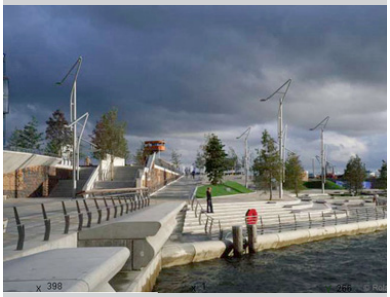
Successes

In setting up a framework from which to work, planners and designers working on HafenCity were able to connect a previously disparate and contaminated land mass to the rest of Hamburg. This connectivity - accomplished with various levels of success - was achieved by using **existing systems and complementing or enhancing them**. For example, by prioritizing non-motorized users through a dense network of foot and bike ways, layered onto the neccessary traffic infrastructure, public spaces within the development can better draw in Hamburg citizens. These networks act in conjunction with a diverse mix of uses, activity and recreation, providing amentities that **entice users to stay**.

A similar strategy was successully used in HafenCity's focus on sustainable development. District power via renewable sources as well as innovative transit technology and progressive policy **showcases how sustainable strategies** have allowed the development to achieve connection to an existing system of reliable public transportation and a city that is seeking **a path to a greener future and a larger role in a global community**.

Further, developers used design elements and features to **overcome site challenges**, such as large tidal elevation swings. Implementing a double parallel infrastructural system out of neccessity, they were able to play with physical connections to create **interesting and surprising elements** such as floating docks that added a third level that enriched the large promenades.

Photos: *ELBE&FLUT on http://green-changemakers.blogspot.com*



Opportunities for Improvement

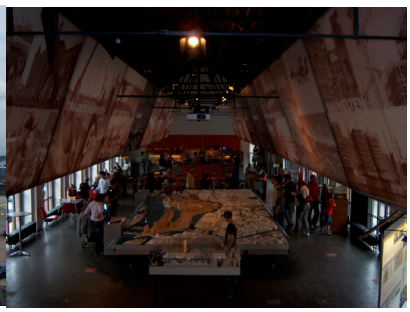
While overall initial impressions show the improvement the development has had on the area, further consideration of existing context and means of implementation might have created an even richer product. Further, the continued realization of the new built environments has led, and will continue to lead to unforeseen consquences.

One reoccuring criticism, for example, describes the development as **hard and sometimes cold**. This might be caused by the large amounts of hardscape in camparison to green spaces; it could relate to the view that the architecture tends to be physically dominating; or it might be an unintended consequence of the dense network of foot, bike, and automobile pathways. Regardless, users might feel that the development is at scale to which it is difficult to relate- a scale defined by building heights, facade treatments and sizes of and programming within designed public squares. This might be improved by introducing a variety of scales and typologies, increasing the porosity of facades, or varying surface treatment and massing of public squares.

In the vein of landscape design, one might also argue that the push for a sustainable development neglected issues of inviting natural landscape design. In fact, other than the plantings within the larger celebratory squares, much of HafenCity seems to be **lacking trees or other such natural elements** for visitors to enjoy. This might be explained by poor soil conditions.

Aerial view of Marco Polo Terraces looking north. Photo: *T.C. Kraus*

Also, though designers did an admirable job of using the tidal variation as an opportunity, one might argue that characteristics of the duel parallel infrastructure system creates its own problems. This is evidenced by the separate levels of pedestrian walkways around the canal and quay that **block lines of sight, breaking continuity** within the development and create **unwelcoming spaces**. For example, pedestrians on the south side of the development cannot see the upper promenades, while those using the walking paths surrounding the quay are subject to long views down the water and **tall solid facades**. Further, the double storied open bridges connecting the development to the adjacent neighborhood could serve as potential **locations for illicit activity**. Similar problems of physical connectivety are also seen in the attempt to connect HafenCity to the rest of Hamburg. Though the many bridges provide physical connection, the historic-looking buildings that line the northern part of the development create a **strong monotonous perimeter that can be perceived as intimidating or unwelcoming** especially when coupled with an existing canal.



Public invited into space early and provided with ample education, but opportunities to influence planning and design limited.
Photos:
Mary Roderick

Applicability of HafenCity to the Seattle Waterfront

Differences

Politically-motivated, top down development

Expert-driven, rather than public process

Goals of an entirely new city district

Completely unused, contaminated site

Municipal acquistion of port lands to prevent speculation

Similarities

Historically industrial transformation that is still influenced by industrial forces

Stong one-way axes for connections coupled with extreme challenges in the opposite axes

Physical barriers creating separation from existing development (canal or viaduct)

Rich historic fabric layered with new development