

LEARNING FROM COPENHAGEN AND MALMÖ



September 2010

TEN Group

TEN is a small group of senior local government officers in London who have met regularly over seven years to share ideas and exchange knowledge on how to achieve urban renaissance. Using the principle of *looking and learning* they visit pioneering projects to draw out lessons that can be applied in their own authorities. In the process the members develop their skills as urban impresarios and place-makers, and are able to build up the capacity of their authorities to tackle major projects.

Photographs: Copenhagen City Council, Professor Sir Peter Hall and URBED

*Front cover: top left Copenhagen sky line, top right Bo01 Malmö,
bottom left Ørestad and bottom right Augustenborg, Malmö*

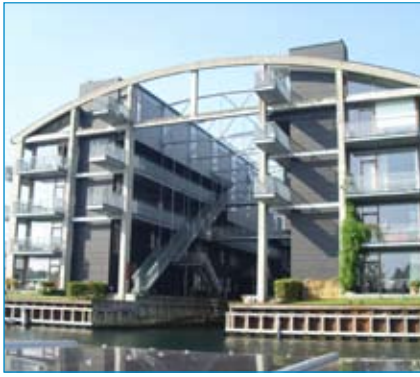
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Copenhagen



Malmö



Ørestad

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INTRODUCTION

This report (and accompanying Power-Point presentation) draws conclusions from the TEN Group visit to Copenhagen and Malmö on the 23rd and 24th September, which was the seventh annual study tour to a major European city. The visit focussed on Danish experience in taming the car and in developing planned urban extensions, and on Swedish experience in regenerating Malmö as an exemplary sustainable city.

We had guided tours of the new town of Ørestad, and in Malmö the eco-town of Augustenborg, a renewed post-war housing estate, and Bo01, the first stage of the development of the Western Harbour.

The report incorporates material from the Briefing Pack, including a paper by Professor Sir Peter Hall on planning history, discussions on the lessons from the visit and some excellent reports on Plans and Strategies for Malmö's Western Harbour and their Guide to Sustainable City Development.

We are very grateful to all those who helped us plan the visit, and who met up with us, and hope the report will help in building stronger relationships between our cities.



Top: Apartment blocks in Ørestad new town

Middle: Greening in estate renewal, Augustenborg, Malmö

Bottom: Bo01 SUDs scheme, Malmö

I. THE STUDY TOUR ITINERARY

The TEN Group visit started on Thursday with a meeting at Copenhagen City Council's Environmental Department with senior officers who presented the Danish approach to new settlements and social housing, and their experience with upgrading main roads into the city centre to favour pedestrians, buses and cyclists. After walking along the waterfront, with its exciting new library 'The Black Diamond' and attractions such as the harbour-side swimming pool, we then took a canal boat trip to view some of the huge range of recent waterside developments, as well as some of the city's landmarks.

After lunch in the restored warehouse quarter of Nyhavn, we took the new driverless Metro out to the new town of Ørestad, which is also on the railway line to Copenhagen Airport and the Øresund Bridge to Sweden. We were shown around by Kirsten Ledgaard the Senior Head of Planning for the City and Port Development Corporation, who had formerly been an engineer with Danish Railways. Delegates then had a chance to stroll along Strøget, a mile of pedestrianised shopping streets, which has since been extended out to other parts of central Copenhagen.

On Friday we took the train across the Øresund Bridge, which since 2000 has connected Denmark with Sweden, to visit Malmö, which is Sweden's third city, with 280,000 residents, in a metropolitan agglomeration with a combined population of 3.7 million. Malmö responded to the closure of its shipyards by promoting itself as a model for sustainability and knowledge based work, and is now seeking to become a model for social as well as environmental sustainability. We were

shown round the Ekostaden Augustenborg Community Project by Louise Lundberg from the Green Roof Institute. Augustenborg is a post-war housing estate, where a programme of initiatives to cut energy consumption and apply environmental measures has upgraded the image of the neighbourhood, and also cut housing turnover. We then took the suburban train back to the centre, before being shown around Bo01 by Tor Fossum, Project Manager, City of Malmö Environmental Department. This is an eco demonstration project within the vast Western Harbour area, and its former shipyards, which could be a model for how to regenerate former industrial areas.



Top: Ørestad model

Right: Bo01, Malmö

Bottom: Meeting with
Copenhagen City
Council officers



2. LEARNING FROM COPENHAGEN

2.1 Sustainable urban development

Copenhagen has been voted the second most liveable city in the world by Monocle Magazine (the first is Vancouver), and comes top in Siemens ratings of cities in terms of their greenness. As the former capital of an empire, Copenhagen still feels grand, while enjoying a lively human scale lifestyle. It is one of a number of Scandinavian cities that have overcome their peripherality and lack of natural resources through well-conceived and executed public investment. The city as a whole has a population of 1.7 million out of a total Danish population of some 5 million, but effectively forms part of a metropolitan agglomeration on both sides of the Øresund with a population of nearly 4 million.

According to the Danish Minister of Culture, who spoke at an event on June 29th run by New London Architecture to draw lessons for East London, what makes Denmark special is their *'concern with combining aesthetics, and a city that looks good, with a city that also is fair to all its citizens'*. The Danes believe that the quality of the environment affects people's behaviour, and have been putting social democratic principles into practice for many decades. There is a tradition of municipal leadership, despite there being seven different mayors in the conurbation. Copenhagen is one of the few cities that uses Land Value Taxation, and this no doubt helps to ensure that all the city's space is well-used, with little vacant space.



Top: Restored warehouse quarter of Nyhavn and historic Copenhagen

Bottom: The Black Diamond, Copenhagen's new library and The Danish Royal Theatre

Instead of going for a Green Belt, as in London, Copenhagen adopted its famous Finger Plan (EGNSPLAN) in 1948, in which development was concentrated along a series of five corridors based on public transport routes into the centre. The latest is Ørestad, an extraordinary 'new town in town'.

Much of the city centre dates from the 17th and 18th centuries, with some grand buildings, but the overall feeling is one of a relatively compact and coherent city, with extensive water areas that assist (and sometimes obstruct) personal navigation. Major regeneration projects have also taken place along the very extensive waterfront, with the result that wealthier Danes have been attracted back to live in the city centre.

Today there are plans to provide homes and jobs for 40,000 more people over 40 years with 3.4 million m² of construction. The watersides have been opened up, and there are a number of major new developments of former industrial sites. Use has been made of international architects, often selected through competitions, to achieve a diversity of styles. As a result living in the city, and in the new developments, is very popular, and for a long while every new apartment was sold off plan. With the financial crisis, developers have stopped building, and plans may need to be reconsidered.

Regional Structure – Finger Plan 1947
Taken from a presentation given by Tøger Nis Thomsen, Architect and Town Planner, Copenhagen City Council

The Scandinavian Context

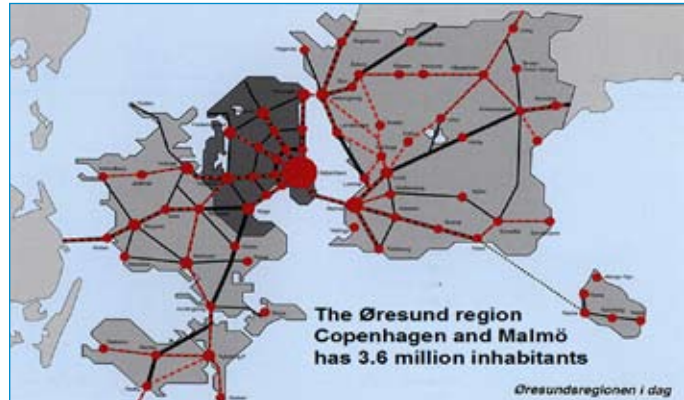
The Scandinavian countries have been remarkably successful since the last World War in developing great places to live as well as thriving economies, and in putting sustainable development principles into practice. This is despite their peripheral locations and relatively small populations. Both Sweden and Denmark score well in surveys that measure both environmental and social sustainability. Sweden now has the highest economic growth rate of any OECD country, whereas in the 19th century a quarter of the population were forced to emigrate to the USA.

Like the UK they have monarchies, but are less centralised and more egalitarian. While national governments have shifted to the right, (partly in response people moving into the cities from abroad), local government still plays the leading role in spatial development. The movement to new suburbs is being checked by developing new urban quarters that meet the highest sustainability standards alongside upgraded public transit systems. They have also taken action to make their city centres truly memorable, through extensive pedestrianised streets and bike ways, outdoor cafes (with blankets to fend off the cold), and the greening of post war estates as a means of changing their image. Above all they have invested in developing a sustainable infrastructure in terms of transport, energy, water and waste, and have made regional planning work.



The Øresund Region: a model for Local Enterprise Partnerships?

In 2000, five years after Sweden joined the European Union, Denmark and Sweden were joined together by the Øresund Bridge. This created a region of some 3.6 million people, and a new player on the European economic stage. The bridge, which is 11 miles long, was only approved by the two governments in 1991/93, and finally confirmed by a Swedish Court decision in 1995 only weeks before construction started. The idea behind it was not only to change traffic flows in Northern Europe, but also link the two sides together, thus creating a more dynamic and competitive urban area.



The region works through a regional plan drawn up by the municipalities on both sides. 25,000 Swedes come over every day to work in Copenhagen, and take many of the jobs, such as serving in hotels and restaurants. Conversely many Danes have moved over to Malmö to live, where living costs are lower, and there are also differences between the countries in whether you are taxed where you live or where you work.

With frequent train services Malmö is under half an hour from Copenhagen, and the bridge also carries a motorway. Services will be improved still further when the new rail tunnel is complete that will link directly through to Stockholm, and when Copenhagen is eventually linked to the high speed line to Hamburg. With a first class airport serving more than 120 destinations, both Copenhagen and Malmö have already become much more competitive as locations for international businesses.

Early schemes, which were influenced by London Docklands, made the mistake of just building offices, and are now seen as sterile. Instead the emphasis now is on authenticity, balance, connectivity and diversity. The main recent developments have been in Islands Brygge, which were part of the port, with mixed use schemes that provide a substantial public realm along the waterfront. Attention has now shifted to the Northern Harbour, Nordhavn, where a masterplan has been drawn up following an open competition which drew 180 applicants. The idea is that ordinary people should be able to benefit from living by the waterfront, and that all will live close by public transport. The three winners were funded to develop

their ideas, and included young architects who would never otherwise have got the chance to see their ideas put into practice.

The area is being developed by a joint company By & Havn (the City and Port Development Corporation) set up by the City and the Danish government and who are also responsible for the development of Ørestad and the new metro lines. The intention is to develop the area incrementally, starting where it is easiest, and to make serviced sites available in small parcels. The guiding principles are to densify the region in order to support high quality public transport, to give people the right to a sustainable lifestyle, to make the most of water, and to create a more diverse city.

2.2 Mobility

Copenhagen is widely thought of as the bicycling capital of the world, and some 37% of trips to work are now made by bike. Cycling, we were told, is *'a way of life, a lifestyle, as well as being cheaper and more efficient'*. This was not always the case. There are now 460 km of cycle tracks and 1.2 million cycle every day. Over ten years, kilometres cycled have increased by twice as much as kilometres driven. This has been achieved by a combination of measures, including extensive cycle lanes, doing away with roundabouts, providing cycle storage on the suburban trains, and ensuring that offices provide changing facilities. Though car ownership went up by 40% between 1995 and 2005, usage only went up by 10%. Bus rapid transit has reduced journey times by 23%, and has produced great economies.

The City invests some €10-20 million a year in cycling facilities and the process of change has taken 40 years. Inside Copenhagen's central area there is a system of free bicycle hire; a system later taken up by Paris and London. As they have not been able to implement a congestion charge, the modal shift has been achieved through more subtle ways. The City's engineer progressively cut the amount of parking spaces by 3% a year - enough to make a difference over time but not enough to create too much opposition and this has provided space for cycle lanes as well as wider pavements on the main streets, and some shared surfaces on minor streets.

One of the concepts is of a 5 minute city where everything you might regularly want is close at hand, with a third of the movements by public transport, a third

Summary 1995 - 2004

Key figures	2004	2002	2000	1998	1996	1995
Kilometres cycled (million km per day)	1.13	1.11	1.05	0.92	0.93	0.80
Proportion who cycle for other purposes than work (%)	89	-	-	-	-	-
Proportion who cycle for recreation and exercise (%)	25	-	-	-	-	-
Cycle track length (km)	329	323	307	302	294	293
Cycle lane length (km)	14	12	10	6	-	-
Green cycle route length (km)	37	32	31	30	29	28
Cycle track maintenance (DKK million)	8.9	8.8	8.1	5.3	4.7	3.9
Serious cyclist casualties (number)	124	152	146	173	252	231
Serious cyclist casualties at signalised junctions (number)	38	52	57	54	88	81
On-road cycle parking spaces (1,000 spaces)	20.6	-	-	-	-	-
Cycle Policy target figures	2004	2002	2000	1998	1996	1995
Proportion who cycle to work (%)	36*	32**	34	30	30	31
Cyclist risk (serious casualty per 1 million cycle km)	0.30	0.38	0.38	0.52	0.74	0.79
Cyclist sense of security (%)	58	56	57	58	60	51
Cyclist travelling speed (km/h)	15.3	-	-	-	-	-
Cycling comfort (satisfactory surface in %)	2*	5	19	-	-	-

*=2003 eq **=2001

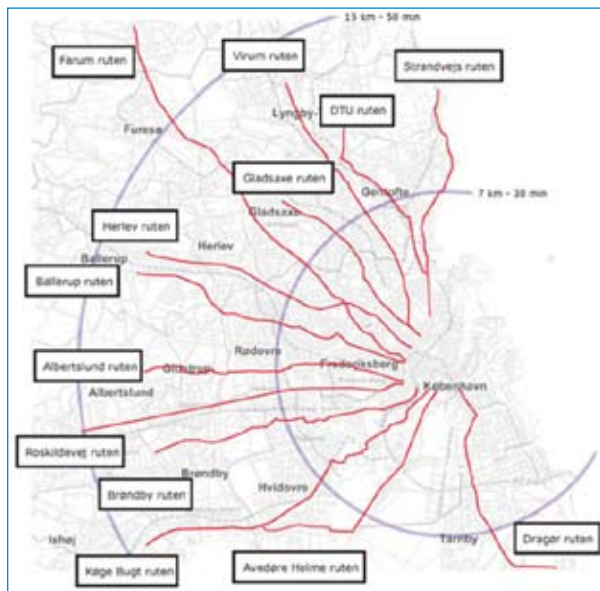
Bicycle Strategy: Key Indicators



Cycling in Copenhagen

by bike, and a third by car. This is being achieved through a 'green loop' in which cyclists and pedestrians have the shortest and most direct access to the city centre. Interestingly in the new development of North Harbour, only one parking space per 2,000 sq ft is to be provided, but a new metro line is planned to supplement the existing rail system.

The Cycle Superhighway is one of the major transport initiatives currently underway. It is a joint project between 18 municipalities, the council for the region and the government with the aim of increasing cycling from 37% to 50% of trips by 2015. The concept is to build a network of commuter routes, which are all built to the same standard and link up with public transport. The masterplan is to be completed this year and the first route to be built in 2011, costing 15 million kroner (approximately £1.7 million). One of the routes is being paid for by a cancer charity.



Copenhagen's plan for a Cycle Superhighway

The City Council are committed to increasing the number of journeys taken by bus by improving quality through faster journey times, smoother linkages and better bus stop facilities. In Frederikssundsvej a city neighbourhood that has no rail service and one of the busiest bus lines they are looking to introduce a Bus Rapid Transit Route by 2013 (see page 8), which they hope will increase passenger numbers by up to 30% (1,500 – 5,000 a day) and reduce journey times. They hope the money invested in the Rapid Transit Route will reduce journey times and require fewer buses, which will reduce the cost of the bus service in the long run.

Strøget

Copenhagen's main shopping street, Strøget (literally "the stroke" or "straight line") is one mile long, the longest pedestrian shopping



area in Europe. Stretching from Rådhuspladsen (The City Hall Square) to Kongens Nytorv (The King's New Square), it is actually a succession of streets stretching out from a central axis. It was pedestrianised as early as the mid-1960s after a fierce controversy. Elsewhere in European cities, pedestrianisation had been introduced only after construction of an elaborate Inner Distributor Road system to take the diverted flows of car traffic. Proponents of the scheme, including the architect-planner Jan Gehl, argued that this was unnecessary. His philosophy is to develop playful streets, and to treat them 'as if you were holding a party.' They were proved right: the traffic effectively "vanished". Today it is one of the most successful shopping streets in Europe.



Kryds ved Brønshøj Torv - Bus Rapid Transit

Skråfoto



■ Buskøre
■ Udvalgt busstop
■ Midterhul
P Parkering og Vejrtræk

Streetview og tværsnit



Det faktiske kryds ved Brønshøj Torv



Tværsnit fra fortov til fortov er 21 m.
 Tværsnittet er i perspektiv og derfor ikke målfæst.

Kryds ved Havdrupvej - Traditionel løsning

Skråfoto



■ Buskøre
■ Udvalgt busstop
■ Midterhul
P Parkering og Vejrtræk

Streetview og tværsnit



Det faktiske kryds ved Havdrupvej



Tværsnit fra fortov til fortov er 21 m.
 Tværsnittet er i perspektiv og derfor ikke målfæst.

Restructuring street space on a main road in Copenhagen
 Taken from a presentation given by Klaus Grimar who, Traffic
 Planning Department, Copenhagen City Council

2.3 Quality streets

Main roads are being turned into quality streets, with an agreed strategy for restructuring most of the main routes into the city centre. This has been pioneered in Nørrebrogade, a two kilometre road linking inner and outer Copenhagen. Its previously narrow pavements and wide road accommodated some 3-12,000 pedestrians, 30,000 cyclists, buses every 3 minutes, and 17,000 cars a day. The vision was to improve urban life, make cycling safe, integrate the buses, and cut cars by 40%.

A masterplan with four options in 2007/8 was followed by pilot projects using temporary steps to widen pavements and cycle tracks and improve bus facilities. A dialogue with stakeholders led on to a survey which showed that 2/3rds of residents were in favour but 2/3rds of shop-keepers were against. The City Mayor had the courage to back the project, and cars have since been reduced by 30% while shop keepers are now putting out good for sale and opening up pavement cafes. The pilot cost £1 million (much of it on consultation) and the full scheme £3 million.



Nørrebrogade before the experiments



Temporary experiments





Permanent plans for Nørrebrogade



2.4 Climate proofing

Copenhagen has taken the challenge of climate change very seriously. It hosted the United Nations' Climate Change conference in December 2009, having taken the UN's Agenda 21 to its heart, and now plans to be the world's first 'eco-metropolis' by 2015. Despite the failure of the Copenhagen world energy conference, Denmark continues to be in the lead in putting sustainable development principles into practice. Since 1976, the Danes have made up for their lack of natural resources by using energy efficiently, and 98% of Copenhagen residents are connected to a district heating system, which is the main way energy is saved. One of the distinctive features of the Danish approach has been the use of energy cooperatives, and many of the CHP plants and wind farms are owned by coops.

70% of waste is incinerated and waste meets 30% of the annual heating demand. Wind farms have also been used extensively, and currently account for 12-20% of electricity production. Wind is expected to contribute up to half the country's energy consumption, and this will involve



District heating



European Environment Agency and new beaches in Copenhagen

an investment of some €600 million. The big offshore wind farm by the airport is owned by 8,400 people, and they have received a good return for their far-sighted investment.

All the municipalities have signed up the Copenhagen Climate Catalogue, which is based on the government empowering, engaging, and resourcing its cities. The aim is to achieve a 20% reduction in CO2 emissions by 2015 and to be carbon neutral by 2025. This will include making more use of biomass, removing plastics from waste incineration, and developing a smart grid. There has been a 20% cut in emissions between 1990 and 2009 at the same time as the GDP rose by 66%. Now the focus is on reducing carbon emissions in a number of ways, including particularly transport. The City expects to be exporting energy, and already does this with wind power.

Carbon neutral transport is also being promoted, with measures to narrow the streets, and thus remove even more parking, promote public transport, with new metros, and carbon free transport. Work is being done on harnessing hydrogen, and Copenhagen plans to promote itself as a city of green enterprise. The City is committed to Green Growth, though up to now the 2.0% average growth in GDP has lagged behind cities like London. In part this is due to the difficulty in securing a payback from exporting knowledge.

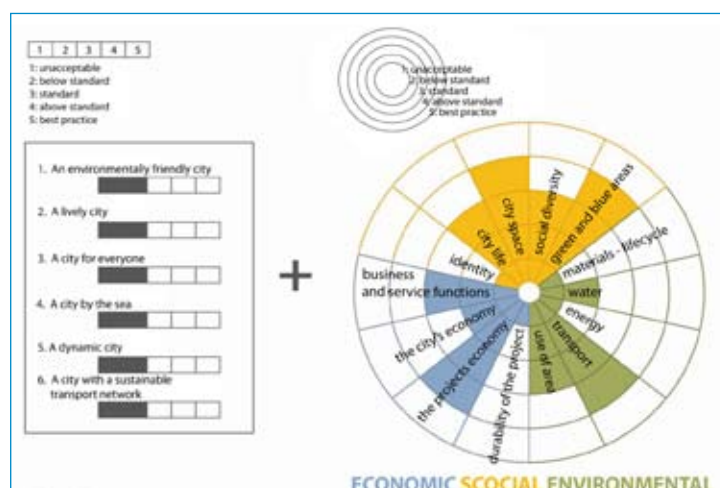
As in the UK there has been a stress on developing brownfield sites, but in a much greener way. Thus the Blue Plan has developed the city's waterfront from an industrial wasteland to an urban harbour. It has opened up access to the water with for example a swimming pool, beaches and public access to 40 km of piers and quays.

The 14 Considerations for Sustainability

- | | |
|--------------------------|-------------------------------|
| 1. Use of area | 8. Townscape |
| 2. Transport | 9. Urban life |
| 3. Energy | 10. Identity |
| 4. Water | 11. Business and service |
| 5. Materials - lifecycle | 12. The city's economy |
| 6. Green and blue areas | 13. The project's economy |
| 7. Social diversity | 14. Durability of the project |

Sustainability Profile 20 Indicators (scores 1-10)

1. Heating/person
2. Housing m2/person
3. Car ownership
4. Shared cars/1000 pers
5. Employed inside city
6. Dwellings beyond 68 dB from traffic
7. Energy in commerce
8. Percentage of industries in environment network
9. Share of Climate Citizens
10. Area of restaurants, hotels and culture
11. Area for sports
12. Green and blue areas
13. Affordable housing
14. Outdated flats
15. Housing ownership
16. Unemployment rate
17. Household income
18. Share of higher education
19. Number of workplaces per inhabitant
20. Sales prices of houses and flats



Eco-profiling The 14 districts in Copenhagen have been assessed on a ten point scale against 20 indicators. 14 of these are applied to smaller areas, and the contrasts shown on a spider diagram that highlights where improvements are most needed

Source: Copenhagen City Council.

2.5 Public housing

Due to the high cost of housing in Copenhagen, public (social) housing is open to middle income families and individuals as well as those on a lower incomes or out of work, you can put your name down for a flat when you turn 18 (although there are some areas that focus on lower incomes and those out of work). Some 28 housing societies (or associations) own some 59,000 homes in Copenhagen or 20% of the stock, largely flats. The rent is fixed at 28% of the construction cost with a fixed maximum. However, no new social housing has been built since 2006, in part because of high land values. In Denmark you cannot reserve land for social housing, which makes it very difficult for the City when they do not own the land. They become reliant on negotiating with the developer.

The City has been investigating a new affordable house strategy, which is looking at new ways of building using prefabricated construction (which has a fixed cost which is 30% cheaper) as a way of bringing costs down and using competitions (judged on quality as well as price) on municipal land. From 2009 to 2013 they are planning on building 700 dwellings suitable for families and 200 homes for the disabled. The City will have invested in total 174 million kroner (approximately £19.7 million).



System built housing

Image taken from presentation given by Diddi Thiemann, Copenhagen City Council

No one likes to live in a building site, and construction rates have been much faster than in the UK. In part this is because there is a higher proportion of rented housing, and also an extensive use of coops. Some 16% of homes generally are owned by cohousing groups, whose members have procured the development and take over responsibility for running the communal areas. While this model has suffered from legislative changes, efforts are now being made to replicate the German Baugroup model whereby housing groups take on the job of commissioning and running neighbourhood open space.

2.6 Ørestad: a model for 'smart growth'?

Ørestad is a mixed use scheme with 3.2 million m² of space, which will eventually be home to 25,000 residents, 25,000 students, and 40,000 workers. About a quarter of the area has been developed, with a time span of some 20-30 years. It has been built either side of the new metro line, which was funded by the increase in land values created by the linear development. The land, which had been largely owned by the military (and used for firing practice) was taken over by a development corporation, 55% municipal owned and 45% state owned. The business and shopping centre is focussed on a new station where the metro crosses the main railway line out to Sweden. Significantly the metro was built and opened before the first person moved into the new town in 2005.

The development model and plan look quite strange as the plan is for a town about 600 metres wide and five kilometres long, divided into four districts. The masterplan was produced in 1997 after a competition by a group of Finnish designers, who have continued to work on the scheme up till recently. There are some amazing blocks of housing as well as commercial buildings by architectural super stars such as Daniel Libeskin (a hotel), Norman Foster (an office block), and Jean Nouvel (a concert hall). It feels a little like the German film *Metropolis*, and there were mixed reactions from the group. Concerns were raised over how it would feel and the likely absence of 'a sense of place' on a wet Tuesday in February!





Above: Housing over a car park and green balconies



Linear new town



So far they have developed one tenth of the area, and the rest has been left to nature. The design provides for a large central park, partly to meet the concerns of the existing residents the other side of the canal, and the buildings slope down towards them. Some 10 km of canals snake their way through the site, and there is a '3 string' drainage and rainwater system, with water either evaporating or ending up in lakes and wetlands. As about 70% use public transport to get to work, the need for parking was halved. Residential parking is largely provided under the buildings, and there is an ingenious multi-storey car park with housing above which looks a pleasure to use.

At the start of 2008 just over half the area had been sold to developers, and there are more than 3,000 flats occupied as well as 192 sq metres of office space, with housing selling faster than anything else up till recently. There is also the largest shopping centre in Scandinavia, with many buildings under construction. Each housing developer was allocated around 120-150 units, resulting in great diversity of designs and concepts. Social housing companies have developed some of the



Above: Community planting project

buildings, and the results look indistinguishable from the privately owned blocks.

Significantly it took investment by the Norwegian local authorities pension fund to get the first office building constructed, and their example led others to follow soon after. Ørestad is becoming a popular office location, as it is only five minutes from the airport and seven minutes from the Central Station. However there are criticisms that it feels dead at weekends, and the large open spaces could be intimidating. It has proved difficult to get cafes and restaurants to open up, which makes it very different from the central area.

3. Learning from Malmö

Malmö is Sweden's third-largest city, with a population of 286,000. It is the commercial centre of southern Sweden and has a truly cosmopolitan quality: its residents speak some 100 languages, and belong to 174 different nationalities (28% of inhabitants were born abroad). It has a relatively 'young' demographic profile, with 50% of people under the age of 35.

Initially (until 1658) part of Denmark, Malmö grew throughout the 1200s onwards from the size of a small village into a fortified town, but it is not an "old" city as such. During the 16th century, it flourished as a centre of trade and commerce – a trend that was to continue into the early 20th century in its manifestation as a successful industrial city. Following this boom though, came the bust as industry moved out wholesale to South East Asia, and the oil crisis of the 1970s caused severe problems for Malmö's heavy industry. The shipyards and textile industries closed down in the 1980s and 25,000 jobs were rapidly lost, 6,000 in the main shipyard alone. With some 30% of the workforce losing their jobs, and 22% unemployment, the City had to completely rethink the city's economic role and spatial structure. By 1985 the city's population was down to 229,000.

A Swedish local authority has greater incentives to take the lead, as the City Council owns some 40% of the city's area. It also has much more control over its budget (with about 2/3rds of a council's revenue coming from the local share of the income tax, which takes the first 28%). A city owned housing society owns some 20,000 homes, and has been a major force for innovation.

Malmö's decline, and the environmental, social and economic issues that came with it, stimulated proactive thinking about the vision for the city's future, led by the City Council and its Mayor. This led to a huge programme to regenerate the city centre, with a strong commitment to sustainability, and to developing the city's role in the knowledge economy. The City Planning Office describes how Malmö is now in the midst of a '*dynamic development period*', establishing its role in the new Øresund region in which interest is rapidly growing. The concept of economic, social and ecological sustainability underpins all of the City Planning Office's operations. Malmö is called the 'City of Parks' because of its inheritance of open spaces, but is also rated by some as one of the world's greenest cities due to its innovative use of renewable resources and its goal to become the leading eco-city¹.

The Western Harbour, including Universitetsholmen, has the highest priority in the strategic development programme within the structure plan, and will be the city's most attractive redevelopment and building area for business and housing over the next five to ten years. The Swedish Government has chosen the Western Harbour as a national example of urban sustainable development, gaining great recognition both nationally and internationally, along with the ekostad (eco-town), of Augustenborg. Malmö is now seen as a national success story, and the city now expects to grow by 100,000, or a third in population. The city is currently attracting around 7,000 new residents a year, of which 3,000 are Danes.

¹HowStuffWorks "5 Amazing Green Cities", Maria Colenso:
<http://science.howstuffworks.com/five-amazing-green-cities1.htm>

3.1 Augustenborg: a model estate renewal scheme?

The City Council launched one of Sweden's largest urban sustainability projects in 1998 for Augustenborg, which is on the edge of Malmö, and linked by frequent buses and suburban trains to the nearby Persborg Station. The housing estate, which was built in the 1950s had gone from being a desirable place to live to a place with a bad name. Some 3,000 residents, most of whom were born abroad were living in relatively small flats. Environmental measures have been used to save resources and regenerate the area. In the process, turnover has dropped by 20% as has environmental impact, and unemployment has fallen from 65% 12 years ago to 45% now.

The character of the estate has been transformed through extensive landscaping, and an elaborate system for conserving rain water in green roofs and in ponds (where much of it evaporates) before it passes through surface channels and on to underground sewers. 80% of water evaporates, and 20% goes into the drains. Some further capacity to take rainwater has been provided in an amphitheatre and a basketball pitch, which had been fitted with a heat pump to allow it to be turned into an ice rink in winter (no longer working incidentally). The results of all the greening include moderating the climate, cutting energy costs, and turning a sterile environment into a natural place. Heating costs have been cut by 35% and total energy costs by 25%. Ugly steel sheeting which caused damp is being removed and replaced with external insulation (10 cms), which has been painted.

15 'recycling houses' enable residents to sort out their waste into clearly marked containers. At first food waste was composted but now it is turned into biogas. As well as a new school, prefabricated so it can be reassembled elsewhere, there is an impressive works department building, covered in a green roof and solar panels. Relatively few residents own a car, but there is car share scheme, though the electric car experiment had to be dropped.



Eco features in Augustenborg

3.2 Västra Hamnen - The Western Harbour

Malmö, formerly a major shipbuilding city, suffered massive deindustrialisation in the 1980s. In 1986 the Swedish government decided to close the Kockums shipyard for the production of civilian vessels, and the huge dock was filled in to accommodate a new SAAB plant. But hardly had the plant opened, when a merger with General Motors resulted in its closure. A few years after its closure, the SAAB factory became the centre of Malmö's new trade fair area, which moved from the Stadium area to Västra Hamnen. Finally, following the merger of Kockums Malmö and Kockums Karlskrona at the end of the 1990s, the production of military vessels was transferred to Karlskrona. However, Malmö continued to be the main centre for Kockums with a focus on design, planning and development.

Strategic vision The closure of the Kockums shipyard presented scope for the transformation and creation of a new district in the city: *Västra Hamnen, the City of Tomorrow*. Thanks to this structural facelift, the city has now once more renewed its ties with the sea. The Western Harbour is being transformed from an industrial area into a complete urban quarter with residential, services, workplaces and educational facilities. The area covers about 140 hectares and currently has a number of projects which are at the planning and construction stages, with Bo01. The new quarter will retain characteristics of Malmö's inner city: dense, intimate and concentrated. The Western Harbour will become an attractive urban quarter with wharves, squares, bathing areas and urban parks. The transformation into a new urban quarter began during the



Top: Attractive location for international business services companies

Middle: Iconic Turning Torso residential and office tower

Bottom: Wind turbines under construction

Future Redevelopment and Building Areas

When the City Tunnel is completed in 2011, the aim is for the development focus to shift to southern Malmö and Hyllievang. Hyllievang, with its strategic location in close conjunction to the Oresund Bridge, with good road and railway connections, gives Malmö a central position in the growing Øresund Region. The first development stage is already underway: the Hyllievang Centre – which is situated around the City Tunnel station – and has seen the construction of an arena, shopping centre and hotel.

The City Planning Office hopes to focus its future efforts on Norra Sorgenfri – a redevelopment area with an industrial past, pinpointed for a mixed town building scheme, where the centre can be linked to eastern Malmö. Other examples of future new buildings areas in eastern Malmö include Fortuna, Hemgarden, Malmö Eastern Hospital, and the railway zone. To the west of the city, Kalkbrottet and Limhamn industrial and harbour area have been selected for large-scale change.

Bo01 international trade fair and European Home Exhibition (Bornassen) in 2001. The word Bo incidentally means to live, and 01 refers to the first phase and when it was started, which comprises 1,450 homes on about a tenth of the site. The next phases are called Bo02 and a Bo03.

Commercial role Västra Hamnen will be a site for a new type of business enterprise. Heavy industries are being replaced by service businesses. For example international business service companies like KPMG and WSP have opened up offices. The ‘city of knowledge’ is blossoming and, within a few years, several thousand new people may be gainfully employed within the area in close cooperation with its exciting neighbour, Universitetsholmen and the new university.

Character The design challenge has been to transform the area from a heavy-duty industrial zone to a diversified quarter of the city, with space for attractive homes, businesses, schools, service facilities, parks and green oases. The aim is to make Västra Hamnen a city district for everyone in Malmö, and it serves as an ‘arena for the city’. Thoroughfares, streets, squares, parks and open spaces all provide a welcome and form a link with the streets in today’s city. Interesting and safe coastal and wharf areas are taking shape for the public to enjoy. Older buildings, such as the former foundry and nearby buildings next to the bascule bridge, are being preserved and will be used for club, cultural and leisure activities for everyone in Malmö. The old industrial districts - the former SAAB factory with its slipway, the crane area, the former aircraft factory – will either be replaced by big space-using activities



The new sea front



Housing for the elderly with sea views

– an exhibition area, a trade fair area, the Universitetsholmen university area – or developed as mixed use areas, consisting of premises for residential, office, commercial and educational purposes.

An east-to-west canal route is being built at right angles from the Bo01 expo area to the huge Kockums dry dock, with the 180-metre-high 'Twisting Torso', Santiago Calatrava's remarkable office and residential tower, as its predominant feature. These intersecting main routes and the surrounding water and park landscape will form the basic framework for the new Västra Hamnen district. New, smaller districts, each with a character of its own, will grow up in between.

There is a strong emphasis on the area's proximity to water, reviving the contact that this city once had with the sea. Everyone will enjoy easy access to the seafront, and on a good day there are some 15,000 visitors to what has become a new seafront, with superb landscaping (for example polishing and replacing the original boulders to create a sculptural feature, as well as sea defences). The historic Scaniaparken, on the land side, is being regenerated and a stronger link will be formed with Ribersborg beach.

Climate proofing A concerted effort is being made to develop Västra Hamnen as the model for a sustainable city. The City of Malmö has ambitious standards for ecological sustainability in the Western Harbour. The Quality Programme or design guide including some 100 points, covering themes such as energy and waste, as well as mobility and biodiversity. The whole quarter will be a model for urban sustainability where financial, social and ecological

factors are carefully balanced. Top of the list are environmental concerns and the conditions that are necessary for creating a healthy ecological development, which it is hoped will play a major part in shaping the special profile of this city district.



Environmental features in Bo01



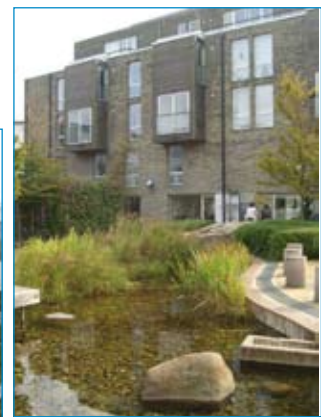
3.3 Bo01: a model eco quarter?

Though known internationally for Calatrava's 40 storey Turning Torso building, which has given Malmö a new landmark, the real appeal of Bo01 comes from the public realm, and the intimate spaces between the buildings, as well as from the great variety of buildings. This has given rise to the principle that the design of future phases should change every 25 buildings, and there really is something for everyone. Prices range from about £160-£320,000 (or 45kr/sq metre for a sea view and 25Kkr without), and the housing has attracted 'big earners' as well as 'eco enthusiasts'.

The City won the right to hold an international Building Exhibition or Expo in 1996. The project stalled for a couple of years, but the main building work took place between 2003 and 2007. The scheme was made possible by the City Council acquiring 2/3rds of the Western Harbour, and then commissioning a masterplan that divided the first phase of 25 hectares into a series of plots. There were 18 different

developers and 23 architects, including houses put up by different countries (but not the UK). Despite early problems, including the Expo going bankrupt, the development has carried on, thanks to the Mayor's determination, and 559 units were complete by 2003.

There are now over 1,300 homes, which all use very little energy, as they are highly insulated, and linked to a district heating scheme, with 1,000 (or 85%) homes off a heat pump to the underground aquifer. A single wind turbine supplies all the electricity, and the standard is to consume under 70Kwh per sq metre. Waste is put in a 'recycling house' and food waste is turned into biogas, which is used to run the buses. There are only 0.7 parking spaces per home, and these are largely provided underground or in a multi-storey 'parking house' and there is a carpool. Bikes are used extensively, and buses come every seven minutes, and reach the central station and shopping area in under ten.



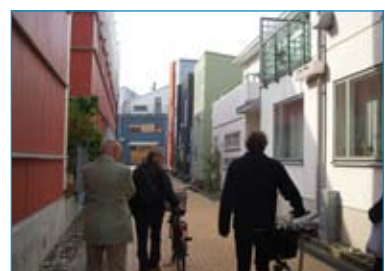
Water gives the neighbourhood much of its character, being held on green roofs and ponds, before going into open channels which support a lush landscape, and then into the sea. There are at least ten Green Points in every courtyard, such as nesting boxes or wild flowers, as well as another park to boost the city's image as 'the city of parks'.

The scheme has been very popular, with about 70% rented, the rest owner occupied. In the next phase 13 developers are involved ranging from 5 to 80 units, and 50 proposals have been received for the third phase. Interestingly the Council has shifted from setting down briefs to negotiating with the group of developers in a 'Good developer dialogue' and there are monthly meetings under four themes. It was noticeable that the landscaping is much less ambitious, and water is no longer retained above ground. They intend to apply the German principle of Baugroups, or co-operatives that commission homes together.



Lush landscaping

Rich mix of housing types



4. LESSONS FOR ENGLISH CITIES

Both Copenhagen and Malmö are highly inspirational for planning and development in London. They have succeeded in tackling issues that still hold back sustainable development in the UK. There are at least seven major lessons, starting with local authorities playing a much stronger role, and ending with a much greater commitment to equality.

4.1 Dynamic municipal leadership

The main cities have been the economic dynamos for their countries, and have led the way in adapting to higher environmental and quality demands. Three out of four new jobs in Denmark have been created in Copenhagen, and multi-cultural Malmö is now the fastest growing city in Scandinavia. City councils and their mayors have set visions in both thematic and spatial terms for a region that has a combined population of 3.6 million, and is now a major player on the European stage. Copenhagen is growing by 1,000 people a month, and has set out to be the world's leading environmental city under the theme '*Copenhagen Together: a metropolis for people*'. Development is concentrated along new railway lines, the old ports, and former Carlsberg brewery. Similarly, Malmö just over half an hour away across the new Øresund Bridge, responded to the closure of its shipyards with a vision of setting a national example of sustainable urban development in the Western Harbour, along with a transition to a knowledge based society, with a new university. They have also pursued social sustainability by upgrading failing estates, and through supporting technical education. That council is still in power today.

4.2 Smarter public finance

Scandinavians have opened up markets to competition (for example housing societies are now independent businesses), without letting the banks get the upper hand. Planned developments have concentrated new buildings in places with the right infrastructure. Cities have benefited from acquiring reserves of development land. Municipal banks enable local authorities to borrow for capital projects. Major infrastructure projects such as the Copenhagen Metro have been undertaken through a joint company set up between the government and the City of Copenhagen. Finance has been raised through 40 year bonds repaid by selling off land for development. Land value uplift in the new town of Ørestad and at Nordhavnen is effectively paying for Copenhagen's new metro lines, while Malmö has attracted a multiplicity of private developers to build what the city wants. The local authorities receive the first 28 pence in the pound raised through income tax, which means it is the wealthier people who end up paying for the most expensive items of public expenditure.

4.3 Thriving green economies

The Scandinavians are not only concerned about conserving natural resources, but have also made a profitable business out of it. The post-war success of the Scandinavian economies has in part been due to opening up export markets for their building products and systems (and trade makes up half the Swedish GNP). High levels of insulation were a natural response to their harsh climate and lack of cheap carbon fuels. Thus Swedish

windows were the first to be triple glazed. Prefabricated houses have substantially cut energy consumption, and made use of natural resources, for example by using timber frame construction, and lots of wood. Rather than going for a complex Code for Sustainable Homes they set a standard in terms of energy consumption per home, which can be easily monitored, they avoid the waste involved in on site renewables that often do not work as intended. Instead of spending £20-40,000 per home to meet Code 6, they use a wind farm with enough energy to heat and power 60,000 homes, at a cost of about £315 per home. Constructing wind turbines was a natural spin-off from building ships. Waste is reused, reduced or recycled, and for example used to support district heating systems, through bio-digestion, or to power Malmö's buses with Ethanol. By investing in the public realm, including extensive neighbourhood 'greens' and 'sustainable urban drainage systems' housing estates which in the UK would have been demolished, in Scandinavia have been made to feel safe and attractive. Similarly through concepts such as the Danish 'Green Key' for tourism establishments, businesses are encouraged to take a host of simple measures that in the UK would be seen as too complex to be worthwhile.

4.4 Super connectivity

In a series of measures to tame the car, while promoting high accessibility, the Danes and the Swedes have built the Øresund Bridge between the two countries, integrated buses and railways, and created extensive systems of bikeways

that are safe and efficient. As well as concentrating development in the most accessible places, councils have sought to tame the car. Copenhagen has led the world not just in excluding cars (Strøget, the main shopping streets, is a mile long), but also in promoting cycle use. 37% of trips to work now involve a bike, and suburban trains are designed to carry bikes, while offices provide shower and changing facilities. Space has been progressively taken away from the car and given over to cycling or walking, and street cafes have flourished as a result (some 5,000 in Copenhagen). Main roads are progressively being turned into quality streets, cutting car use, congestion, and pollution. Parking under buildings keeps cars in their place.

4.5 Functional and efficient design

The quality of Scandinavian design is world famous, as individual craftsmen designers have successfully made the transition into volume production. New settlements have won widespread acclaim for the high standards of their housing. Instead of trying to build one-off 'icons', the focus has been on economic forms of mass construction, epitomised by IKEA with its flat-pack system, and prefabricated elements (Modern Methods of Construction). Space is used efficiently because buildings are sold in terms of floor area, not number of rooms, and regulations appear to be much less complex. Apartment living is much more common than in the UK with large balconies providing outdoor space. The masterplan for Malmö's Western Harbour stresses '*sustainability, mixed use, the creation of meeting places, and attractiveness*'. Malmö's new univer-

sity has taken over redundant buildings, and is located in the heart of the Western Harbour, not on a peripheral greenfield site. There has been a 'BuildingLiveDialogue' with developers, rather than relying on rule books, as we tend to do in the UK. The idea of Living or Green Roofs shows how designing with nature can be both functional and look good.

4.6 Comprehensive technical education

The great stress on skills has been encouraged through Labour Market Boards that consider the demand and supply for each type of job. Education is geared to enabling people to participate in society, and there are strong pressures to conform. By siting new universities in development areas in areas such as Ørestad or Malmö's Western Harbour, the state has been able to inject capital as well as people into regeneration. It also seeks to equip people with the skills needed for the new economy, and the hope is the children of immigrants will pass on what they know to their parents. However, there are real problems, reflected for example in the rise of the far right in Sweden, and occasional riots in areas with a predominance of immigrants in Malmö. But there is also a determined effort on the part of local authorities to avoid the rise of 'racial ghettos' with access to education, housing and transport being key.

4.7 Greater human equality

Behind the signs of physical and economic development lies a strong moral philosophy that stresses the 'common wealth' rather than individual consumption. Surveys show the Danes feel much safer

than we do, even where the facts suggest the opposite. The overall commitment to achieving an equal society seems to be linked to much higher ratings for happiness than in the UK. There is a stress both on acquiring skills, and on working flexibly. Isolation however is a growing problem, and some of the old securities are breaking down, as the Wallander novels bring out.

Conclusion

In short Scandinavian cities are now more closely linked to the rest of Europe than even the South East of England. Significantly the Swedes are seeking to apply the lessons from the German cooperative building groups in the next phases of Malmö's Western Harbour. Copenhagen is going to be connected to the European high speed rail network through Hamburg, which will further reinforce European integration. So if you want to see what the future could look like, take a look at the Øresund region.

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