



STRAIR
CONNECTING AIRPORT REGIONS

06

**Territorial and environmental
impacts of airport development**



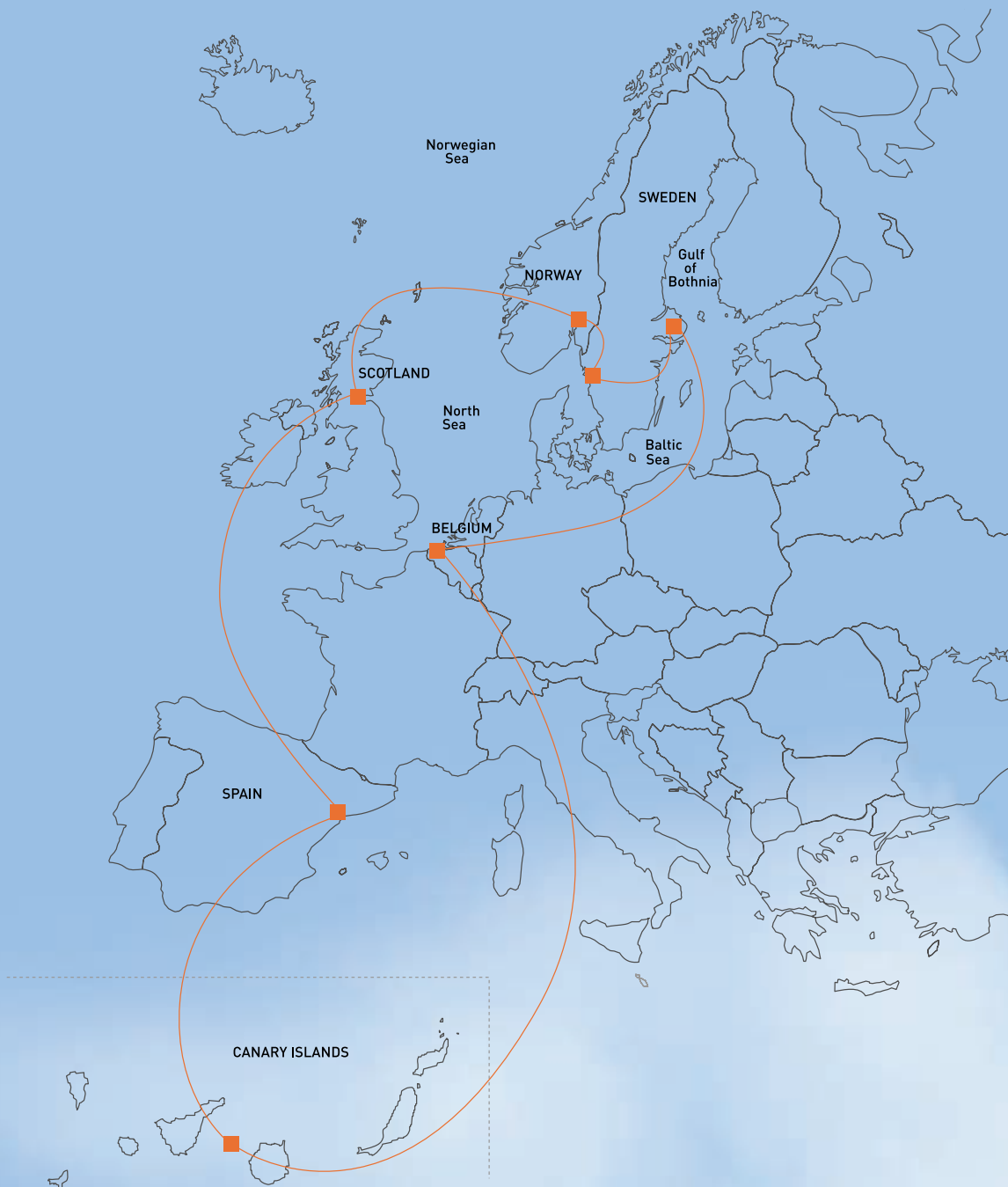
STRAIR

06



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- Sweden / Stockholm Airport Region / Office of Regional Planning and Urban Transportation
 - Sweden / Gothenburg Airport Region / Municipality of Harryda
 - Norway / Oslo Airport Region / SNP Gardermoregionen
 - Spain / Barcelona Airport Region / Municipality of EL Prat, Municipality of Viladecans
 - Spain / Canary Islands Airport Region / Regional Development Agency PROEXCA
 - Scotland / Glasgow Airport Region / Renfrewshire Council
 - Belgium/ Ostende Airport Region / West Vlaamse Intercommunale



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presentation

STRAIR – Strategic development and cooperation between Airport Regions – is an Interreg IIC project that involves seven airport regions across Europe.

The project period is from 2005 to 2007 with a budget of 2 million Euros financed on a 50/50 basis from the partner regions and from the INTERREG IIC programme. The Lead Partnership of the project is shared by Stockholm and Oslo Airport Regions.

The STRAIR project is endorsed by the ARC (Airport Regions Conference) on the initiative of the ARC Interest Group for Business and Employment. STRAIR involves ARC member regions as well as other medium sized European Airport Regions.

Proximity to international airports and advanced infrastructure are strong sales & marketing issues for regions to attract investment and knowledge workers. The essence of STRAIR is to use the fact that well-functioning airports are driving factors for regional business development in the new global economy.

The aim of STRAIR is to improve the innovation systems for industrial and business development in airport regions and to develop airport regions networks with the intention of learning from each other's operations.

The common feature of the partners in STRAIR is that they are the fastest growing regions in their countries. Because of the advanced infrastructure linked to the airport, the regions are also among the most accessible areas in their country.

STRAIR consists of four Components focusing on direct and indirect Innovation and Business development, Territorial and environmental impacts of airport development, and Distribution and cooperation with airport networks.

component 4 / procedure

Component 4, Härryda's Part

The Territorial and environmental impacts of airport development report is one of five STRAIR reports, published with ARC endorsement, in cooperation with the Responsible Partners (Härryda Municipality and Ajuntament del Prat de Llobregat). This report is Härryda's part, published as a part of the 4A STRAIR report: a survey of knowledge/experience through major infrastructure investments in the partner regions. In the report a study of major infrastructure development processes to produce relevant joint knowledge and information has been composed, with the major objective of looking into what effects relocation of an international airport has locally.

Procedure, annual intervals

In Härryda's case, the assignment to achieve the purpose in Component 4 has been to

- ➔ Survey knowledge/experience through major investments in the partner regions
- ➔ Look for differences and similarities
- ➔ Develop best practice for infrastructure projects

The survey of land use will include:

- ➔ Business parks
- ➔ Housing areas near the airport
- ➔ Protected green areas adjacent to the business parks

To achieve the knowledge required for the pilot study, a goal area has been delineated. The same questions have been put to all the partners in the STRAIR project, in order to obtain equivalent experience from airport related land development. To allow consistent analyses, the surveys are illustrated by four years. The surveys show changes in land use:

- ➔ Before the airport was built in the region
- ➔ A while after the airport was built
- ➔ The present situation
- ➔ Future plans

summary

THE STUDY CONTAINS a chronological survey of El Prat and HÄrryda municipalities. By means of annual intervals it is possible to study development in the use of land related to business areas, housing and green areas.

THE MARKETS OF the airports studied are regional, so the airport generated growth is spread over the whole region, even outside the borders of the municipality. The airport generates an area of influence along the motorway corridor between the airport and the regional centre and over the course of the years the use of land closer to the airport increases. Access to the airport in terms of time has a clear influence. Establishment closer to the airport increases in line with a greater time interval to the regional centre.

AIRPORT RELATED LAND uses are located close to the airport and these sites are dominated by logistics. In the business parks, the growing industries over the years are logistics, service and hotel business. Compared to isolated business parks, there is an attraction in contiguous structures. Successful development in land use can be seen when business parks are located with direct access to the airport and when sites are visible from the motorway. Arlanda and Barcelona El Prat aspire to create an Airport City, located at the motorway junctions close to the airport. A strategic decision is to predict the growth at the local airport and from these conditions, to adapt the business park in relation to the airport's needs. It is of strategic importance in order to benefit your negotiating position in the relationship between local and national interests.

Härryda municipality

HÄRRYDA MUNICIPALITY is part of the Göteborg region and borders on Göteborg to the west. Göteborg is Sweden's second largest city. The urban region has almost 900,000 inhabitants. The built-up areas are concentrated to the valleys, which all lead to Göteborg and the sea. The urban region has a radius of about 40 kilometres from central Göteborg. Göteborg is by far the most important town with half of the inhabitants and more than half of the workplaces. Göteborg is also Scandinavia's largest port and the country's only port for ocean-going ships. A large part of the country's transportation has the port as its destination and the region has as a result become a centre for the logistics business.

IN THE PAST 15 YEARS the region has undergone a major conversion from a dominant industrial sector to service based activities. Apart from the public sector, commerce, transport and communications are dominant sectors. Demand for office space has been great and in Göteborg the strategically important district of Gårda underwent a transformation from its previous industrial dominance to an office area. The district lies on the outskirts of the city centre with direct connections to all the regional motorways and a good connection to the airport. The location of the airport has strengthened

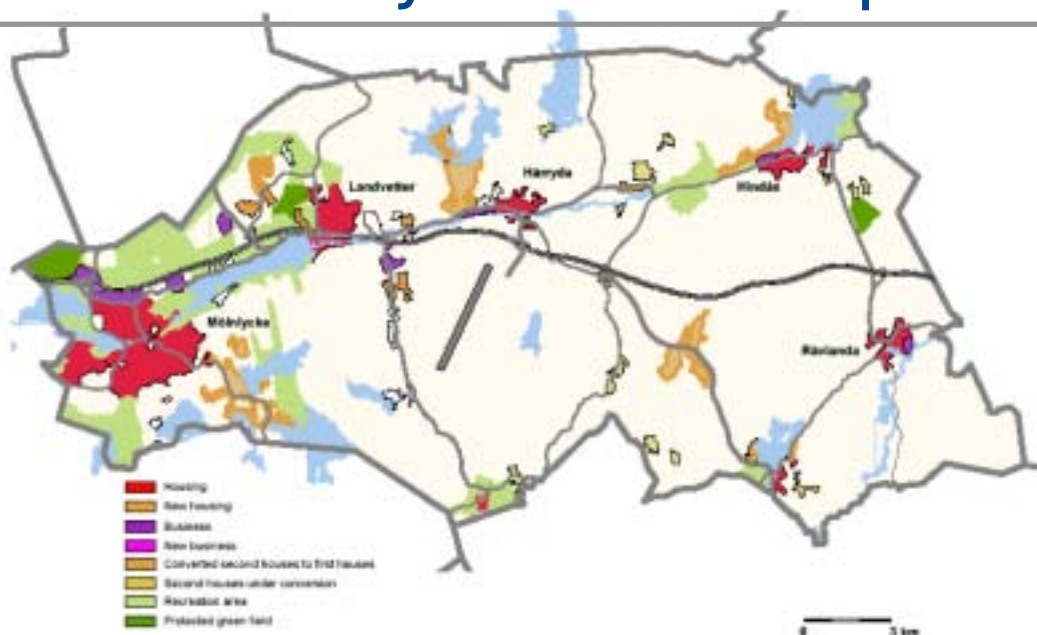
Gårda's strategic position. The central parts of the Port of Göteborg are now undergoing widespread rebuilding for housing and offices. Nowhere else in Sweden is there such a large central potential for expansion. The central position of the areas will lead to consolidation of the city of Göteborg.

THE REGIONAL INFRASTRUCTURE is characterised by five more important radial routes out from the centre. The airport can be reached within about 35 minutes from anywhere in the region, while from the centre of Göteborg it takes less than 20 minutes by car. The distance to Stockholm is 470 kilometres, Copenhagen 300 kilometres and Oslo 250 kilometres.

WESTERN SWEDEN'S second largest city, Borås, with 100,000 inhabitants, lies 60 kilometres east of Göteborg. Göteborg and Borås are linked by the Rv40 motorway, which passes Landvetter Airport. There are over 1,000 import and export companies in Borås. Commerce, communications and the manufacturing industry are the largest sectors in Borås. Several of the major clothing chains have their head offices in Borås, a legacy of the major textile industry. Viared Business Park is the largest industrial estate in Borås, situated along the motorway to the west of the city. Here there are about 100 companies, of



Härryda municipality



which a third have been added since the end of the 1990s. When the motorway was finished in 1994 the area gained good connections to the airport and the Port of Göteborg, which has led to a marked rise in demand for land. Viared is dominated by logistics, distribution, mail order and manufacturing industry. All vacant leasehold land is at present booked and an extension westward along the motorway is planned. For Borås, Landvetter Airport is important for both goods and passenger transport.

HÄRRYDA MUNICIPALITY is situated between Göteborg and Borås. The municipality comprises several smaller places, but most people live in Mölnlycke and Landvetter. Over half of the 32,000 inhabitants live in Mölnlycke, about 10 kilometres from Göteborg. Over 8,000 people live in Landvetter. The population of the municipality expanded during the 1970s and has risen in recent years because of the development of private house building. Härryda village lies just under the final approach to the airport and no housing development is permitted there. There are special regulations in Sweden for areas round airports. There is an outer noise zone based on an estimated noise level over 55 dB(A) and an inner zone based on 65 dB(A). There are

no restrictions with regard to activities.

A LARGE PART OF the population work in Göteborg and Härryda is one of the strongest growing municipalities in the Göteborg region, with an approximate growth in population of one per cent per year. The population has grown by 48 % since 1975, while the Göteborg region as a whole grew during the same period by just over 15 % and Sweden by 9 %. The number of workplaces in Härryda has also increased more than in the Göteborg region.

THE RV40 ROAD GOES through the municipality, running from Göteborg to Borås and on to Jönköping. The whole stretch of road between Göteborg and Borås is motorway. The railway between Göteborg and Borås goes through the municipality, but is of a low standard without commuter train traffic. Public transport is served by express buses. For a municipality in an urban region, Härryda distinguishes itself by being sparsely populated with large wooded areas. The municipality lies on a plateau that separates Göteborg from its dense built-up areas in the valleys. It is 30 kilometres from the western to the eastern part of the municipality. Half of the area is covered by forest and a twelfth part by lakes. Even the urban areas are cha-

Härryda municipality

racterised by much vegetation with woods and residential gardens. The topography is characterised by an undulating terrain with rift-valleys, which also applies to the area round the airport, the motorway and the airport junction.

THE MUNICIPAL PLANNING monopoly gives municipalities in Sweden a strong position in planning. In the general plan land use is illustrated for the whole municipal area. Decisions are made mainly by local politicians. Local streets and roads are planned by the municipality. National infrastructure is planned and paid for by government agencies. The government controlled County Administration safeguards the state's interests at a regional level. GR, the regional coordinating body, has been appointed by the government as the regional planning body for the Göteborg region. The regional planning monopoly prevails over regional cooperation, so the work of GR is directed towards coordinating the actions of the municipalities in regional matters.

Landvetter Airport

Göteborg-Landvetter Airport is located 25 kilometres east of Göteborg. At present there are thirty or so airlines that use the airport, flying to almost a hundred desti-

nations. The airport's total catchment area comprises approximately one fifth of Sweden's population. The proportion travelling abroad on regular flights is also about 20 % of the country's travellers abroad. The catchment area for domestic flights consists mainly of the Göteborg region and the Borås area. About 69 % travel abroad of the total of just over four million passengers annually. Of these, the proportion of business passengers is 65 % and the proportion of business passengers on domestic flights is 80 %. Unlike Arlanda, for example, the low proportion of domestic flights at Landvetter makes the airport essentially international. Every year 110,000 tons of goods pass through Landvetter, making it one of the largest freight airports in Sweden.

THE CIVIL AVIATION Administration has about 450 employees at Landvetter. On the other hand, about 3,000 people work in the whole airport area. 33 % of the municipal area is a protected zone for the airport, i.e. there is a great risk there of a noise level above 55 dB and house building is not permitted. Business buildings are allowed, however.

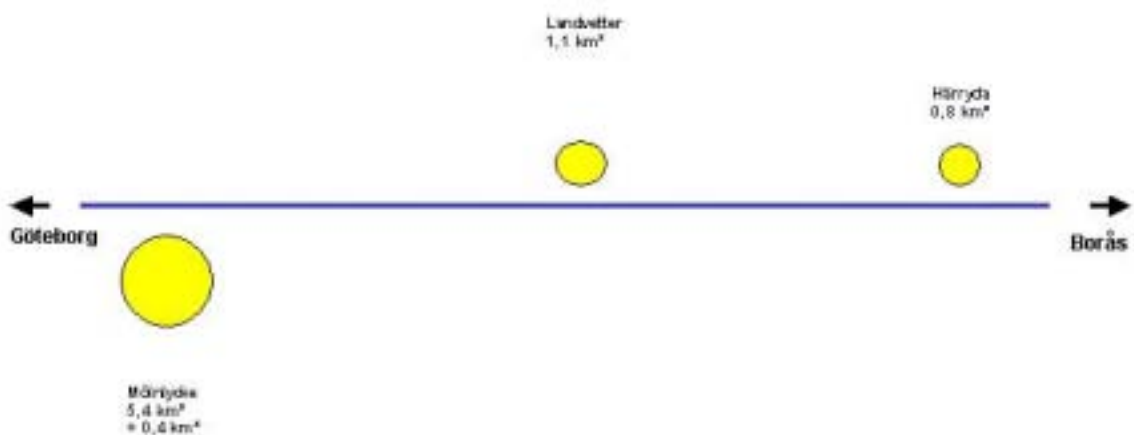
LANDVETTER AIRPORT PICTURE BELONGS TO LUFTFARTSVERKET



1975

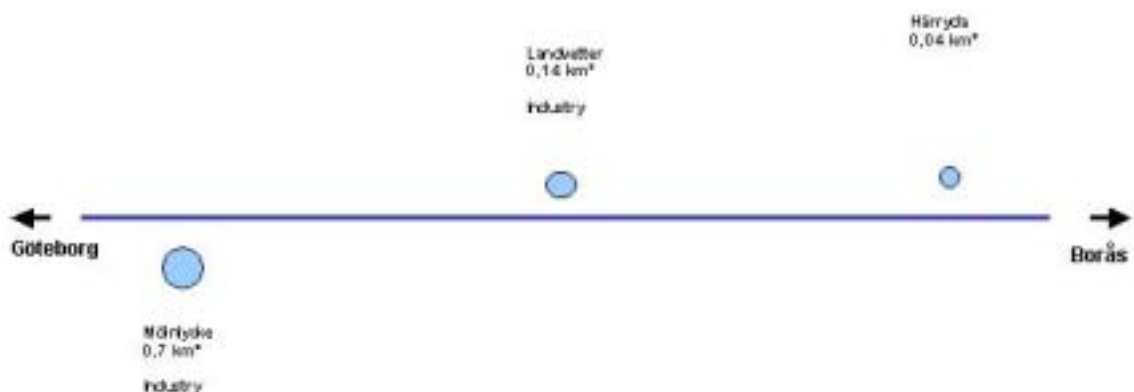
HÄRRYDA HAD 21,000 inhabitants in 1975 and was a municipality with an increasing number of people moving into private houses. Building was concentrated to the Mölnadal river valley with the lakes, the railway and the trunk road. The composition of industry and commerce followed the national average, where manufacturing industry employed a third of the inhabitants, while the public sector was expanding.

1975 Housing



BUSINESS AREAS WERE dominated by traditional manufacturing industry, found in both central Mölnlycke and Landvetter. In northern Mölnlycke new industrial activity was set up as well. At the beginning of the 1970s conditions on the labour market started to change, the industrial sector declined to the benefit of the service sector. In relation to the region, comparatively few worked with transport and communications.

1975 Business



1975

THE MOST IMPORTANT business apart from industry was the public sector, which was growing fastest. Public sector activities were mixed in with other buildings and did not require as much space as industry.

IN THE GENERAL PLAN of 1975 the municipality had planned two green areas, one north of Mölnlycke and one west of Landvetter. There were also several areas with holiday cottages.

CONSTRUCTION OF THE airport was in progress that year. To satisfy any demand for land, plans for the sale of land were produced. There was some confidence in increased local growth in connection with the establishment of the airport. The local political leadership, on the other hand, did not instigate work for new activities. It is said in the General Plan of 1975: "The Härryda air freight forecast for 1972 states after discussing airport issues that Göteborg acts as the country's most important transport centre and that the effects of this will probably be primarily that operations in commerce, storage and distribution functions will seek locations in Göteborg to a greater extent than is the case at present. Experience from larger airports in Europe and the USA supports such a view".

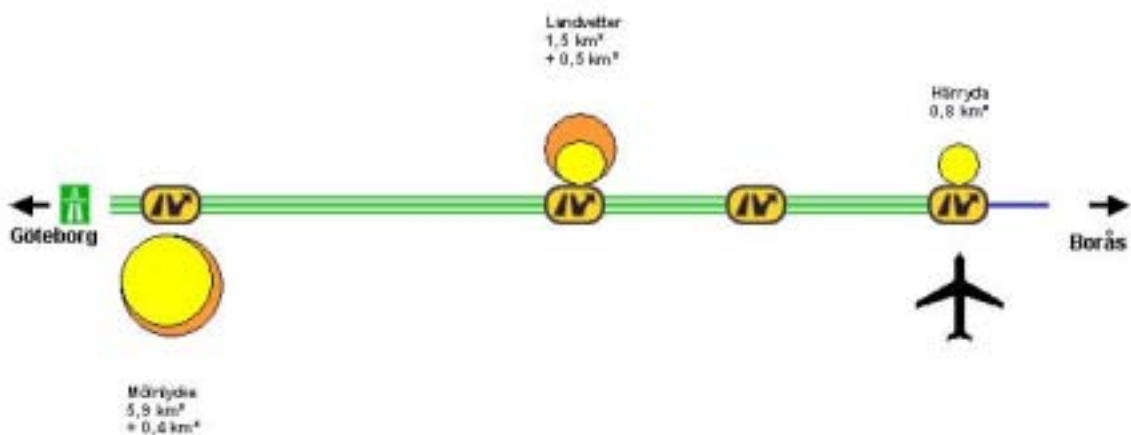
MOST OF THE MUNICIPAL area is forest. Built-up areas are concentrated to the valley along waterways, the trunk road and the railway between Göteborg and Borås. Migration into the municipality was rising and manufacturing industry was found in central areas.

1990

BOTH THE AIRPORT and the motorway between Göteborg and the airport were opened in 1977 and by 1990 had been in use for almost fifteen years. People continued to move in to residential areas, above all in Mölnlycke and Landvetter. No house building is permitted in the built-up area of Härryda because of the airport protection zone.

1990 Housing

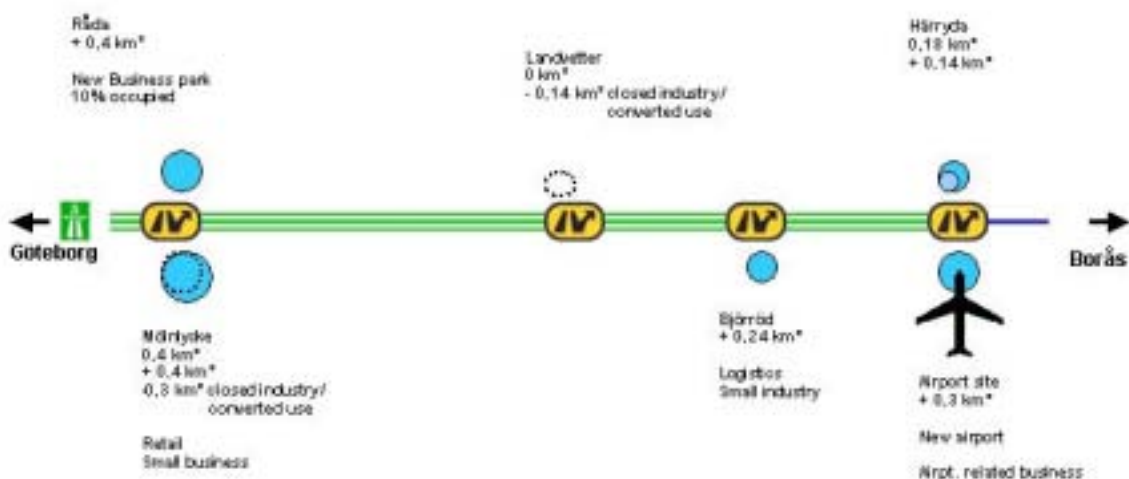
Airport Motorway, Gothenburg - Airport



THE TRADITIONAL MANUFACTURING industries in central Mölnlycke and Landvetter had been closed down. The number of workplaces in the municipality had by this time almost doubled, from 6,000 to 11,000. There were about 2,000 workplaces in the airport area. The strongest growing sector in the municipality was in transport and communications, which could be traced to operations at the airport. The sector was larger here than in other municipalities in the region.

1990 Business

Airport Motorway, Gothenburg - Airport



1990

CHANGES IN THE use of land, above all the development of virgin land, occurred mainly between the airport and the core of the region. The study here illustrates developments in the vicinity of Mölnlycke and Landvetter, though also along the motorway. The business area in north Mölnlycke required more land. A business park was constructed just north of the Mölnlycke motorway exit. Development started with a business service centre. An industrial estate with business operations was also set up in Björöd.

CONSTRUCTION IN THE municipality spread from the valley out along the north-south roads. A greater area was made use of for housing than for business (except for the airport area). During the latter part of the 1980s there was a substantial boom with massive investments in property. Large areas were developed and in Göteborg central areas of industrial land were replaced with offices. Among these was Gårda, as mentioned previously. House building in the region spread further out from the centre of Göteborg, with extensive building of detached houses. Even though work was generated in the whole region, workplaces were concentrated to Göteborg.

A PLANNED GREEN area north of Mölnlycke was altered. Generally speaking, considerably more land was illustrated as "valuable green area". It is important to note that part of the green area north-west of Mölnlycke was upgraded to nature reserve, as also an area west of Landvetter.

THE AIRPORT AND the motorway to the airport had been opened and in use for 15 years. People continued to move in

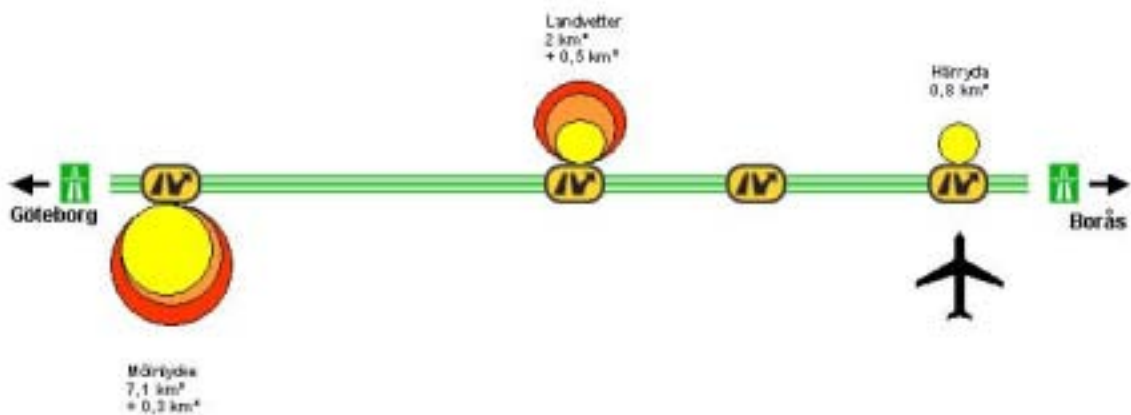
and construction spread from the valley and the motorway. Manufacturing industry in the town centre was closed down, but new business parks were established adjacent to traffic junctions. The transport and communications sectors expanded during this period. Increased demand for offices in central Göteborg led to the construction of large office areas in Gårda, directly adjacent to the motorway to the airport.

2005

THE TRADITIONAL MANUFACTURING industries in central Mölnlycke and Landvetter had been closed down. The number of workplaces in the municipality had by this time almost doubled, from 6,000 to 11,000. There were about 2,000 workplaces in the airport area. The strongest growing sector in the municipality was in transport and communications, which could be traced to operations at the airport. The sector was larger here than in other municipalities in the region.

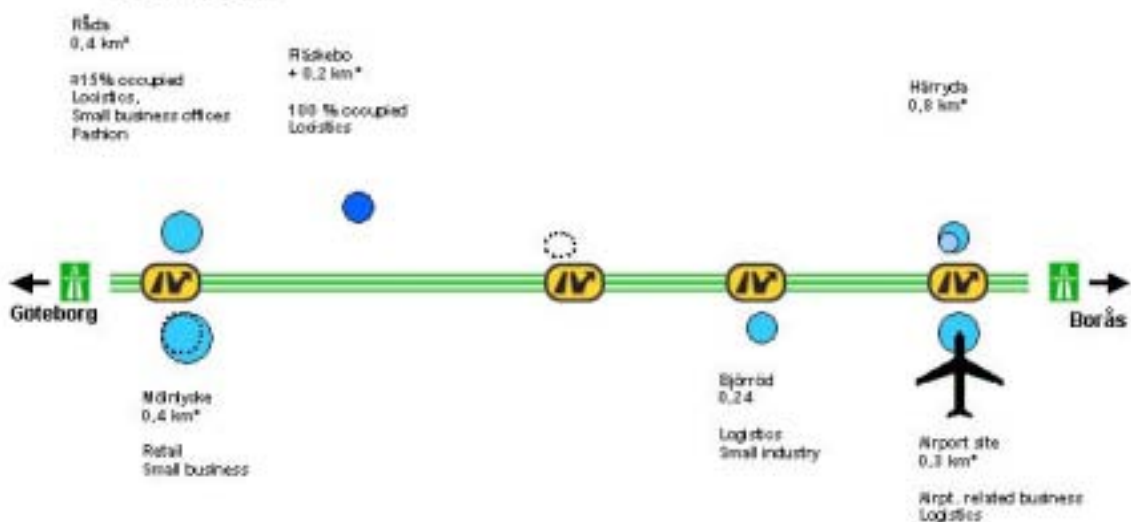
2005 Housing

Motorway complete, Airport - Borås



2005 Business

Motorway complete, Airport - Borås



2005

MÖLNLYCKE CONTINUES TO expand with new buildings in the centre, a bus terminal and a railway station. Since 1992 Härryda Municipality has had an average growth of about 3 % in the number of job opportunities. Developments have taken place in activities that require less space. The old industrial area has been put to new use; above all there are knowledge intensive IT companies. In the Mölnlycke business park the vision of "Architectural demand" has begun to appear, constructed and planned office buildings visible from the motorway have futuristic architecture. Apart from the fields of work at the airport, there are about 1,000 workplaces in work areas by the motorway interchanges. The structural change from industry to commerce, transport and communications is in progress, noticeable on viewing new business starts.

THERE IS NO GENERAL policy on setting up companies in the municipality and the business parks. One exception is the Mölnlycke business park. In the part located by the motorway there is a focus on, above all, relatively personnel-intensive companies. There are also requirements here for buildings and land. Small-scale, not so labour-intensive industry is referred to the northern part.

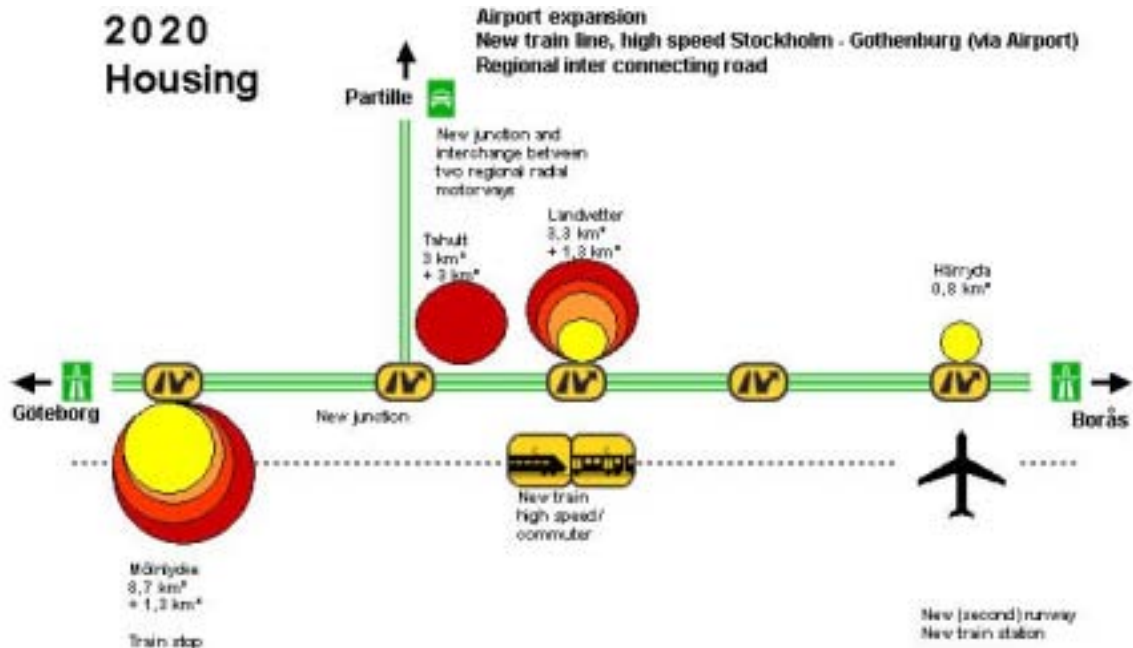
THE POST OFFICE has erected a new parcel terminal by a future motorway exit. It is the only area of activity erected on virgin land, elsewhere there is concentration in the areas of activity. Generally speaking the logistics business is strong, a number of larger and smaller haulage firms are housed in the business parks. This shows clearly in Björöd.

BOTH MÖLNLYCKE AND Landvetter are expanding, above all with a rise in residential areas. An ongoing and ever stronger trend is permanent settlement in existing areas for holiday homes. This is now common outside the peripheral areas of the Swedish big cities. The change to permanent housing also occurs within the airport protection zone. The planned green areas mainly conform to what was planned in 1990.

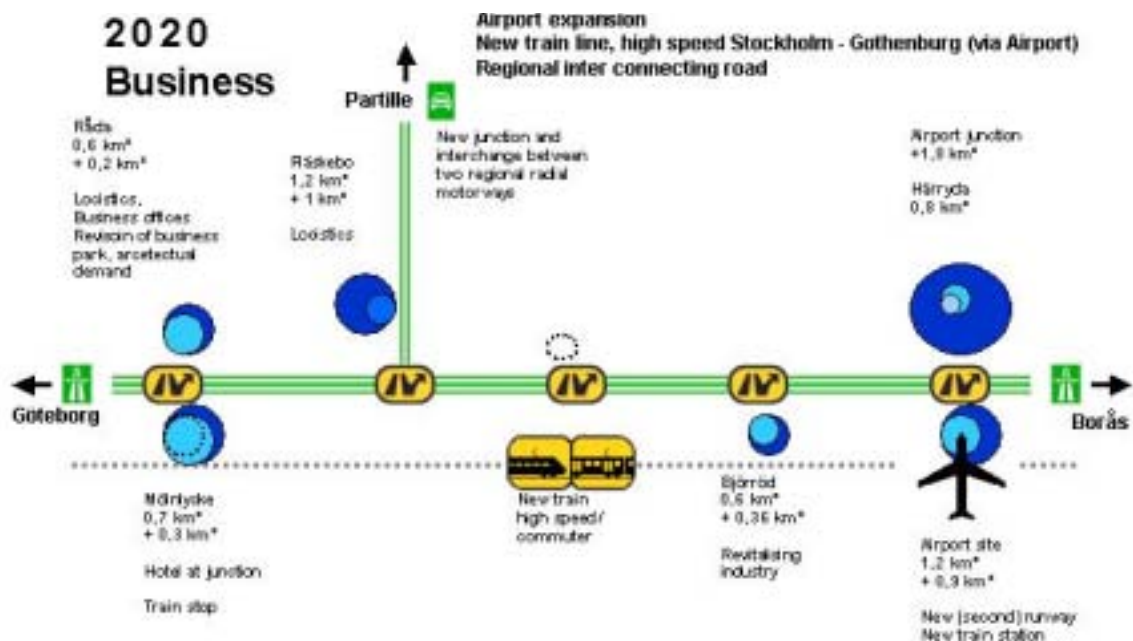
PEOPLE CONTINUE TO move in and holiday homes are converted to permanent housing. The motorway is complete the whole way to Borås. The business parks are concentrated with new buildings and are dominated by transport and logistics firms. The industrial premises in the town centre have been rebuilt as offices housing IT businesses. Härryda has had the largest proportional rise in workplaces in the region, + 109 % between 1975 and 2003. This is to a large extent due to the airport and the growth of the logistics sector. Growth is also apparent in Viared, where the airport and the motorway have led to a concentration of logistics, but also industrial activity.

future

NEW HOUSING IS concentrated to existing urban areas, of which Landvetter has the largest plans for expansion and is proposed to be considerably extended. Yet another new housing estate is to be erected west of Landvetter. Altogether there is, just between the airport and Mölnlycke, 9.2 sq.kms of land planned for housing in the municipality. Conversion of holiday homes to permanent housing continues to intensify.



EXTENSION OF BUSINESS areas is concentrated to the motorway interchanges, including the coming junction and the inter-regional link. Existing business areas will be extended and a new, relatively large facility will be constructed by the airport interchange. Altogether business areas will be extended by 3.6 sq.kms.



future

FUTURE PROPERTIES, above all those visible from the motorway, will be governed by "Architectural demand" with futuristic architecture. The vision is to establish service and knowledge intensive companies, such as IT and biotechnology, and to revitalise existing industrial areas.

MAJOR INVESTMENTS ARE to be made in the railway between Göteborg and Borås, which (2016) will be extended for high-speed trains and commuter trains. There will be commuter train stations in Mölnlycke and under the airport. The airport passenger volume is estimated at 6-8 million passengers and it will be extended with another runway, terminal building and parking places. The Civil Aviation Administration also has plans for business areas in the actual airport area, adjacent to the motorway.

A FURTHER TWO NATURE reserves are planned for the future. One of them covers Råda Lake and neighbouring green areas. The lake is one of the regional water supply sources. The other nature reserve is located within the airport noise zone, north-east of the airport. Otherwise the green areas conform mainly to what was planned in 1990.

PEOPLE CONTINUE TO move in at the same balanced pace as previously and a new larger housing estate is to be built in Landvetter. New business areas are planned in Landvetter and by the airport. Greater requirements for Architectural Demand are made for properties in the business parks. The railway is to be extended with commuter stations in Mölnlycke and at the airport, which is to be extended with another runway. A new junction with an inter-regional link at Landvetter will create a regional strate-

gic point in the transport network. New nature reserves will protect against development. Common to the time ahead is that both the municipality and the Civil Aviation Administration will show a greater interest in land by the airport interchange. Both parties have plans to build for business in the area.

El Prat del Llobregat

THE TOWN OF El Prat de Llobregat lies in the middle of the Llobregat river delta, only three kilometres east of Barcelona. The municipality consists of a mix of natural and urban landscape. It borders in the north on Sant Boi, on Viladecans in the west, Barcelona in the east and the sea in the south. El Prat is a typical Latin town with densely concentrated, mixed urban buildings.

EL PRAT HAS CHOSEN to illustrate developments through the years 1956, 1989, 2005 and the future. 1989 was chosen because it was a few years before the Olympic Games, after which both the airport and air traffic expanded greatly.

IN EL PRAT, ECONOMIC activities are mainly focused in four areas: the industrial area (along the railway, north of the city centre), the business area (north of the airport, between the motorways), the airport and the city centre. The city centre contains most companies and is principally dedicated to retail trade.

DECISIONS REGARDING LAND use planning are taken by agreement between the regional and local governments. However, some decisions regarding major infrastructure are taken with the agreement of the national government. In both cases the law only allows the regional and the national governments to take decisions.

BOTH THE C-32 motorway and the railway between Barcelona and Tarragona pass through the municipality. The railway is of a high standard with extensive commuter train traffic, both to Barcelona and to the airport. Parts of the Port of Barcelona are also located in the municipality. The topography of El Prat is very flat and the river delta has

always made this location excellent for agriculture. Before the airport was constructed the landscape was dominated by farming and nearest the coast there is a green area. The municipality is small in area, about eight kilometres in diameter.

Aeropuerto de Barcelona

The airport is about three kilometres from El Prat town centre and about twelve kilometres from Barcelona city centre. The airport was constructed in 1956 and now has 24 million passengers a year. There are no regulations governing construction of housing areas due to aircraft noise, although there are regulations governing the heights of buildings.

1956 / 1989

EL PRAT HAD 14,000 inhabitants in 1956. The airport was built at the beginning of the 1950s and occupied 15 % of the municipal area. Housing occupied an equally large area. The major industries occupied five per cent and were located just outside the dense urban buildings, adjacent to the river. The remaining 65 % consisted mainly of farmland, but along the shore there were also wooded areas.

DURING THE 1960S extensive industrialisation and urbanisation took place in Spain. The big cities were in the forefront with extensive expansion of housing and industry. El Prat's population multiplied to 64,000 inhabitants. The "new town" of El Prat was built, though still with a dense neighbourhood structure and directly adjacent to the old town. Housing occupied 25 % of the municipal area.

THE AIRPORT HAD expanded with rebuilt and upgraded runways and a terminal. The motorway between Barcelona and the airport had been completed. A feeder line had been constructed between the main line and the airport. The airport occupied 845 hectares, equivalent to 30 % of the municipal territory.

NEW LOGISTICS BUSINESS had been established, above all because of the expansion of the Port of Barcelona across the river. Business areas had also been set up between the town and the river and between the town and the motorway to the airport. Business areas now occupied 15 %.

PARTS OF THE green areas by the sea had also been protected during the 1980s. The proportion of green areas had declined to 30 %.

IN 1992 THE Olympic Games were held in Barcelona, which has had a major influence on Greater Barcelona and the airport. The motorway to the airport has been extended northward to join the new ring road round Barcelona. New terminals have been erected at the airport.

THE OLYMPIC GAMES have greatly strengthened Barcelona's trade mark as a tourist resort. This can be clearly seen in business for visitors and in the number of passengers at the airport, which rose from 10 to 24 million between 1992 and 2005. To cope with this, the first runway has been extended, but most importantly, a third parallel landing strip has recently been constructed. The airport occupies 40 % of the municipal area. Just north of the airport, between the motorways, a new business area has been constructed. Service and transport activities related to the airport, such as offices, logistics, storage and hotels

have above all been located here. Facilities such as hangars have also been erected in the actual airport area. These business/industrial areas occupy 15 % of the area.

AN ENORMOUS PROJECT to expand the port has been initiated, with the ambition of making Barcelona the foremost port in the Mediterranean. The river has been moved more to the south in El Prat Municipality and new docks are under construction.

THE POPULATION HAS declined slightly, 63,000 inhabitants now live here and housing occupies 30 % of the municipal area. The proportion of green areas has declined with the gradual expansion of the infrastructure. Green areas now cover 15 % of the municipal area and since 1998 the remaining wooded areas between the sea and the runway have been protected.



future

EL PRAT DEL LOBREGA is undergoing drastic change, above all because of major infrastructure projects such as the extension of the airport, the port, express trains and the Underground. The express train between Madrid and Barcelona will make a stop at El Prat. Two Underground lines will connect the railway station between Barcelona and the airport/Viladecans. In the rebuilding and extension of the port, a larger logistics area is planned. Infrastructure will connect to the port along the old river bed.

IN 1999 THE national airport company AENA launched a Master Plan for the airport. The plan is intended to strengthen the capacity of the airport considerably, including the now opened third runway. The airport will be dimensioned for 40 million passengers per year and altogether the airport will be extended from the current 845 hectares to 1533 hectares, of which 75 hectares is in el Prat and 14 in Sant Boi. Between the runways a new, larger terminal is under construction, which will be linked to the rest of the airport and to Barcelona by

Underground. 150 hectares of land between the airport and the town of El Prat will be developed as an Airport City.

These new areas are intended for service and transport activity, such as logistics, storage, offices, hotels, restaurants and a Convention Centre. The Airport City development means that the C-31 motorway has to be moved. A connecting motorway will be built from the new route to the new terminal.

TWO HOUSING AREAS are planned in El Prat. The bigger one will be in the northern part of the town, near the future high-speed train station. This area will be built to cover the motorway and contain a mixture of zones, including residential areas, business activities, offices, commercial buildings etc. This will extend the city to the other northern motorway. The second residential area will be to the south and it will be smaller. The growth can be directly attributed to the presence of the airport in the municipality. The extension of the airport and connecting infrastructure enable the municipality to finance the expansion of the town of El Prat.



Arlanda Airport

ARLANDA AIRPORT IS situated between Stockholm and Sweden's fifth largest city, Uppsala. Arlanda lies 40 kilometres north of Stockholm and is Sweden's leading airport with 16.3 million passengers per year.

WHEN DOMESTIC TRAFFIC was moved to Arlanda in 1984 it became the country's by far most important airport. The Arlanda City business park was erected just west of the exit to Arlanda at the beginning of the 1990s. The business park is dominated by logistics, but also houses hotels and retail outlets. A new stage with an display position right by the E4 motorway is being planned. The area contains a conference hotel with 300 rooms and office and service space for 2,500 people.

THE ARLANDA BUSINESS area is mainly located at the airport, but the airport contributes towards an airport related area of influence that runs along the Stockholm-Arlanda-Uppsala motorway. Establishment in this traffic corridor entails a short time interval to both the airport and Stockholm.

THE INTENTION IS to strengthen the investment in the Arlanda City business park. The town centre of Märsta, a few kilometres south-west of the airport, will with the development of Arlanda City be joined up with Arlanda Airport. At a later stage there will be a rail bound public transport system from Märsta commuter train station through Arlanda City to the airport.

THE BUSINESS PARK is intersected by the Stockholm-Uppsala motorway, but is difficult to see because of the trees. The strategic standpoint behind the extension is to focus on making use of

existing thoroughfares and barriers instead of creating new ones. The two exits to the airport each form a gateway to the development area. Visually it will appear that passengers pass through the business park, first by the gateways and then through the built-up area on either side of the motorway. The buildings will form an outstretched link between Arlanda and Märsta. The link will make it easier to supply the area with public transport. Sigtuna Municipality demonstrated in connection with the extension of Arlanda's third runway that the motorway generated as much emission as the airport. In order to alleviate the total amount of emission, the municipality acted in support of a rail connection to the airport, which was in fact opened in 1999.

analysis

THE AIRPORT FULFILS primarily a regional function. The location of an airport can entail major differences for different airport municipalities. Certain municipalities are affected to a greater extent than others. Demand for land is affected by a number of factors; the number of passengers at the airport, the distance (in time) and the availability of land in the larger town are examples of parameters that influence the use of land.

WHEN THE TIME interval to the airport becomes an obvious problem, the attractiveness of being located near the airport increases. A common factor is that the airport generates an area of influence that runs along the connecting motorways between the airport and the larger towns. This can be clearly seen in Stockholm, where the stretch along the E4 has been developed over the years, primarily with offices. The northern half of the county has had a better economic trend than the southern half. Proximity to the airport is indicated as one of the factors. A similar pattern can be seen on the part of Landvetter along the Rv 40 road in Råda business park, though even further east in Viared, nearer Borås.

BOTH THE LARGER regions of Barcelona and northern Greater Stockholm have an area of influence for setting up business that is visible to the eye along the motorway between the airport and the centre of the region. In El Prat the business park was established directly adjacent to the airport and the C-31 motorway. Barcelona has in common with Härryda and Arlanda that the dominating activities close to the airport are logistics, service and hotel business.

THE AIRPORT CONTRIBUTES towards generating and maintaining sectors with a high level of competence and salary. The

location of these spreads into the region, however. The difference in size of the regions also has an effect on the use of land. Setting up a company in northern Greater Göteborg does not make the time interval to the airport noticeably long; it is possible to reach the airport from anywhere in the region in a relatively short time. Even though the airport in El Prat is situated near Barcelona, big city congestion may mean that the time interval constitutes a problem. A similar argument can be made for Arlanda, where the airport is situated 40 kilometres north of Stockholm. Getting from southern Greater Stockholm to Arlanda can take time, so airport related use of land is concentrated to the northern part of the region.

COMMON TO ALL parties is that they have reserved land for business parks. The development of business parks has been affected by the general fluctuations in the market situation. The business parks attached to airports are also affected by fluctuations in the air travel market. Viewed in a longer perspective it is the transport sectors that have expanded. Both Björred business park near Landvetter and Arlanda City at Arlanda have connections with the transport sector and expanded during the 1990s. In the business park by the Mölnlycke motorway exit demand has risen in several areas, not only logistics.

FROM EL PRAT'S point of view, emphasis is placed on the important and successful standpoint 15 years ago, when the airport was considerably smaller, to foresee growth and plan a business area near the airport. Arlanda emphasises three successful, strategic investments in their planning: the railway link, the construction of a third runway and the establishment of the Arlanda City business park.

analysis

THE CONTINUED EXTENSION of Arlanda City is supported by strategic decisions. The business park is intersected by the Stockholm-Uppsala motorway and lies adjacent to the exit to the airport. One hypothesis is to use existing thoroughfares and barriers in further planning work, instead of creating new ones. In order to make the business park visible, the two exits to the airport will each form a gateway to the development area. Visually it will appear that passengers pass through the business park, first by the gateways and then through the built-up area on either side of the motorway. The buildings will form an outstretched link between Arlanda and Märsta. This structure will facilitate the work of supplying the area with public transport. There are train stations both in Märsta and at Arlanda and at a later stage the intention is that public transport through Arlanda City should be rail bound. The area will then also be strengthened as a location for new business.

FROM EL PRAT it is emphasised that developments are primarily dependent on the market situation. During the 1960s both the manufacturing industry and housing in the municipality expanded. In recent years – and above all in the past five years – developments have occurred in business parks. Even though it can at present be seen that the strongest development is in the business parks, it can be concluded that in a longer perspective it is sectors and areas linked to transport and service activities that have enjoyed the greatest growth.

A SIMILAR DEVELOPMENT has occurred in the vicinity of Arlanda. The logistics sector has grown near the airport, not only in the airport area but also in the Arlanda City business park. Offices, commerce and service business have not had the same

favourable trend. The display position from the motorway is poorer here than, for example, at InfraCity office and congress centre, situated between Arlanda and Stockholm. The use of land increases where there is a clear display position. In Härryda new business parks are planned for both sides of the airport interchange, including the area between the airport and the motorway.

NONE OF THE parties concerned have controlled the activities to any appreciable extent. They all have a common interest in setting up business with an emphasis on airport related activities, logistics, service etc. Demand has been particularly strong in El Prat in the past five years, so more land has been allocated in direct proximity to the airport, an Airport City. The area will be developed more intensively, with offices, service and the like. The town of El Prat will be joined up with the airport through Airport City in the south-west. The area will also have an Underground station. The logistics field will be strengthened by the expansion of the port, which will also be supplied by an Underground line. By covering over the motorway the town will be extended to the north.

EL PRAT AND Arlanda both emphasise trains as a strategic investment, Arlanda when they got express trains and long distance trains while El Prat, which already has a commuter link, affirms the position with a high-speed train stop in the town centre and connecting Underground lines.

THE AIRPORT GENERATES conditions in El Prat for the municipality to have access to the Underground and express train stop. The improved strategic position has entailed decisions that the town should grow. The strategy effected is to enhance the attractiveness of the town of El Prat by means of the government investments

analysis / conclusions

that are being made and thus enable financing of further development of the town. El Prat has passed a threshold level, from having been a quieter suburb to being a clearly integrated part of Greater Barcelona. Arlanda City and El Prat are joining up existing built-up areas, which strengthens the structure. When the structure has become sufficiently strong, conditions are generated for rail bound public transport, which enhances the attraction even more. There is an attractiveness in contiguous structures. Härryda, on the other hand, wants to spread the buildings, regarding certain places as fully built up, which aims to strengthen the small-scale, green structure. While the topography constitutes an obvious obstacle in Härryda, the greatest obstacle in El Prat is the airport's geographical position. The airport is not permitted to develop freely because of its proximity to the town, the river, the motorway, the sea and the surrounding protected green areas.

Conclusions

There are several common denominators for the objects studied. Though on different scales, it can be seen that, for the three objects studied, the use of land is most intensive in the actual airport area. There is an area of influence that spreads out from there in the traffic corridor, whereby there are conditions for business parks.

BY STRENGTHENING contiguous structures rather than building islands, an enhanced attraction value is attained. Success is based on a combination of a position in direct proximity to the airport and visibility from the motorway, display position, where the business parks that are planned in direct proximity to the airport have had the best land development. Positive experience indicates foreseeing growth and traffic on the basis of the airport's prospects, adapting the business park on the basis of the airport's needs.

From the public planning deed with control of the use of land, it is possible to make use of the positive qualities in contiguous structures. The attraction value of being located close to others and, as in Viared, being part of a growing new district should be recognised. With its stronger structure, the area can more easily be supplied by public transport. The public transport can be rail bound, which improves access and the attraction value even more. This is in progress in El Prat, while it exists as a vision for Arlanda City.

EXPLOIT YOUR NEGOTIATING position. El Prat is the little municipality that has two major government interests within its borders. By negotiation the municipality was able to ensure that the high-speed train track should be led through a tunnel under the town with access to a station. Sigtuna Municipality demonstrated in connection with the extension of Arlanda's third runway that the motorway generated as much emission as the airport. In order to alleviate the total amount of emission, the municipality acted in support of a rail connection to the airport, which was in fact built.

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North East South West
INTERREG III C



Component 4a: Territorial and environmental impacts of airport development