

HAMMARBY SJÖSTAD SITE FACTS

Developer: Multiple *

Architect: Jan Inghe-Hagström #

Population: 17,000

Projected Population: 24,000

Developed Area: 130 ha

Total Area: 160 ha

Current Density: 131 persons/ha

Projected Density: 150 persons/ha

Current Residential Units: 8,000

Projected Residential Units: 11,000

Construction Began: 1999

Planned Completion: 2017

Distance from City Center: 3 km

Cars: 210 cars/1,000 residents

Parking Spaces/Residence: 0.65

Non-motorized Mode Share: 27%

Public Transport Mode Share: 52%

Households with Carsharing: 18%

* Over 30 developers; key developers are JM, Skanska, Family Housing, Swedish Housing, HSB, SKB and Borätt.

Jan Inghe-Hagström designed the strategic masterplan. Other architecture firms involved include: White Architects, Nyréns Architect Firm, and Erséus.





CASE STUDY

Hammarby Sjöstad

STOCKHOLM, SWEDEN

Nicole Foletta, ITDP Europe

BACKGROUND

Hammarby Sjöstad is a brownfield redevelopment with mixed uses, carsharing, bikesharing, good transit access and high quality bicycle infrastructure. Car use and transport-related emissions are lower in the development than in comparable reference districts or the city as a whole.

Hammarby Sjöstad is recognized around the globe for having implemented an integrated approach to district planning incorporating sustainable resource use, ecological design and low-carbon transport. The 160 hectare district was built on a former industrial and harbor brownfield area located on the south side of Hammarby Lake, three kilometers south of the Stockholm city center (Photos 1 and 2). The redevelopment has its roots in Stockholm's bid to host the 2004 Olympics. Hammarby Sjöstad was meant to be part of an ecological Olympic Village. Although Stockholm did not win the bid, planning moved forward and construction of the project began in 1999, converting the site from a run-down industrial area into a modern, environmentally sustainable, mixed-use district with good public transit connections. So far, 130 of the total 160 hectares have been developed including 8,000 residential units that now house some 17,000 residents. By 2017 the City anticipates the development will be complete with 11,000 residential units and 24,000 inhabitants (*City of Stockholm Website*).

Hammarby Sjöstad's success can be attributed to strong environmental goals that shaped the development plan, incorporating land use, transportation, building materials, energy, water and sewage, and solid waste. All of the authorities and administrations normally involved in the development process collaborated to create a plan and conceptual approach to the project with a focus on sustainable resource use. The implementation of a holistic environmental profile for a whole district was a new concept when plans began in 1996.

The city imposed strict environmental requirements on buildings, technical installations and the traffic environment. The goal was to

halve the environmental impact compared to a typical development built in the 1990's. The goals related to transportation in Hammarby Sjöstad were (*Fränne 2007*):

- 80% of residents' and workers' journeys made by public transport, bike or foot by 2010
- At least 15% of households having carsharing memberships by 2010
- At least 5% of workplaces having carsharing memberships by 2010
- 100% of heavy transportation by vehicles meeting environmental zone requirements

PLANNING PROCESS

The planning and design of this project was made easier because the City had acquired most of the land in Hammarby Sjöstad. The local authority took leadership at every stage from development of the masterplan to construction, spurred on by the City's sustainability program which includes targets for decontamination, use of brown-field land, provision of public transport options in order to discourage car use, energy consumption, water conservation and recycling. In addition, since all planning applications in Stockholm are based on life-cycle cost analysis, it was easier for the development to justify higher initial investments in better performing building design and transportation infrastructure.

The first step in the planning process was the development of the strategic masterplan, led by architect Jan Inghe-Hagström, at the Stockholm City Planning Bureau. The plan is divided into 12 sub-neighborhoods, which are being developed in phases. A process called "parallel sketches" is being used in which the City selects three to four architects/planners in the private sector to draw up detailed proposals



Figure 1: Map of Hammarby Sjöstad

for a sub-neighborhood. The city evaluates each of the sketches and combines the best features to create the agreed upon masterplan.

The city planning and design team then prepares a design code for each sub-neighborhood in partnership with the developers and architects. This design code is included in the development agreement between the developer and the City. The design code is taken through the local authority political process in order to grant planning permission; the code provides an overview of the layout, form, and structure of each block including key landmark buildings, public spaces and pedestrian routes.

In order to provide architectural diversity, and to inspire higher standards of design through competition, a consortium of developers and architects are then invited by the City to develop each plot or individual building within the sub-neighborhood, according to the design code. So far over 30 different developers and more than 30 architects have been identified. Key developers are JM, Skanska, Family Housing, Swedish Housing, HSB, SKB and Borätt (*CABE Website*).

KEY POLICY AND DESIGN MEASURES

The integration of transportation and land use planning was recognized as a key component affecting the sustainability of the project. Expansion of the district has been complemented by transport investments including increased bus service, cycle paths, pedestrian bridges, ferry service, and an extension of the tram line. Development has been focused on a dense settlement structure, concentrated along main transit corridors. In order to discourage car use, parking in the area is limited and is priced. Key policy and design strategies applied are described below.

Substantial investments were made in public transport in the area, including an extension of the Tvärbanan tram line (Line 22), which runs through Hammarby Sjöstad with four stops in the district (see Figure 1 and Photo 3). The line operates from 5:30am to 1:00am. This orbital line incorporates several features which enhance quality of service, including level-boarding at stations (Photo 4), which

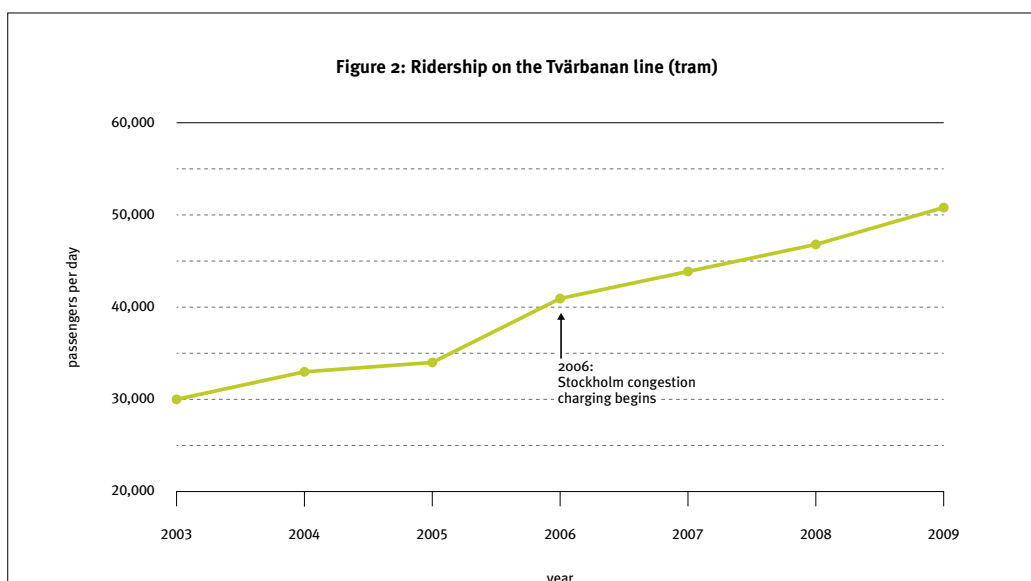
allows easier access to the trains, and message boards providing real-time arrival information of the next trains. In addition to the tram line, two bus routes serve the area.

The tram line serves a whopping one third of all trips made by residents (*Brick 2008*). Figure 2 shows a dramatic growth in ridership on the Tvärbanan line after the introduction of the central Stockholm congestion charge in 2006. Hammarby Sjöstad lies just outside of the central Stockholm congestion zone. This increase in ridership demonstrates the effectiveness of combining push (congestion pricing) and pull (improved transit) methods to shift travelers from cars to more sustainable modes.

The Gullmarsplan Tunnelbanan (metro) station lies just outside the border of Hammarby Sjöstad. This station serves the T17, T18 and T19 (metro) lines and provides direct service to central Stockholm at 7-8 minute frequencies during peak hours. The station also serves as a multi-modal transfer facility with connections to the Tvärbanan tram line and numerous bus lines.

In addition to providing convenient access, fare structure can also help drive public transport use. Public transport tickets in Stockholm County are integrated and zone-based. The same ticket can be used on the bus, tram or metro, improving ease of transfers. Several ticket options are offered from single tickets to annual travelcards, all with both regular and reduced prices. An integrated smartcard called SL Access has recently been implemented. Transit tickets and passes can be loaded onto this smartcard. An SL Business Card is also available for employees of participating companies. Through this program, the employee is given a travelcard at a discounted price, and the cost is deducted from his salary; the employer pays social security contributions. This is a way for companies to encourage employees to use public transport. Another feature aimed to improve ease of ticket purchase is an innovative option which allows passengers to purchase a transit ticket through a text message on a cell phone. The ticket will appear on the cell phone screen and must be shown to the bus operator upon boarding (*SL Website*).

A ferry service was introduced which transports passengers from Hammarby Sjöstad to the Stockholm city center and to



Blomquist, 2010

* data recorded each year on an average winter day

Södermalm, an island located between Hammarby Sjöstad and the city center (Photo 5). More information about these two ferry lines is summarized in Table 1. Ferry service is run by the city of Stockholm. Bicycles can be taken on board all ferries and ferry terminals are located near bicycle lanes, providing an easy transition between bike and ferry. Studies have suggested that introduction of the ferry service has contributed to an increase in the use of bicycles and walking to/from Hammarby Sjöstad and that as much as 24% of travelers use the ferry for some portion of their trip (*Brick 2008*).

Cycling and Pedestrian Infrastructure

One goal was for Hammarby Sjöstad to be a healthy place for people to live; that offers opportunities for exercise, sports and culture. Numerous bike paths, pedestrian paths and footbridges (Photos 6, 7, 8 and 9; Figure 1) were built to meet this goal. Many of the paths provide an opportunity for scenic strolls along picturesque canals and through a variety of green spaces. The bicycle lanes also enable improved mobility, running along thoroughfares such as Lugnets Allé and Hammarby Allé. Providing safe, accessible bicycle and pedestrian infrastructure is important to both encourage healthy activities, but also to promote use of non-motorized forms of transport.

Bike Sharing

Bike sharing programs are being implemented around the world to make cycling in cities more accessible. These systems are often complemented by investments in bicycle infrastructure, providing safe spaces for users to ride. The bikesharing concept consists of providing public bicycles, available from docking stations spread throughout the city, for the purpose of travel.

The bikesharing program in Stockholm, called Stockholm City Bikes, began in 2006 and is operated by Clear Channel Communications. The company holds similar bikesharing programs in France (Rennes, Caen, Dijon and Perpignan) as well as in Barcelona, Oslo and Milan.

There currently 85 docking stations citywide, and one in Hammarby Sjöstad (Photo 10). At each station, spaces for 9 to

24 bicycles are available. The actual number of bikes available at any time depends on the number currently in use and the bicycle distribution patterns of users. Once the program is fully implemented, there will be 2,500 bicycles at 200 locations throughout Stockholm.

Bike share in Stockholm operates from April to October. Bikes may be picked up between 6:00am and 10:00pm, users can take the bike for up to three hours, after which they must pay a penalty. A membership and rental card are required for use. Two types of cards are available. A seasonal card may be purchased online for 200 SEK (21€) or at a retailer for 250 SEK (26€). A three-day card must be purchased at a retailer and costs 125 SEK (13€) (*City of Stockholm*). There is now an option to add a Stockholm City Bike membership to an SL Access smartcard.

Car Sharing

There are currently 37 low emissions carsharing cars with dedicated parking spaces located in Hammarby Sjöstad, belonging to three different car sharing organizations: Sunfleet Carsharing, Bilpoolen, and CityCarClub. According to a survey of residents in 2010, 18% of households have a carsharing membership (*ITDP Europe 2010*). In 2008, 100 companies located in Hammarby Sjöstad were reported as having a car sharing membership (*City of Stockholm Website*).

Parking

Hammarby Sjöstad has approximately 0.15 on-street parking spaces per household, and an estimated 0.55 spaces per household in public or private garages. The supply of parking is not evenly spread and in some parts of the district the practical parking supply will be much lower. Overall Hammarby Sjöstad has 0.65 parking spaces per household.

On-street parking in Hammarby Sjöstad is regulated in the same way as for the rest of the inner city. There is a charge to park between 9:00am and 5:00pm on weekdays (Photo 11). Evening and night time parking is free. Off-street parking is mainly operated by Stockholm Parkering, the city's parking company, which owns a

Table 1: Summary of Hammarby Sjöstad ferry service

Ferry destination	Travel time to destination	Frequency	Operating months	Hours of operation	Cost
Södermalm	5 minutes	10–15 minutes	Year round	06:00 to midnight	Free
Nybroviken (Central Stockholm)	25 minutes	1 hour	May 31–October 1	Weekdays: 07:30–17:30 Weekends: 09:30–18:30	Regular fare: 40 SEK (4.3€) Discount fare: 25 SEK (2.7€) Children under 13: free

<http://www.resse.se/index.asp>

Table 2: Parking prices in Hammarby Sjöstad

Time period	On-street parking	Off-street outdoor parking	Off-street garage parking
Per hour	15 SEK (1.5€)	12-15 SEK (1.2-1.5€)	20 SEK (2€)
Per day (24hr)	50 SEK (5€) *	60-80 SEK (6-8€)	100 SEK (10€)
Overnight	—	—	60 SEK (6€)
Monthly	700 SEK (73€) *	750 SEK (78€)	1,100–1,500 SEK (110–160€)
Yearly	8,400 v (870€) *	9,000 SEK (940€)	13,200–18,000 SEK (1,370–1,870€)

City of Stockholm, Traffic Administration

* with residential parking permit

number of garages and off-street parking lots in Hammarby Sjöstad. Additionally, a number of the housing co-operatives own their own parking and set their own prices for residents and there are also a few private car park operators. Table 2 shows the parking prices for Stockholm Parkering. The prices for off-street parking are comparable to other areas just outside the inner city, but a little lower than typical prices inside the inner city. Typically charging more for on-street parking spaces than for off-street spaces encourages long-term parkers to park off-street and maintains a larger number of on-street spaces available for short-term parkers, who have a faster turnover. Hammarby Sjöstad's parking pricing structure does not follow this strategy and it is recommended to raise on-street parking prices.

Urban Design

The layout of Hammarby Sjöstad was designed to integrate transportation, amenities and public spaces. The spine of the district is a 37.5 meter wide boulevard and transit corridor, which connects key transport nodes and public focal points, and creates a natural focus for activity and commerce (Figure 3).

Street Layout and Design

Two main thoroughfares, Lugnets Allé and Hammarby Allé, run through the district. These streets include tram lines in the middle of the street with boarding platforms on the outside. Beyond the boarding platforms there is one car lane in each direction and outside the car lanes are bicycle lanes followed by parking spaces and then pedestrian walkways. The bike lanes are painted on the street and

cars must pass over the bike lane in order to park. Pedestrian priority is given on the main streets, complemented by speed restrictions and frequent zebra crossings. A cross section view demonstrating the layout of Hammarby Allé can be seen in Photo 12.

Public Space Design

A network of varied parks, green spaces, quays, plazas and walkways runs through the district, providing space for outdoor activities. All public spaces are owned and maintained by the city of Stockholm (Photo 13). The initial goal for the development was to provide 25 square meters of public green space per apartment unit, for a total of 300,000 square meters in the district. So far a total of 280,000 square meters has been completed. The development also has a goal to provide 15 square meters of private courtyard space per apartment unit. (City of Stockholm Website)

Land Use Planning and Design

The general building layout of Hammarby Sjöstad is blocks built around an inner courtyard. The entire development is high density, but with the highest densities focused along the transit corridor, where buildings are 7-8 stories high. The average height of buildings in the district is 18 meters, or 6 stories. Safety on the streets is enhanced by providing a variety of ground floor uses, and facing balconies and front doors onto the street in order to increase "eyes on the street." The architectural style utilizes contemporary sustainability technologies and follows modern architectural principles, maximizing use of daylight and providing views of water and green spaces.

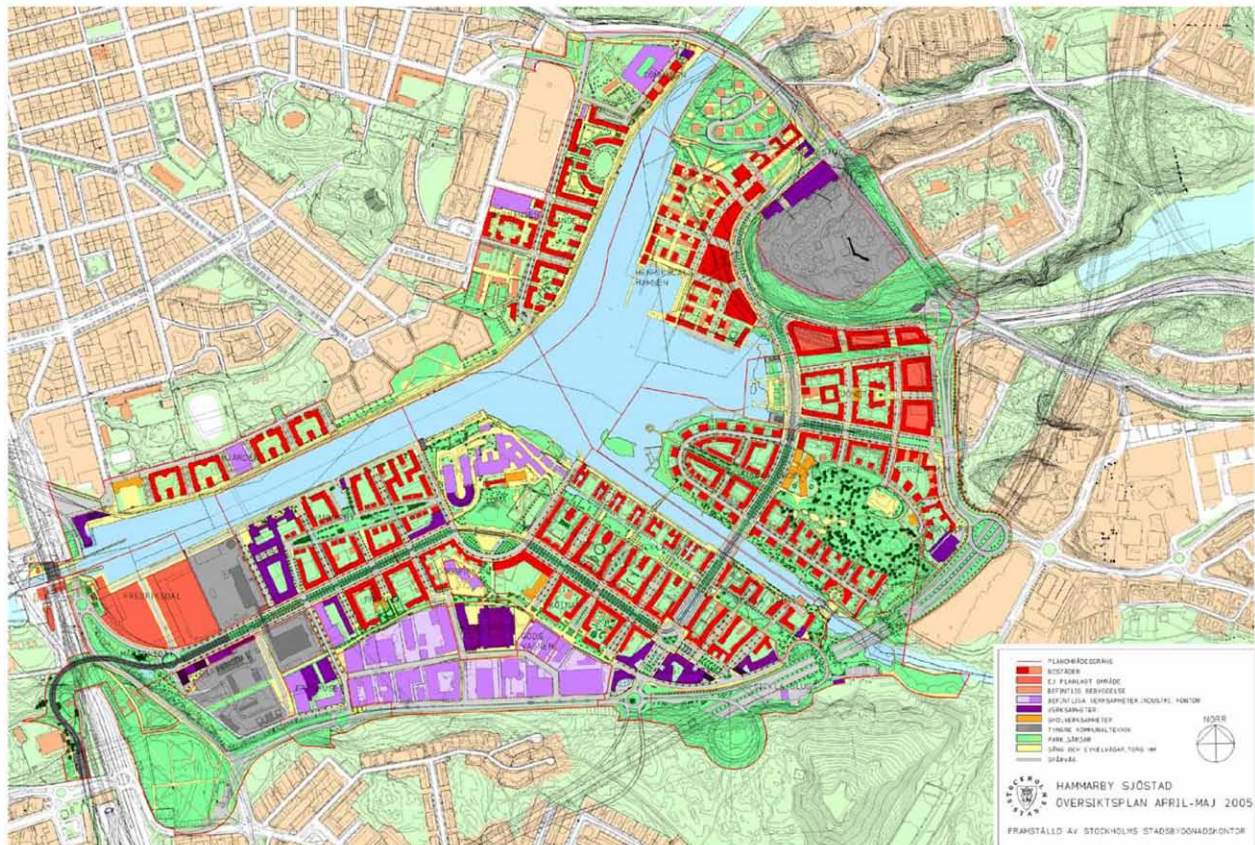


Figure 3: Hammarby Sjöstad Site Map



1
Hammarby
Sjöstad before
redevelopment



2
Hammarby
Sjöstad today

3 Tvarbanan line tram stop

The tram line was extended to serve Hammarby Sjöstad and now carries 33% of trips made by residents there.



4 Level boarding on Tvarbanan tram

Level boarding is one example of the high-quality features of the tram system, which also include long hours of service and real-time arrival information in stations and connections to Metro and bus lines.



5 Ferry terminal

Ferries connect residents to the city center. Bikes are allowed on-board and the ferry terminal is reachable by bikeways.



6
Pedestrian
pathways



7
One of
Hammarby
Sjöstad's
many bicycle
and pedestrian
bridges



8
Canal-side
bicycle path



9
Bicycle path
separated from
motorized
traffic

10

One of Stockholm's 85 bikeshare stations is located in Hammarby Sjöstad.



11

Hammarby Sjöstad has .15 on-street parking spaces per household, parking is charged during the day and free at night.



12

Hammarby Allé, one of Hammarby Sjöstad's two main thoroughfares, with center-running tram lines, driving lanes, bike lanes, parking and sidewalks. Pedestrians have priority.



13
plaza in
Hammarby
Sjöstad

A network of parks, green spaces, quays and walkways runs throughout the development.

14
Hammarby
Sjöstad café

Hammarby Sjöstad has over 100 retail units and restaurants as well as office space and some light industrial uses, employing over 5,000 people and providing convenient services for local residents.



STOCKHOLM DISABILITY PROGRAM

In 2004, the Stockholm Local Council adopted the Disability Policy Program whose aim was to make Stockholm the most accessible city in the world by 2010. To reach this goal, the document enlists a series of wide scale measures to be undertaken. In the transportation sector, the program recommends removing all physical barriers that can easily be removed. This includes widening doorways and installing handrails in public transport stations and providing level boarding of transit vehicles. The program also stipulates that all public authorities and private companies need to integrate financing of these measures into their budgets. The goal is to provide better access to disabled persons and, consequently, enhance democracy and social equity among all Stockholmers. Due to its goal of becoming an exemplary district for the future, Hammarby Sjöstad has paid special attention to satisfying these requirements (*City of Stockholm 2005*).

The residential units include a mix of tenures; 46% of the units are rented and 54% are owned. Most of the apartment units have one or two bedrooms, as seen in Table 3. In addition, the development has 59 apartments with 24-hour care for the elderly, 30 apartment units where assisted residential care is provided and 400 student flats.

The planning department recognized the importance of providing a mix of uses in order to ensure that residents have access to goods and services within walking distance. Therefore, the city initially offered a two-year rent-free subsidy in order to attract commercial operators and to ensure that service provision was established during the early phases of the development (*CABE Website*). This strategy was successful and today the area includes nearly 100 retail units and restaurants as well as office space and light industrial uses, employing over 5,000 people (Photo 14). In addition, at least five food stores are located throughout the development and no one lives more than one kilometer from a grocery store. The mix of uses in Hammarby Sjöstad includes the following institutional uses: twelve pre-schools (for ages 1–5), three primary schools (for ages 6–16), two high schools, a library, a cultural center, a chapel, an environmental center, childcare facilities and healthcare centers. A breakdown of the area of the various land uses can be seen in Table 4. (*City of Stockholm Website*)

QUANTITATIVE COMPARISON

Table 3: Breakdown of residential unit size in Hammarby Sjöstad

Area (ha)	
Studios	9%
1 Bedroom	35%
2 Bedrooms	32%
3 Bedrooms	21%
4 Bedrooms	2%
5+ Bedrooms	< 1%

City of Stockholm

Table 4: Planned breakdown of land uses in Hammarby Sjöstad

	Area (ha)	Percent of Total Area
Residential	90	56%
Public green space	30	19%
Other	40	25%
Total land area	160	100%

City of Stockholm

In order to quantify the benefits of the sustainability measures implemented in Hammarby Sjöstad, it is important to look at the development in the context of its location. Hammarby Sjöstad is located in one of the most progressive cities in the world with regard to sustainability. Stockholm is the winner of the European Green Capital city competition for 2010. The city has reduced carbon emissions by 25% per resident since 1990 and has established a target of reducing emissions from today's 4 tonnes of CO₂ per capita to 3 tonnes in 2015. These values are extremely low for developed countries, considering the entire country of Sweden has an average emission rate of 6 tonnes of CO₂ per capita, the average for Europe is 8 tonnes per capita and the average for the United States is 20 tonnes per capita (*EIA*).

The City of Stockholm has recognized the connection between land use planning and transport and has taken many measures to steer development in the direction of a dense settlement structure, complemented by investments in public transportation, cycling and pedestrian infrastructure. Furthermore, the city has successfully implemented a city-center congestion charge.

Density

Hammarby Sjöstad compares favorably with Stockholm, which stacks up extremely favorably against most of the rest of the world. Compared to both the inner city of Stockholm and the City of Stockholm itself, Hammarby Sjöstad has a higher population density, as seen in Table 5. The provision of on-street parking is lower for Hammarby Sjöstad than for the city; however, the provision of off-street parking is higher, bringing the total to 0.65 spaces per residential unit for both Hammarby Sjöstad and the city as a whole.

Car Ownership Rates

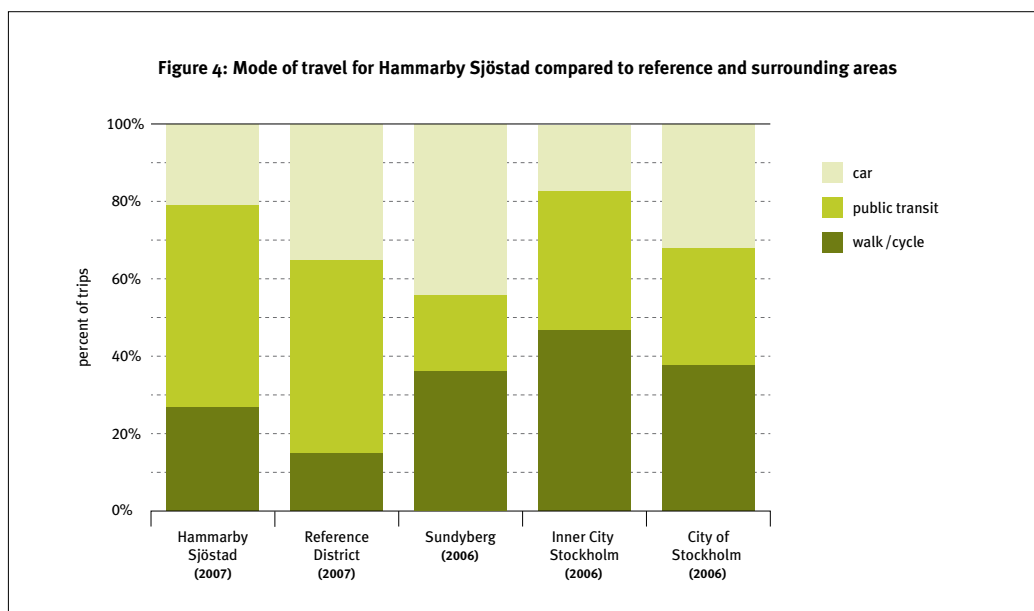
We also compared Hammarby Sjöstad to the municipality of Sundbyberg, a five kilometers to the northwest of the Stockholm city

Table 5: Hammarby Sjöstad as compared to nearby and surrounding areas

	Hammarby Sjöstad	Sundbyberg	Inner City Stockholm	City of Stockholm
Population	17,000	37,700	308,900	829,400
Area (ha)	130 *	900	3,500	18,700
Population density (persons/ha)	131	42	88	44
Average income (SEK/year)	356,000	272,000	na	293,000
Jobs per resident	0.3	0.5	na	na
Cars per 1000 residents	210	295	na	370
Car parking spaces/residential unit	0.65	na	0.65	0.65
<i>Mode share for all trips</i>				
Car	21%	44%	17%	32%
Public transit	52%	20%	36%	30%
Bicycle/ walking	27%	36%	47%	38%

City of Stockholm;
City of Sundbyberg;
Blomquist, 2010);
ITDP Europe, 2010

* current developed area



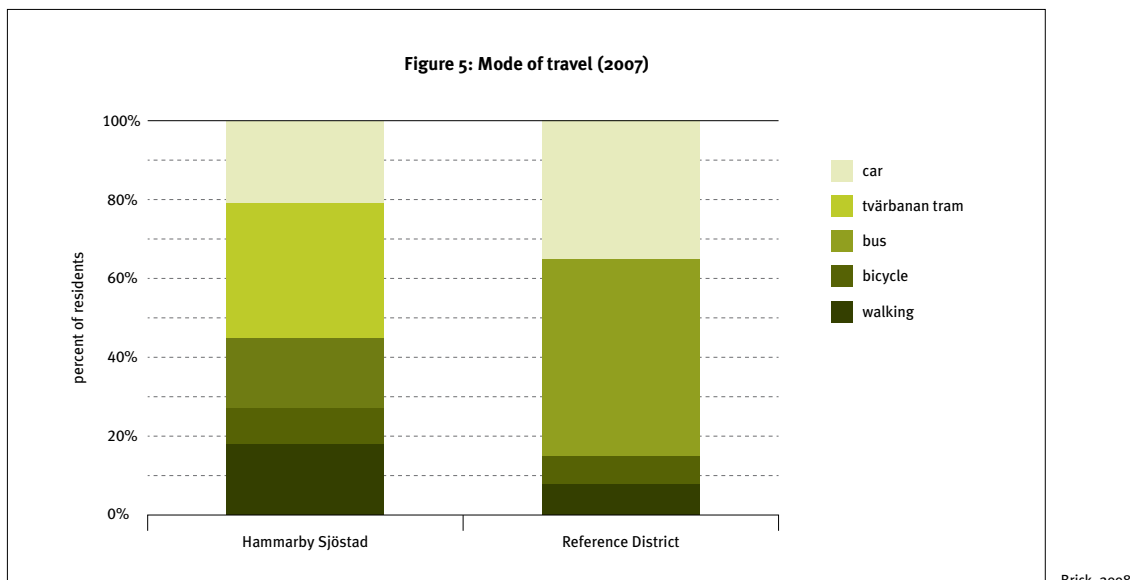
center which also has good public transit availability. Car ownership per resident is quite low in Sundbyberg (295 cars per 1,000 residents) and is even lower in Hammarby Sjöstad (210 cars per 1,000 residents). These values are both smaller than for the City of Stockholm (370 cars per 1,000 residents), which is already low by international standards in developed countries. These and other statistics are summarized in Table 5. In addition, bicycle ownership is quite high in Hammarby Sjöstad at 820 bikes per 1,000 residents (ITDP Europe 2010).

Mode Split

The policy and design measures employed in Hammarby Sjöstad have proven effective. Only 21% of trips made by Hammarby Sjöstad residents are by car, while 52% are by public transportation, and 27% by non-motorized modes. The percent of non-motorized trips (27%) is still not quite as high as for those in Sundbyberg (36%), Inner City

Stockholm (47%), or the city as a whole (38%), as seen in Figure 4. This may be due to the high concentration of jobs in Sundbyberg and Inner Stockholm, making it possible for residents of these areas to cycle or walk to work nearby. However, compared to a reference district without integrated policy and design measures, Hammarby Sjöstad has a higher percent of trips made by bike (9%) and on foot (18%) than the reference district's share of bike trips (7%) and walking trips (8%), as seen in Figure 5.

In addition, Hammarby Sjöstad has a much higher share of trips made by public transit (52%) than Sundbyberg (20%), Inner City Stockholm (36%) or the city as a whole (30%). This demonstrates that although residents of Sundbyberg walk or bike for more trips than Hammarby Sjöstad residents, for motorized trips, residents of Hammarby Sjöstad choose public transit over the car for a far greater percentage of trips than Sundbyberg residents. The breakdown of mode split for the regions discussed can be seen in Figure 4. Figure 5



shows a more detailed breakdown of mode split for Hammarby Sjöstad and a reference district. The Hammarby Sjöstad values are generated from surveys of residents. The reference district values are based on a previous overall study of comparable city districts, but have been adapted for Hammarby Sjöstad. (Brick 2008)

Furthermore, an internet-based survey of Hammarby Sjöstad residents conducted by ITDP Europe in 2010 asked respondents what mode of transportation they take most often to get to work. It was found that 3% of respondents walk to work, 14% cycle, 78% take public transit and 5% drive, as seen in Figure 6. This shows that residents overwhelmingly prefer to take public transportation to work rather than driving. Stockholm's congestion charge likely has an influence on this decision. In addition, the survey found that 39% of residents live less than 5 km from their place of work, 43% live between 5 and 10 km and 18% live more than 10 km from work. These short commute distances also make it easy to travel to work by non-motorized modes or public transit. The average one-way commute time of residents was found to be 33 minutes. (ITDP Europe 2010)

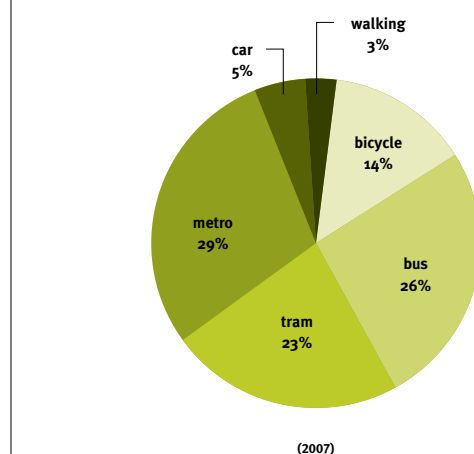
Transport-related Emissions

The low car ownership rate, low car mode share and short commute distances help to reduce the carbon footprint of Hammarby Sjöstad residents. CO₂ emissions per apartment from personal transport by car are more than 50% lower in Hammarby Sjöstad than in the reference district, as seen in Figure 7. These savings alone would yield a reduction of approximately 2,373 tonnes of CO₂ per year (Brick 2008).

Moreover, by measuring kilometers traveled per resident per year by both private and public transport, along with estimates of emission rates of vehicles, it is estimated that overall transport-related emissions for residents of Hammarby Sjöstad are less than half that for an average Stockholm resident and less than a third that of an average resident of Sweden, as seen in Figure 8.

The statistics presented in this section quantify some of the many benefits of integrated policy and design measures. These comparisons show that even in a city as ambitious as Stockholm, concentration of integrated policy and design measures in a single district can bring about further reductions in carbon footprint.

Figure 6: Mode of travel to work for Hammarby Sjöstad residents



Author's elaboration

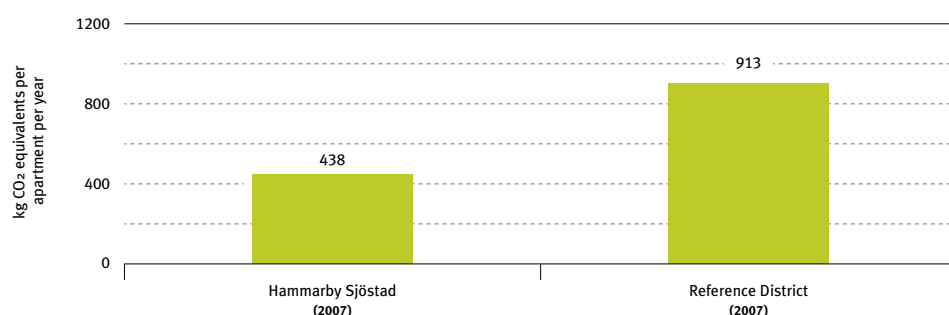
LESSONS LEARNED

A holistic approach to planning, grounded in strong environmental goals can help shape better new developments. These goals should be created as early as possible, making it possible to integrate them into every part of the infrastructure early in the planning process. These goals should be formed in close cooperation with all stakeholders and should include a discussion of possible technical solutions and their potential results within the planned district.

Context is also important to new developments. In Stockholm the availability of high quality transport and a congestion charge has a strong influence on all residents, including those in this new development.

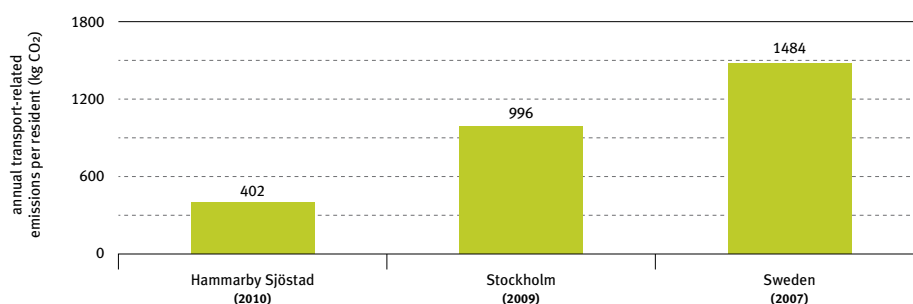
Meeting environmental goals does not end once the development is built. The district plan should include information and incentives to influence the behavior of residents in the long term. Following this line of thought, new urban districts should design an evaluation process with a structure for follow-up with a clearly defined feedback process to ensure continued sustainability of the project. ■

Figure 7: Average car emissions



Brick, 2008

Figure 8: Average transport-related emissions of residents

Author's
elaboration

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Image credits

Figure 1: <http://maps.google.de/maps/ms?hl=en&ie=UTF8&vps=3&jsv=298d&oe=UTF8&msa=o&msid=116478322990710211544.000490d42ec5947427b82>

Figure 3: <http://www.hammarbysjostad.se/>

Photo 1: GlashusEtt

Photo 2: Lennart Johansson, Stockholm City Planning Department

Photos 3, 5, 6, 14: Luc Nadal, ITDP

Photos 4, 7: Cathleen Sullivan, UC Berkeley

Photo 8–11: Qian Jiang, ITDP Europe

Photo 12: Google Maps

Photos 13: Simon Field, ITDP Europe