



Echoes of Tomorrow

“.....we must create an environment in our society that promotes co-operation between people and helps them become informed and active citizens”

Uno Åhren from “Final Report of the Social Housing Policy Commission” SOU 1945:63

From the sixth floor Ingrid looks out across the pond glistening in the sunshine towards the green roofs of the industrial estate, now in their full spring splendour of red and yellow flowers. The schoolchildrens' voices can be heard from their exuberant games in the new schoolyard by their eco-buildings while melodic rythms flow from the music playground. Ingrid waters her young tomato plants shooting up from the wonderful local compost and then collects her coat.

After a short stop at the resource house where she throws her food waste and other recycling, Ingrid gets on the electric street train and glides off silently to town. It's so much easier to get around nowadays since the train stops outside the door and the house has been adapted for elderly residents. And by just paying for the energy she actually uses, Ingrid has managed to save a little extra each month for her grandchildren. It's important to think of the grandchildren...

Ekostaden Augustenborg – the Augustenborg Eco Neighbourhood – is one of the farthest reaching programmes of ecological development in an existing neighbourhood in Europe. The programme was developed through an initial partnership between the MKB Housing Company and the City of Malmö who owns the industrial area in Augustenborg. Local residents, businesses and other organisations have been involved in the development and implementation of the project.

Ekostaden started in 1998 and the first phase of the programme will be complete in 2002.





Inga-Lill Hallberg, born, bred and active resident in Augustenborg

"This was a really green area when I was little and there was everything here that you could want - post office, bank, chemists, food shops and loads of community groups where we youngsters could meet and spend our time. Some of us still live here. I came into contact with Ekostaden when we were arranging a celebration for Augustenborg's 50th anniversary. I think it is great that Ekostaden is returning Augustenborg to its former glory when it was green and newly built and also make it into an environmentally sustainable area."

"If all the cookers of Augustenborg were piled on top of each other", boasts the first booklet about Augustenborg from 1950, "then the

tower would be fifteen times higher than the steeple of Petri Church in Malmö. If all the bathtubs were placed end to end they would stretch from the Central Station to Nobel Square, and the floor area is the equivalent of a five metre wide road of parquet and linoleum from Malmö to Lund." The same booklet proudly dedicates a whole page to a description of the district heating system under the title "Three Tonnes of Coal per Hour". Milk shops, grocers, butchers, bakers, tobacconists, shoe shops, toy shops and even a self-service food shop were amongst the services for the new residents.

Such new-fangled luxuries were one of the proud boasts of one of the first housing estates built in the new post-war housing policy in Sweden. New spacious homes with modern facilities and a high quality living environment were the foundation of the new Sweden

of which Augustenborg became a leading symbol.

Augustenborg was designed by Riksbbyggens architect bureau in Stockholm for the newly started Malmö City Housing Company, a wholly owned subsidiary company of the City of Malmö. Work started in February 1948 and the housing estate was complete in 1952. The school was completed in 1956 and an industrial estate was built during the 1960s.

Many of those who moved into Augustenborg were young families from small apartments elsewhere in Malmö, often in a poor state of repair with few facilities. Those who remember the Augustenborg of the '50s and '60s recall the children and all the activities going on locally – the football club, the cinema, the wrestling club, some of the small "gang wars" with surrounding neighbourhoods and other colourful reminiscences.



In the late '60s and early '70s, however, things started to change. The largely two bedroomed flats of Augustenborg, once considered so spacious, had now been surpassed by more modern tower blocks with three and four bedroomed apartments. Attempts were made to modernise the district with laundry rooms in each building and the closure of the local boiler house and incinerator so proudly opened in the '50s. But a migration

from Augustenborg left empty apartments and increasingly a sense of abandonment prevailed. Augustenborg had left the limelight and became a forgotten corner of the city nursing a bruised history and a socially strained present.

New migration to Malmö in the '80s and '90s managed to increase the population and brought a new cultural diversity to the neighbourhood, although many of the social difficulties continued. Since

the early '90s, the MKB Housing Company has been working actively on the social and physical regeneration of the area. The EU's URBAN programme has supported improvements in the area and further initiatives are currently taking place.

Augustenborg has now become a leading example of environmentally adapted urban renewal and the focus of attention once more from home and abroad.



Bottom, green roofs on the industrial estate, top left a drop channel constructed by Morten Ovesen, on top kids swimming in the flood and above one of the ponds in the area.

Floating cars in basement garages, washing machines under water, small businesses where staff roll up their trousers and put their shoes on the desk - a frequent sight in Augustenborg in recent years. In addition to the inconvenience and costs associated with the regular flooding in the neighbourhood are the additional environmental problems of releases of untreated waste water.

At the root of the problem is a combined sewage and rainwater drainage system that is underdimensioned for modern conditions where green space has been replaced with hard surfaces and natural streams have been culver-tised. In parts of the city these problems become acute and in Augustenborg new solutions are being sought.

The rooftops of the industrial estate are no longer black bitumen but vary in colour from lush green

to brilliant yellow and deepest red as the seasons and weather conditions change. Millions of spring-time flowers transform the formerly drab roofs into a wonderful garden and feeding ground for butterflies, bees and other insects.

Over ten thousand square metres of green roof now adorn the offices and workshops of the industrial area and can also be seen on school buildings, the recycling houses and other new buildings in Augustenborg. Apart from looking wonderful and promoting a diversity of plant, insect and bird life, Augustenborg's Botanical Roof Gardens also have a huge number of other benefits, currently being researched by several academic institutions. But the principle feature in Augustenborg is the ability of the roofs to cope with extreme drought, whilst at the same time being able to soak up huge amounts of rainwater.

Up to 70% of the rainwater that falls on the rooftops is held there in the layers of stonecrops and mosses, soil or the underlay of gravel, mineral wool or recycled polyurethane. A large proportion of the rainwater run-off from the industrial estate is consequently kept out of the drainage system, thereby decreasing flood-risk.

The water from the rest of Augustenborg is then led into a large-scale open rainwater system that guides the water from drainpipes into small channels which in turn fill larger channels and ultimately a number of ponds throughout the area. Rainwater, instead of being a problem in Augustenborg, is now becoming a resource. The ponds will become the focus for increased wildlife, open water is pleasing to the eye and creates wonderful play opportunities for inner-city children.



Morten Ovesen, resident, carpenter, craftsman and water innovator

"I was asked at the start of the project if I wanted to design the rainwater system. The Institute for Ecological Technology, now based in Augustenborg, has done research into the movement of water for 6-7 years. I have introduced my and IET's ideas into the project and I have been consulted in various ways. Ekostaden is an attempt to create a green oasis in the urban environment with the aim of promoting an ecological message."

The rainwater system has also spawned a new local business. A resident who had spent years of amateur research in a cellar in Augustenborg presented his ideas to Malmö's Water Department who hired his services to support the system's design and construction.

breathing space

Hiding in the willow undergrowth, crawling through the tunnel, splashing in the pools of rainwater or playing on the play equipment - there are many new and exciting experiences in Augustenborg School's new playground. A new basketball court doubles up as a large magazine for rainwater, the amphitheatre can flood from time to time to stop flooding in the cellar of the schoolbuilding; trees, bushes and flowers soften up the area and the children grow vegetables and herbs in numerous raised beds.

The dull old playground has come alive with voices and greenery. The infants' playground was previously dominated by a temporary classroom which has now been replaced by a new eco-classroom on adjacent land. The new demountable building is made primarily with natural materials, has composting toilets, solar collectors and heat pump



heating with an insta-heat booster system for maximum efficiency, and of course green roof.

The pupils have helped build their own recycling house from straw and clay where they now can recycle their waste and compost left-overs from the dining room.

Low-flush toilets have been installed in new entrance buildings, also with green roofs, and work has taken place to decrease energy use.

Pupils have been involved throughout the change process and are now working towards the Green Flag for the school.

Augustenborg's school also played a key role in the design of changes to the park where the music gardens and music playground are the result of the planning process and a new stream and pond surrounded with native trees provide space for play, relaxation and nature study, whilst taking care of rainwater.

Local residents have also been actively designing changes to their communal gardens around the tenements. The design process has

taken place over three years involving thirty gardens with several meetings with residents around each yard. The result is a programme of changes with more trees and flowering plants, more benches, ponds and water channels, vegetable plots and fruit and berry bushes all creating a pleasant living environment.

Green waste from the gardens and park is composted and returned to improve the impoverished



Safija Imsirovic, resident, co-ordinator of GNISTAN - community organisation for young people

"I got involved through residents' meetings. Ekostaden has opened our eyes through information, residents' meetings and seminars. You can always ring or drop in and all ideas are taken seriously. Community participation has woken up too, people are beginning to realise that their living environment is important."

soil. Electric and ethanol powered hedgetrimmers, lawnmowers, and other machines will decrease noise disturbance and drastically decrease harmful pollutants. Local people are now working for the maintenance contractor and contributing to the development of a far-reaching ecological maintenance programme.





Marie Gustafson, resident and member of the electric car pool

"As a local resident I think it is good that we can come with suggestions and opinions and that someone listens to us. Ekostaden has been a great support when we were starting up the electric car pool. When people ask about Ekostaden I usually say that it is ecological living in the making."

It is important to be able to get about easily, to get to work, school, the shops or the doctors – but it is not always so simple. Bus services cannot always take the routes some people want to travel, cycling and walking are not for everyone, and car travel is fraught with

expense, congestion and pollution. In Augustenborg new attempts to increase mobility are taking place.

The Green Line's zero emission electric trains glide silently through the streets of Augustenborg, picking up local people and dropping them off at the bus station, the doctors, the post office or the bank.

Neighbouring areas which have these services are not easy to reach on the bus or regional trains which stop at Augustenborg, so a new form of neighbourhood transport that could cut to the heart of residential communities with no noise and no pollution was developed in the Ekostaden programme. No supplier of an appropriate vehicle could be found, so the project helped establish a new local business to design and build two prototype trains that now serve a number of peripheral communities every half hour. Other areas



have expressed an interest in the trains and a Green Line is proposed to solve transport problems in the city centre of Malmö and in the district hospital. The electric



trains run on a battery unit charged with eco-labelled electricity and rubberised wheels, so there is no need for expensive infrastructure, and after the trial period the

Green Line service could easily be transferred to a different part of the city if necessary.

The electric trains have stimulated other local debates on transport which has resulted in a number of residents starting Augustenborg's Electric Car Pool. Two electric cars are charged with eco-labelled power at a rapid charge station by the main square in the neighbourhood and local people and businesses can borrow the cars and pay by the hour and also park free of charge throughout the city. A quick swipe with the membership card in the local supermarket releases the keys and a second swipe when the keys are returned registers the time and bills the member's account. The result is an efficient, clean and cheap form of car ownership for the future.

Changes are also planned to the traffic system in Augustenborg to dramatically decrease through



Goran Nikolic, resident and electric street train commuter

"I take my son to nursery every day. I used to walk, cycle or take the bus. The electric street trains are the best thing Ekostaden has done - a rolling meeting place. I was even involved in making the first display that was presented to residents where we could see the ideas for the Ekostaden programme. Augustenborg was once a "town in the town" with its own infrastructure and identity. Ekostaden is trying to regenerate the area with an added ecological dimension."

traffic and create a safer and cleaner local environment, and promote cycling and walking as well as encouraging the use of Augustenborg's new clean transport systems.



Hatidza Musa, resident and consultant in Augustenborg

"I have been involved in the Ekostaden project both as a resident and as an employee. You can make your voice heard and get information of benefit to yourself and your wallet that can help you change your lifestyle. The best thing about the project is that it has united so many people and organisations, everything from residents to businesses, community groups, the housing company. You can already see the effects of the project - the car pool, school yard, recycling houses..."

"There's no point separating our waste", was one of the common complaints when Ekostaden got underway in 1998, "everything just goes to the incinerator anyway". But residents have now seen how

things actually work, they have been to the regional recycling plant and even followed waste up to Europe's largest paper mill. Old plastic bottles are now coming back in the shape of compost machines, and composted kitchen scraps feed tomato plants and roses on balconies and supply an organic farmer on the outskirts of the city. In fact there's not much waste left, mostly just resources.

Sixty households helped shape the recycling system in a pilot scheme where they followed the path of their waste, visited collection systems in other Swedish cities and made suggestions for the design of recycling houses in Augustenborg and methods of informing and enthusing residents. Thirteen recycling houses have been built throughout the housing estate and one has been built by school pupils in clay and straw so that they too can recycle.

Residents can separate paper, cardboard, plastic, glass, metal, batteries and organic waste which is transformed by the compost machine to a nutrient rich compost in just four weeks. In the near future residents will also be able to separate bulky waste, textiles, electronic and hazardous waste and a *swap shop* is planned for reusable items.

Over 65% of waste is already recycled and by the time the system is fully operational 90% will be recycled or reused. The old refuse chutes in the houses have been closed and broadband computer cables have been installed for rapid internet access and TV services for residents, but also for a pilot energy saving initiative.

Residents in two blocks will start to pay for the heat and hot water that they actually use instead of having everything included in the rent. In this way it will become pos-

sible for them to save money by behaving in a more environmentally aware fashion. The basic idea has been developed through dialogue with local people leading to a series of energy workshops and information on home energy conservation.

The MKB Housing Company has carried out a number of energy saving measures including more effective steering of heat and hot water systems. A number of houses have had new secondary insulation installed, dramatically improving the external appearance of the buildings whilst cutting energy use. The old steel cladding which had caused internal climate problems was removed and the facades restored to their 1950s grandeur. Low-flush toilets have been installed in the school and a new school building has been equipped with solar collectors, a heat pump and insta-heat system. Two other build-

ings are to be linked into the district heating scheme and the district heat culverts have been reinsulated between two buildings to minimise heat loss. New ventilation systems, additional insulation, movement detectors and low energy electrical fittings are all examples of the kind of energy saving initiatives that have been undertaken.



want not

Many questions arose from residents during work around energy issues in Augustenborg, for example - why are there no wind turbines in our eco-neighbourhood and why should I save energy if it's just the landlord who saves money?

These questions became the basis for a development process involving residents, the housing company, the City of Malmö, Syd-kraft, Malmö University and others. The resulting Climate Programme aims to decrease energy use and increase the use of recovered and renewable energy.

A barrier to decreased energy use is the fact that hot water and heat are included in the rent in most Swedish apartment blocks. A basic indoor temperature of 21°C can be included in the rent in the future, but a lower indoor temperature would result in a cost saving

for the resident and a higher temperature would cost more.

The mechanical ventilation in the high rise blocks expels warm air all year round without heat recovery. It is now proposed to transfer the heat to the district's heat system where the demand for hot water is constant throughout the year.

In addition there will be 200m² of solar collectors and 100m² photovoltaic panels integrated in the roofs of the housing estate and school. The solar collectors will feed into the district heat system and the solar panels will produce electricity for the heat pumps.

A heat pump and refrigeration plant is planned to be installed in the park where piping in the tarmac will create Malmö's coolest tennis court during the summer months, which in the winter will be transformed into the ice rink that

the children of Augustenborg have been longing for. The heat will be fed into the heating system.

Hot water use is highest in the morning and evening when people are washing up or having a shower, but most solar hot water is produced in the middle of the day. A large accumulator tank, possibly constructed in an underground garage, will store hot water until needed.

Augustenborg's Climate Programme will be a cutting edge concept which, if successful, can create opportunities for similar initiatives for energy reduction, recovery and small scale renewable production.



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