

A photograph of a modern residential building complex. The buildings are multi-story, with a mix of light-colored facades and dark accents. In the foreground, there is a central courtyard area with a glass and metal structure, possibly a covered walkway or a small pavilion, surrounded by greenery and a paved path. The overall scene is bright and clear.

A collection of case studies demonstrating exemplar
'sustainable community' projects across Europe

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'The Egan Review, Skills for Sustainable Communities'¹ defines seven components that together constitute the 'common goal' of a Sustainable Community.

1. **Social and Cultural**
2. **Governance**
3. **Environmental**
4. **Housing and the Built Environment**
5. **Transport and Connectivity**
6. **Economy**
7. **Services**

If Sustainable Communities are to be realised, it is essential that all of the above components are addressed in the long-term.

The diversity of places and populations however, means that no two communities will ever be the same. Varying in size, shape, topography and demographics, every community has very different social, economic, environmental and political requirements and aspirations, and as such the components need to be adapted to each location and to the people who live there.

This collection of case studies attempts to demonstrate the ways in which several countries throughout Europe have tackled the challenging Sustainable Communities agenda. The aim is to inspire those involved in the delivery of Sustainable Communities in the UK, and highlight some of the key issues that need to be considered when creating places for people.

¹ Office of the Deputy Prime Minister (2004) *The Egan Review – Skills for Sustainable Communities*, ODPM

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There is no substitute for visiting projects to experience at first hand the quality and 'feel' of a place, and to develop a personal understanding of how a community works. All of the case studies presented here have been visited by the author, and in many cases, meetings have been held with local residents, designers and key-decision makers involved in the creation of a 'Sustainable Community'.

Sustainable Communities:

"Places where people want to live and will continue to want to live"²

² Office of the Deputy Prime Minister (2003) *Sustainable Communities: building for the future*, ODPM

The Components and Sub-Components of a Sustainable Community as defined in 'The Egan Review - Skills for Sustainable Communities'

Taken from "Office of the Deputy Prime Minister (2004) *The Egan Review – Skills for Sustainable Communities*, ODPM"

1. **Social and Cultural** – *vibrant harmonious and inclusive communities.*

- A sense of community identity and belonging.
- Tolerance, respect and engagement with people from different cultures, backgrounds and beliefs.
- Friendly, co-operative and helpful behaviour in neighbourhoods.
- Opportunities for cultural, leisure, community, sport and other activities.
- Low levels of crime and anti-social behaviour with visible and effective and community-friendly policing.
- All people are socially included and have similar life opportunities.

2. **Governance** - *effective and inclusive participation, representation and leadership.*

- Strategic, visionary, representative, accountable governance systems that enable inclusive, active and effective participation by individuals and organisations.
- Strong, informed and effective leadership and partnerships that lead by example (e.g. government, business, community).
- Strong, inclusive, community and voluntary sector (e.g. resident's associations, neighbourhood watch).
- A sense of civic values, responsibilities and pride.
- Continuous improvement through effective delivery, monitoring and feedback at all levels.

3. **Environmental** – *providing places for people to live in an environmentally-friendly way.*

- Efficient use of resources now and in the future in the built environment and service provision (e.g. energy efficiency, land, water resources, flood defence, waste minimisation etc.).
- Living in a way that minimises the negative environmental impact and enhances the positive impact (e.g. recycling, walking, cycling).
- Protecting and improving natural resources and biodiversity (e.g. air quality, noise, water quality).
- Having due regard for the needs of future generations in current decisions and actions.

4. **Housing and the Built Environment** – *a quality built and natural environment.*

- Creating a sense of place (e.g. a place with a positive 'feeling' for people, and local distinctiveness).
- Well-maintained, local, user-friendly public and green spaces with facilities for everyone including children and older people.
- Sufficient range, diversity and affordability of housing within a balanced housing market.
- A high-quality, well-designed built environment of appropriate size, scale, density, design and layout that complements the distinctive local character of the community.
- High quality, mixed-use, durable, flexible and adaptable buildings.

5. **Transport and Connectivity** – *good transport services and communication linking people to jobs, schools, health and other services.*

- Transport facilities, including public transport, that help people travel within and between communities.

- Facilities to encourage safe local walking and cycling.
- Accessible and appropriate local parking facilities.
- Widely available and effective telecommunications and internet access.

6. **Economy** – *a flourishing and diverse local economy.*

- A wide range of jobs and training opportunities.
- Sufficient land and buildings to support economic prosperity and change.
- Dynamic job and business creation.
- A strong business community with links into the wider economy.

7. **Services** – *a full range of appropriate, accessible public, private, community and voluntary services.*

- Well-educated people from well-performing local school, further and higher education and training for lifelong learning.
- High quality, local health care and social services.
- Provision of range of accessible, affordable public, community, voluntary and private services (e.g. retail, food, commercial, utilities).
- Services providers who think and act long term and beyond their own immediate geographical and interest boundaries.

In addition, a common sub-component across all components is that all provision and/or activity to be high quality, well-designed and maintained, safe, accessible, adaptable, environmentally and cost-effectively provided

URBAN EXTENSION

The Bo01 Housing Estate in the Västra Hamnen (Western Harbour) district of Malmö is the first phase of a long-term development plan for the area. Built for the European Housing Expo in 2001 as the 'City of Tomorrow', the site comprises around 800 apartments and a small number of shops and cafes over 30 hectares.

The Bo01 concept is based on the idea that a sustainable urban area must be made attractive if people are to be encouraged to live and work there. As such, a great amount of attention has been given to the architecture of the site, and buildings have been constructed within guidelines for architectural quality, choice of materials, energy consumption and green issues.

Bo01 aims to be "an internationally leading example of environmental adaptation of a densely built urban area"³ and a demonstration project for other countries. As well as increased biodiversity and recycling of water, resources and waste, the site's energy requirements are met by 100% local renewable energy sources.



Bo01, Västra Hamnen Malmö, Sweden

"An internationally leading example of environmental adaptation of a densely built urban area."

³ City of Malmö (2001) *Green Map of Bo01, City of Tomorrow*, City of Malmö

Background

Malmö is the third largest city in Sweden, with a population of over 250,000. In the 1970's a recession in Malmö's traditional industry of shipbuilding left an abandoned swathe of industrial and dockland along the coastline of the city, including the area of Västra Hamnen.

In an attempt to recover from the crisis that resulted, Malmö set about to develop itself as a major centre for IT-business and knowledge. Alongside the strategic decision to construct the Öresund bridge (opened in 2000) to connect the city to Copenhagen in Denmark, the City of Malmö wanted to develop a new city area that inspired creativity, developed further knowledge and stimulated economic growth.

Public funding was therefore allocated to the reclamation and environmental improvement of the Västra Hamnen site, to stimulate its redevelopment as a new, modern city district.

The first stage of redevelopment, the Bo01 Housing Estate, was built and completed for the European Housing Expo in 2001, with funding from the State of Sweden, the City of Malmö, Sydkraft (a regional power company), the European Commission and private developers.

Today, development is continuing, and the Västra Hamnen district of around 160 hectares, will eventually accommodate 3000 people, either working, living or studying in the area. The focus is on creating a sustainable society and environmentally sound neighbourhood, based on the lessons learned in Bo01.

Key Features

Environmental

- The site is built on reclaimed, previously developed industrial land, thereby helping to protect Sweden's arable and agricultural land.



Smaller-scale buildings at the centre of Bo01

- The Bo01 masterplan helps minimise heat loss from the buildings by placing taller apartment blocks on the outskirts, facing the sea to protect the smaller-scale inner buildings from the cooling effect of the wind.
- A 'Green Space factor' had to be applied to every apartment block and required developers to provide on-plot vegetation such as planted walls or roofs, and surface water courses.
- Biodiversity in the district is enhanced through the provision of bat nesting boxes, butterfly flower beds, a wild Swedish flower meadow, country gardens and open expanses of water.

- As an energy saving measure across the scheme, a target 'energy use' figure for homes was set at less than 105kWh/m² per year (including household electricity).
- Bo01 is a 100% local renewable energy community, with heat produced from the exploitation of aquifers (85%) and from 1400m² of solar thermal panels (15%); summer cooling also from the aquifers; and electricity from a 2MW wind turbine, 3km away and 120m² of photovoltaic panels. Bo01's energy systems are managed and maintained by a regional energy company and are connected to Malmö's community energy systems for heating, cooling and electricity, to allow fluctuations in supply and demand to be regulated.
- Rainwater is treated locally at Bo01 through surface run-off systems, without any connection to the community infrastructure i.e. green roofs, channels and dams.



Rainwater channels



Building-integrated solar thermal system

- Many residents can monitor their consumption of water, electricity and heat through information technology systems in their homes, encouraging the saving of resources.
- All waste (e.g. newspapers, packaging, batteries) is sorted and recycled where possible, with waste separation units installed in homes. Food waste is sorted by means of 'food waste disposers' and a mobile vacuum system that has been built underground to deal with both food and residual waste in separate tanks.

Housing and the Built Environment

- The heritage of the Västra Hamnen district will be retained by restoring some of the large old industrial buildings in the area, contributing to the character of the area and creating a unique sense of identity.

URBAN EXTENSION

- 21 different architects were engaged in the design of the neighbourhood, with the aim of creating a high quality environment with an abundance of architectural expressions.
- Bo01's 'waterfront' character and distinctiveness is created with the integration of canals, recreational harbours, docks and waterfront promenades.
- Design quality is an important aspect of Bo01, and as a condition of building, developers had to adhere to a 'Quality Programme' which defined architectural quality; the character of public spaces; the building's performance; and standards for colours, materials, energy and ecology.



Recreational harbour

- The housing in the development is varied, albeit expensive, with a range of sizes and types provided, and a mix of tenure options including rental, shared ownership and freehold. Student housing is also available within the development.



Social courtyard area

- Urban parks, meeting places and social areas are provided across the site to encourage interaction amongst local residents.
- The outdoor spaces associated with each apartment block at Bo01 are kept well managed and maintained, through long-term maintenance programmes established by the developers at the outset of the scheme.

Transport and Connectivity

- Distance / home working and electronic trade are encouraged in Bo01 through the neighbourhood communications network including broadband information.
- While the car is recognised as an important form of transport and is accommodated in underground car parks, pedestrians and cyclists have priority access across the neighbourhood. A regular local bus service also connects the area to the city centre.

Services

- The Bo01 development supports a variety of shops and cafes, which are well integrated with the housing. It will eventually also be home to a new public school, day-care centres, offices and other local services.



Café on sea front at Bo01

Project References

City of Malmö (2001) *Green Map of Bo01, City of Tomorrow*, City of Malmö

www.malmo.se

www.bo01.com

www.sydskraft.se

URBAN EXTENSION

"Kronsberg sustainable settlement is an example for the world to follow."⁴

The new city district of Kronsberg has been taking shape since 1997 as the largest and most visionary town planning, social and ecological project in Europe. At just eight kilometres from the city centre of Hanover, the first phase of development currently houses around 7000 inhabitants in 3000 dwellings.

A model for waste avoidance and water saving, low energy construction methods are also standard across the development, with the overall aim of achieving a reduction of 60% of carbon dioxide emissions compared to conventional new construction in Germany.

A fundamental principle of the scheme is to achieve a well-balanced social mix, with a range of cultures, beliefs and social backgrounds successfully living and working side-by-side.

The scheme has already received international acclaim and attracts professionals from all over the world as inspiration for their own projects.



Kronsberg Hanover, Germany

"Kronsberg sustainable settlement is an example for the world to follow."

⁴ Johaentges, Karl & Holtz, Eva (2000) *Living on Kronsberg*, Die Deutsche Bibliothek

Background

In the early 1990's, the City of Hanover realised it would need many more new homes if it was to continue to fully support and accommodate the area's population. An estimated 20000 dwellings were needed and Kronsberg was identified as a potential site for these.

Large scale provision of accommodation became a high urban development priority of the City, yet despite the urgent need, the real momentum for the ambitious project only came when the decision was made by the 'Bureau International des Expositions' to hold the Expo 2000 World Exposition in Hanover.

The theme of the Expo – 'Humankind-Nature-Technology' – not only set the guidelines and content of the Exposition, but also served to stimulate interest amongst Hanover's politicians and urban planners for what could be achieved at Kronsberg. They decided that the new residential district should itself become an exhibit, where the principles of sustainability could be applied and demonstrated in practice.

Two major planning competitions were held, a masterplan drawn up for the new district, and plans set in place for the design of the housing. Within ten years a large area of countryside had been developed in phase one of the project.

Phase two of the scheme will see the area develop further and 12-16000 people will eventually be accommodated in 6000 dwellings.

Key Features

Social and Cultural

- In 1997, the City of Hannover offered building plots for 70 terraced houses at below market prices, to help promote the first homes for owner-occupiers as a socially stabilising factor on the Kronsberg development, prior to any social housing being constructed.
- Adequate social and cultural infrastructure from the start of the development has played a critical role in the success of the neighbourhood.
- Many cultures, religions and social backgrounds exist side-by-side at Kronsberg, supported by initiatives specifically for community integration. One such example is the 'Habitat' housing project, which aims to promote multicultural co-existence of German and immigrant residents (10% of the 93 home are built to Muslim beliefs and customs.)
- An on-site 'arts and community centre' forms the focus of the community network combining social, cultural and ecological initiatives and is available for all residents to use. Despite the social mix, Kronsberg experiences no significant social problems, with very little crime, a good quality of life for all and a strong identity with the district.
- To encourage social interaction, many of the apartment blocks across Kronsberg have communal rooms and shared community areas.



Public play area



Social area and ecological project

- A games park, just outside the residential area, provides opportunity for sporting activities for everyone.

Governance

- Kronsberg residents play an active role in the design and development of many projects throughout the site, for example they had the final say on the design of the 'district square'.

- Regular feedback is gained from residents and used to improve local facilities and the development of new projects on the site.

Environmental

- A 'Low Energy House' standard was set for the entire Kronsberg development, meaning that the residential area has successfully managed to reduce carbon dioxide emissions by 60% compared to conventional new construction in Germany. (The theoretical heating demand of homes on Kronsberg is a maximum 45-55kWh/m² per year, the German average is 200kWh/m² per year.)
- The site features a 'Passive House' development of 32 terraced houses requiring almost 90% less heating energy than conventional terraces (15kWh/m² per year), due to 400mm insulation, extremely airtight structures, air extraction plants with heat recovery, triple glazing and solar thermal collectors.



'Passive Houses'

URBAN EXTENSION

- The district is served by two decentralised natural gas CHP (combined heat and power) plants, enabling further carbon reductions.
- Two large new wind turbines at Kronsberg (1.5MW and 1.8MW), together with an existing 300kW roughly meet the electricity needs of residents across the district.
- 104 social housing apartments are heated from around 1350m² of solar collectors, that also feed into a sunken thermal storage tank, meaning that solar energy can be used from spring through to December, covering around 40% of the total heating needs of the homes.



Building-integrated solar thermal system

- Semi-natural public meadows define the edge of the residential area and help promote biodiversity in the district.

- Recycling stations for pre-separated waste such as paper, packaging and organics, are situated through the neighbourhood and underground glass recycling bins help minimise the visual impact of such facilities.



Glass recycling bins

- Consideration was given to waste minimisation during the construction of Kronsberg and excavated soil was re-used in local landscape features to avoid it's transportation to land-fill sites i.e. in raising the noise buffer embankment along the nearby motorway.
- A rainwater management system collects and treats rainwater on-site in 'grassed hollows' that run alongside the pavements, before it flows into a retention area and ultimately feeds into a nearby stream. Two 'hillside avenues' running vertically through the scheme provide additional retention areas during periods of heavy rainfall. An attractive landscape feature, they also help raise awareness of water issues to residents.

- Kronsberg, although built on former agricultural fields and therefore using valuable land, has been constructed as a high density development to help conserve the remaining arable and greenfield land around Hanover.

Housing and the Built Environment

- The quality of housing is an important consideration at Kronsberg, and a variety of architects and developers were engaged to design individual urban blocks within the overall masterplan to create variety and interest in the buildings.
- Kronsberg provides an extensive range of housing types, from small one-bedroomed apartments to large family homes, catering for all ages and circumstances, including the elderly and disabled. There is also a variety of tenures available across the site including affordable housing with moderate rents, low rent homes and owner-occupied residences.



Local 'Agenda 21' housing

URBAN EXTENSION

- The site has several well-used public open spaces including two neighbourhood parks, each with distinctive designs to help define different areas of Kronsberg, and a number of children's play areas. Residents also have access to semi-private courtyards, and in many cases, to private gardens or terraces.



'Private' inner courtyard space

Transport and Connectivity

- Motorised traffic is kept to a minimum at Kronsberg, and traffic calming measures such as carriageway narrowing and speed bumps, are built into the streets at regular intervals to help promote safe cycling and walking. Designated cycling and walking routes also run throughout the neighbourhood, and cycle storage facilities are provided in most apartment blocks.

- Three tramstops serve Kronsberg, each within easy walking distance of all homes, and providing a fast service to Hanover city centre. The transport systems has been specially designed to enable disabled access.

Economy

- The commercial district of Kronsberg (to the west of the tramline) provides around 3000 jobs to local residents and city dwellers. This proximity, also helps prevent the need to travel by motorised transport to the workplace.

Services

- The Kronsberg residential area supports a health centre, a library, a church, a primary school, several kindergartens, shops and offices, and will soon have it's own secondary school.



Kronsberg multi-denomination church

- A decision was taken very early in the project to make high quality infrastructure and services a priority for residents. This has contributed to the success of the neighbourhood.

Project References

Johaentges, Karl & Holtz, Eva (2000) *Living on Kronsberg*, Die Deutsche Bibliothek

URBAN RENEWAL

In Augustenborg, Malmö, Sweden a major programme of work has been undertaken in consultation with local residents and employees to improve the area and help create a more socially, economically and ecologically sustainable neighbourhood.

The regeneration of Ekostaden Augustenborg (Eco Neighbourhood) was started in 1998 as an experimental project to demonstrate solutions to innovative urban renewal. Incorporating measures to manage waste and traffic; increase biodiversity and amenity; and create rainwater management systems and green roofs; it has been described as being "one of the farthest reaching programmes of ecological development in an existing neighbourhood in Europe."⁵

The highly successful Ekostaden Augustenborg programme has attracted world-wide interest and has influenced new-build and regeneration in other parts of Malmö.



Ekostaden Augustenborg Malmö, Sweden

"One of the farthest reaching programmes of ecological development in an existing neighbourhood in Europe."

⁵ Shimanova & Graham (2001) *Echoes of Tomorrow*, City of Malmö

Background

Augustenborg was built 1948-52 by Malmö City Housing Company Ltd., as one of the first housing estates delivered under Sweden's new post-war housing policy. Providing flagship, high quality, spacious homes with modern community facilities, the neighbourhood also boasted a local school and industrial estate, and attracted young families from small, poorly maintained apartments elsewhere in Malmö.

The area developed as a thriving neighbourhood with well-supported local activity, until the late 1960's when a new programme of construction saw modern three- and four-bedroomed apartments in new tower blocks in Malmö competing with the largely two-bedroomed apartments of Augustenborg. The homes that had once been considered so spacious were no longer as attractive and consequently Augustenborg suffered from abandonment, followed by a period of major decline.

In the 1980-90's, a new demand for housing as a result of increased migration to Malmö saw the population of Augustenborg rise once again, this time with a new cultural and social diversity, albeit with many social difficulties. Since the early 1990's, the MKB Housing Company has been working with the City of Malmö and the residents of Augustenborg, with support from the EU's URBAN programme, to physically and socially regenerate the area, to position the neighbourhood of around 3000 people, as a leading example of an environmentally adapted urban area once again.

Key Features

Social and Cultural

- The estate supports a highly diverse social and cultural population, with around 65% of residents being non-Swedish and 45% of population being unemployed.
- Community integration is enhanced through social clubs, sporting activities, cultural events and classes, instigated and supported by the residents of Augustenborg.

Governance

- Local residents, employees and school children are integral to the change process at Augustenborg, taking leading roles in the ideas, design and implementation of projects.
- Regular community workshops, meetings and informal gatherings such as sports and cultural events, ensure that *all* residents' views are heard by the City Authority and the Housing Company.



Recycling house

Environmental

- The Housing Company have undertaken a number of energy saving measures across the neighbourhood, including the more effective steering of heat and hot water systems, new ventilation systems, additional insulation, movement detectors and low energy electrical fittings.
- A pilot energy saving scheme is in place, where resident can pay for the heat and hot water they actually use instead of having the bills included in their rent. (Augustenborg is connected to Malmö's 'community heating network' and there is therefore little incentive to save energy.)
- Recycling is encouraged in 13 on-site recycling houses across the estate, for paper, cardboard, plastic, glass, metal, batteries and organic waste (which is composted on-site in just four weeks). Residents can also deposit unwanted items such as sofas in a central 'exchange room', and take someone else discarded bed.
- Residents can grow their own vegetables in one of the many small on-site allotments. These have proven to be particularly popular with local children.
- Biodiversity in the area is enhanced through a green roof programme; the planting of flowering perennials, native and fruit trees; the development of wetlands; and the provision of bat and bird boxes.



Innovative open rainwater channel



Green roof on industrial building

- A once recurring problem of localised flooding is now prevented through the implementation of an environmental water management system which includes green roofs for rainwater soak-up, an innovative open rainwater channel system, and ponds throughout the neighbourhood.

Housing and the Built Environment

- The 1950's character of the area was damaged in the 1970's the external facades of the housing blocks were covered with steel sheeting. These have now been removed and replaced with external insulation, restoring the identity and 'feeling' of the area, and improving the quality of the indoor environment.



'Restored' apartment block

- The estate supports a specially adapted elderly person's home for local residents who struggle to cope on their own, but do not necessarily want to leave the area.
- Augustenborg has communal gardens, play areas, green spaces and a football pitch that are well used by local children and families.

- Augustenborg housing is let through the MKB Housing Company with affordable rents.

Transport and Connectivity

- Old refuse shoots in the apartments have been closed and broadband computers cables installed in them for the benefit of residents, to enable rapid internet access and TV services.
- Residents have started an 'eco car pool' with a fleet of electric and ethanol cars that can be rented by local people and businesses.
- Safe cycling and walking are promoted through changes and improvements that have been made to the local traffic system.

Economy

- Many of Augustenborg's population are employed locally, for example, with the grounds maintenance contractor or within the estate's industrial area.



Grounds at Augustenborg

Services

- A primary school on the estate provides local children with good quality education. There are also a small number of local shops run by the community.



Neighbourhood school

Project References

Shimanova & Graham (2001) *Echoes of Tomorrow*, City of Malmö

www.ekostaden.com

Other Sustainable Community Projects

New Communities

Urban Infill

- **BedZED, Beddington** Sutton, UK

Urban Extension

- **Ørestad** Copenhagen, Denmark
- **Greenwich Millennium Village** London, UK
- **Sherwood Energy Village** Ollerton, UK
- **Vikki** Helsinki, Finland
- **Quartier Vauban** Freiburg, Germany

Existing Communities

Block Refurbishment

- **Hedebygade Block, Vesterbro** Copenhagen, Denmark
- **Hestestalds-karreen, Vesterbro** Copenhagen, Denmark
- **Wilhelmina Hospital Grounds, Utrecht** Amsterdam, Netherlands

Urban Renewal

- **Pilestredet Park** Oslo, Norway

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