



EKOSTADEN AUGUSTENBORG
- Towards a Sustainable Neighbourhood



A unique process

Ekostaden Augustenborg is a unique process, fuelled by diverse needs with a common goal, without a finishing point. Around 15 000 visitors from near and far have visited to see what has been achieved in the name of social, ecological and economical sustainability.

The process started in 1997 during discussions about closing down Kommuniteknik's industrial area. Peter Lindhqvist at the Department for Internal Services suggested that an eco-friendly industrial park should open in the area. At the same time Bertil Nilsson, former headmaster at the school in Augustenborg, had become one of the co-ordinators for the Swedish Urban Program in Malmö. He contacted Christer Sandgren at MKB, Malmö's public housing company, who was their housing manager for Augustenborg, with the mission to renew the area. The three men pulled all their strings and gathered a group of senior officers, colleagues and, most importantly, area residents, who all wanted to turn the area into a sustainable district of Malmö. Some finance was raised from the Swedish government's Local Investment Program (LIP), a steering committee was founded and in 1998 a model of the area with suggestions for change based on the wishes of local stakeholders and residents was presented: No more flooding, green roofs, a musical theme playground, an open storm water system... Close to 400 people showed up at the first meeting.

Early on in the process the three men, who did not know very much about environmental projects, agreed with other partners that they would only talk about the area in positive terms, with residents, media and everyone involved in the process. Little by little the negative media coverage was replaced by positive news about the sustainable progress. Difficulties were

replaced by opportunities. The Augustenborg soul, which all three mean is present in the area, grew stronger. A project leader, Trevor Graham with experience from Groundwork in England, was hired.

Many lucky circumstances came together during the process and many separate needs could be satisfied. There was no competition within the group, everyone realised the advantages from cooperation instead of only looking out for themselves.

A huge amount has happened in the ten years since the process started. Christer especially remembers the outdoor cinema which filled up the square, all three of them bear witness to the strong partnership and the importance of constantly keeping up the involvement of the residents. Local businesses were also involved. They were first presented with the basic ideas for change and then came back with their own ideas connected to them.

The three of them now hope that the City of Malmö learns from all that has been done in Ekostaden Augustenborg which is actually better known in the rest of the world than in Malmö. It is a long process to change established ways of working in a city and they are clear that more partnership working and cooperation is needed in order to be able to create a sustainable society, building on their experiences from Augustenborg.

The process Ekostaden keeps on going, the next step is to erect a wind turbine. Ekostaden is never finished, and that is just the way it is supposed to be.

From the left: Bertil Nilsson, Christer Sandgren and Peter Lindhqvist.





The Mayor and chairman of the executive committee of the city of Malmö, Ilmar Reepalu.

The first public housing area in Malmö

The Mayor and chairman of the executive committee of the city of Malmö, Ilmar Reepalu, has been involved in Ekostaden Augustenborg from the start. With his background as an architect he has a well-founded interest in how a city area is affected by different actions, not only technical actions but also the democratic processes which are the basis of the changes.

– Augustenborg was the first public housing area in Malmö. It was almost self sufficient with its own coal fuelled central heating power plant and it had a central laundry facility. When it was planned, unique "sun-studies" were done to get optimal conditions for playgrounds and yards. This was a fine place to live, with bathrooms and balconies. But at the end of the 1980's the area was not so popular. It became an area where you only stayed for a short time and something needed to be done, says Ilmar Reepalu.

Two important questions in the process were how the residents could be involved and how their views could be taken seriously.

– During the meetings with the residents in Augustenborg we asked them what they thought was good about the area and what they thought needed to be changed. We asked: What can you do and what can we do? The most important for the residents was to lower the costs of living. We then focused on lowering the energy consumption, partially by behavioural changes, partially by technical solutions. The flooding of the area was a problem, we then started to build green roofs and open storm water systems. The residents were involved in the process and that gave them the inspiration and the patience to wait. But it was also important that some things happened very quickly so that they felt that their input meant something.

All actions, such as facade renovations and recycling houses, were agreed on together with the residents.

– We are now moving on in the area and are working with a plan for the old central heating plant, where we are building new houses. We want to make the city more compact and build larger apartments in the area so that Augustenborg can again become the family area it used to be. It is indeed a very child friendly district with nice playgrounds and plenty of greenery. We are also moving on with individual monitoring of hot water consumption in order to decrease the energy consumption even more.

Augustenborg was a pioneer area when it was built and through the Ekostaden-project it is again playing a leading role in city development. The knowledge from the project will be applied in new projects in the city when the post war housing areas are renovated and when south-eastern Malmö is renewed.

Ilmar Reepalu identifies that the key word in the process is participation. Without participation, what is done will have no effect.

– The residents in the area are the experts. Dialogue with the residents also creates a good breeding ground for local community groups. The most important thing we have learned from Augustenborg is how crucial participation is. In order to have sustainable city development the children need to understand how everything is connected, for instance by planting trees.



Trevor Graham, project leader for Ekostaden, playing the xylophone at the Musical theme-playground, a popular spot in Augustenborg.

“Augustenborg is not enough”

Trevor Graham was recruited from England in 1998 as project leader for Ekostaden and has coordinated the project, first from his base at Fosie Administration and later from the Environment Department. We meet at the Musical theme-playground, one of many projects he has taken part in launching. In the background a red and white chimney points to the sky. – This used to be one of the first district heating facilities in Sweden, and also a central laundry facility, says Trevor and shows us a more than 50 year old MKB-brochure with the headline “5 000 kg coal per hour”.

A lot has happened since then. When Augustenborg was built around 1950 it was an attractive area. But as Malmö grew larger and tenants moved to newer and bigger apartments in other areas such as Lindängen and Rosengård, Augustenborg became less popular and it started to get a bad reputation.

The turnaround came in the early stages of the Ekostaden project. The area was now close to the city average in unemployment, despite the fact that the number of immigrants had increased.

– But it is hard to say how much depends on the environmental focus, says Trevor. Another interesting number is that the car ownership in the area has only increased by one percent in 1998-2007, despite the socio-economic improvements.

Trevor has a lot of stories to tell from his almost ten years in the project. He says that the best experience is to see how people have grown.

– One of my strongest memories is the Somali gynaecologist who had been unemployed for a long time and who was working with recycling in the area in an employment creation project. We gave him time off on Fridays to explore openings in the healthcare system. He ended up studying again and is now working as a doctor. Another story is the woman who was very much opposed to recycling, but who became a resource when she discovered the car pool and became involved in it. There are many examples of individuals who have found their part in the project, contributed to it and grown from the experience.

Even what has not worked has contributed with important lessons, such as the Green Line electric street trains, which were shut down after two years.

– We learned that it is possible to find new technical solutions. It was unfortunate that the innovation was not taken into further use in Malmö. We had inquires from Mexico City and from a medieval town in Portugal who wanted to buy trains. I think we were ahead of our time and that it now would be possible to find investors.

Trevor says that the greatest challenge has been continuity.

– Since the project was based on involvement from the residents, it was very strong in the beginning. But it faded as the partners in the project changed priorities and due to changes in staff. We now need to find new ways to do things, based on letting go of power. In order for people to become involved they need to have more control. You then have to accept that things don't always happen exactly as you want them to. But it creates interest and diversity. We also need to find a long term structure for maintenance in order to keep a steady focus on the environmental awareness among the residents and to inform newcomers about what has been done in the area. This way, minimising environmental impact will become second nature for the residents.



Trevor is convinced that it is not enough that Augustenborg is an eco-neighbourhood, every area in Malmö should have the same focus, and more areas in Sweden and in the rest of Europe. The number of study visits, for instance 40 French city officials we meet during our walk is a good sign.

The experiences from Ekostaden are now being applied in the Malmö project “Sustainable regeneration of post war housing”. The “million-homes” (a national strategy to build a million homes i Sweden in the 1960s) are in great need of renovation. The project analyzes what has worked and not worked in Augustenborg when it comes to facade renovation, storm water handling and involvement of residents.

– I see Augustenborg as a pioneer area in work to create sustainable urban neighbourhoods. We must always look 50-100 years ahead. We know that the world will look very different then, so it is important to make the right decisions.

The Musical theme-playground is a natural meeting place for children of all ages.



The natural cycle becomes visible with worms in the basement

The school in Augustenborg is full of clever and beautiful eco-solutions. The school has students from year one to nine. The different levels are separated from each other by green zones and playgrounds. Close to the school is the park with a musical theme playground, a football pitch and a basketball court. Open stormwater drains in the green area and in the schoolyard leads water into a pond where the children can explore small underwater creatures.

The schoolyard was mostly covered in asphalt before the Ekostaden project started. The trees were chopped down little by little due to elm disease. The school now has new trees and an outdoor classroom where the children can sit outside and study. Exciting stormwater channels turns into the Niagara falls on really rainy days. The students have participated in the change. After inspirational study visits in Malmö and Lund they were involved in the design of the schoolyard.

The pride of the school is the eco-pavilion with several classrooms. The building is completely recyclable and can be taken apart and moved. It has green roofs, natural materials and movement detectors which save energy.

The waste from the toilets in the eco-pavilion is taken care of in a so called Aquatron. The urine and the faeces are separated when sucked down at high speed into a special tank in the basement. The urine is flushed out into the drain and the faeces are taken care of by worms, which in an odourless process make high quality soil. The Aquatron

only requires an occasional spin and is only emptied every other year. The soil is then used in the flower beds. This way the children get an understanding of the natural cycle.

– The green roof has a cooling effect in the summer, says the school caretaker Lars-Olof Åberg and points to the beautiful sedum roofs which turn green, brown, yellow and red depending on the time of the year.

On the roof there is also a solar energy system, which heats the water for the eco-pavillion. The pupils can come down with Lars-Olof into the basement to check out both the solar system and the Aquatron.

From the eco-pavilion it is not far to the recycling house, built of straw, cow dung and clay, and mostly by the children. In here food waste, glass, aluminium, paper, fluorescent lamps, batteries and toner cartridges for printers are recycled.

– MKB arranges an annual cleaning-up day when the children tidy up the neighbourhood and the money goes to charity; this year to a project in Malawi, says Lars-Olof. It is very good when the children participate in taking care of the community.

The parents are also involved in the process. Based on their opinions the Streets and Parks Department has provides new traffic solutions outside the school where cars, bicycles and pedestrians are separated.

Caretaker Lars-Olof Löfgren shows the worm composting system to Valentin, Sebastian and Elsie Santis and Leon Bagora Gustavsson. A teenager rests between classes at the schoolyard.





Åse Dannestam and Hampus Trelid from MKB are very positive to the development in Augustenborg, which makes it a more attractive area for both the young and the old.

MKB: The future lies in strengthening the profile of the area

A lot has been done, but a lot is still left to do. This is how the public housing company MKB's thoughts about Augustenborg can be concluded. The great challenge and also the opportunity is to work with the awareness of residents in order to further increase the environmental benefits and also the quality of life in the area.

Hampus Trelid is estate manager at MKB, Åse Dannestam is environmental project manager focusing on customer behaviour. Both of them are quite new in the Ekostaden project.

– Most of what has been done is physical change like green areas, storm water and recycling. We have come far when it comes to technique, but we now want to focus more on the behavioural side. This is the most beautiful MKB area with its attractive outdoor environment, says Hampus Trelid when we meet at the senior citizen's café Sommaren and out of the blue are served delicious waffles.

Åse Dannestam says that it is always easier to involve the residents in the beginning of a project and that MKB now again wants to focus

on the people who live here. MKB plans individual meetings and customer get-togethers with the residents. In 2007 around 200 new families and tenants moved into the area so there is a great need for constant information.

Since all of MKB's apartments are rented out immediately it is hard to say if the people moving to Augustenborg specifically choose to live in an eco-neighbourhood. But with an even stronger profile Hampus Trelid hopes that it will become more of an active choice to move here.

– The purpose with the increased focus on information is to highlight the entire eco-neighbourhood philosophy. The residents should know why the water channels look like they do and tell their friends and relatives who are visiting. At the same time we have to realise that all of the residents are not unaware. Many of them are involved and committed and are for instance experts on recycling, says Åse Dannestam.

We take a walk from the café to one of the recycling houses, where Suchun Huang, who is responsible for the 13 recycling houses and for the outdoor environment, shows us the latest innovation: A unique system for taking care of hazardous waste. The residents leave their hazardous waste in red plastic boxes which are slid into a blue cabinet. When the box is inside the cabinet only the staff can open it and separate the waste into different materials. The cabinet, which is specially designed for Augustenborg, is then emptied by SYSAV, the regional waste company. Next to the cabinet there is a round box for recycling fluorescent tubes and a big shopping trolley for electronic waste.

A new cooperation has started with the school on MKB's initiative where some classes will make art out of the different waste streams, for instance plastic and metal. The art will be shown in the recycling houses and in this way show where to throw the waste.

Some major technical changes are still taking place in the area: The whole area is being re-plumbed and bathrooms are being renovated in a rolling programme over a ten year period, using a system which is easier to change again in the future. The continued renovation of the facades will have to wait until an optimal energy solution has been identified with the assistance of Lund's Technical University in a joint project. Five of the facades in the area have been insulated, renovated and restored.



What will Augustenborg look like in ten years? Hampus Trellid thinks the houses have urban wind turbines on the roofs, Åse Dannestam thinks people will move here because they really want to live in an eco-neighbourhood.

– In ten years we might have built a house which does not need any added energy – a passive house - with around 12 floors which attract people who want to live in new and larger apartments, says Hampus.

– It is a vibrant urban neighbourhood where we have succeeded in creating an "Augustenborg-spirit", where people hang out together and barbecue. Residents and people from other parts of Malmö stroll on "the healthy path". In ten years it will be even more popular to have a sustainable lifestyle, says Åse Dannestam.

At the senior citizen's café Sommaren the visitors can socialize and take care of the garden. Suchun Huang is responsible for the 13 recycling houses.





Ekostaden Day offers both entertainment and a strong sense of community.

Ekostaden Day - sustainable inspiration

Ekostaden Day has been arranged since the beginning of the project by local organisations and businesses and of course the project and MKB. It has become an appreciated, (almost) annual event which attracts hundreds of residents and visitors.

The purpose of the day is to highlight the issues of sustainable development in a positive way and to raise awareness. It is also a good forum to interact with the residents and to get in touch with their views and opinions and for the local companies and groups to make themselves known.

The day for instance offered an organic market where the food waste was turned into biogas, live theatre by Teater Augusten, a dance show with children from Gnistan, a musical theatre performance with a pirate theme, an acrobat and the Göingeflickorna singers. The seniors from café Sommaren paraded in beautiful hats and the residents bought and sold second hand stuff.

The animals were also represented with Rat-agility and Rabbit-bingo. Those who were interested could take a guided tour at the roof garden or take the historical tour. In one corner of the square the residents could also meet representatives from MKB.

Voices from Augustenborg:

1 Daniel Hermansson with dog Mysan, Augustenborg resident for 1 year:

This is a pleasant place during the day, not quite so pleasant at night when I don't feel safe. The outdoor environment is really good. I like the water channels and the recycling houses. Most people recycle well.

2 Haris Brankovic, Augustenborg resident for six years:

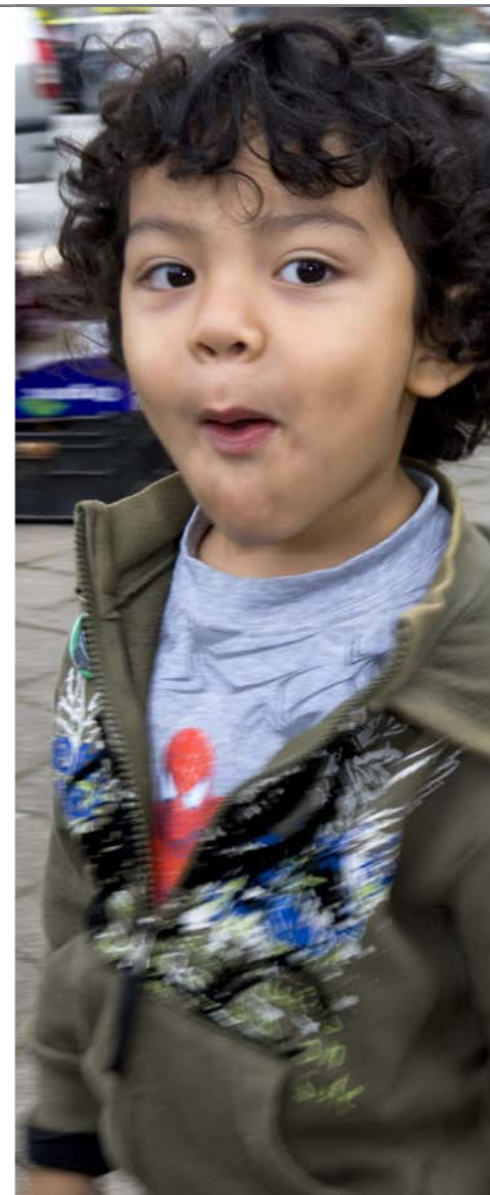
It is calm and nice here, especially around the square and the park. Augustenborg is one of the best areas in the city with the greenery, canals and nice playgrounds. MKB has done a really good job. I have recently started Fosie Basketball club and hope to involve a lot of kids and young people in the area.

3 Margareta Svensson, Augustenborg resident for 40 years:

It is a great area. I like to go to café Sommaren and play canasta and have a good time. The outdoor environment is nice, it is clean. I am now looking forward to getting my bathroom renovated.

4 Manda Puaca, Augustenborg resident for ten years, has reluctantly moved:

This is a great area. I didn't want to move, but I have four children and the apartment was too small. I feel safe here. Everybody looks after each others' children and knows each other. My children really had a good time at Gnistan.





Safija Imsirovic, resident and manager of the open after-school club Gnistan talking to a neighbour passing by.

Positive change with parents and children in focus

Safija Imsirovic is a terrific example of what a strong local participation can achieve. She has, by herself and together with others whom she has inspired, been an important driving force in the transformation of Augustenborg. When she moved to Augustenborg from Rosengård in 1997, the Urban Program was up and running in the area. Soon after came “Storstadssatsningen” at the same time as the Ekostaden project.

– The change was drastic from run down facades, yards and playgrounds to healthy and environmentally friendly spaces. In Ekostaden all the residents, young and old, were taken into consideration, as well as the animals and the plants. Now the fish swim among water lilies in the beautiful ponds, says Safija.

Safija worked at a nursery with many immigrant parents who said that they did not have anywhere to leave their kids when they were taking Swedish classes or looking for work. So she started her own after-school club, first in the park. After a while MKB lent her a space in a basement. She named it Gnistan. As Augustenborg evolved, so did Gnistan.

– Gnistan has always tried to solve problems along the way. It is a place where parents safely can leave their children when they go to work, to



school or just to run some errands. Some people have got a job after job training at Gnistan. Every summer a number of students work here. A strong cooperation between employment agencies and social services and other authorities has formed, says Safija.

Through long term commitment, Gnistan has evolved into a central meeting point for a daily dialogue between parents and the school in the area. The cooperation resulted in a parent organisation where the influence of the parents in the education of the children is the focus. Parents learn more about how the school and the school system work in Sweden in order to be able to be more involved. Meanwhile the children at Gnistan get help with their homework, have arts and crafts, dance, and play indoors and outdoors. Responsibility and participation is central at Gnistan, located in a basement with nice flower beds out front.

– If children are given responsibility, they become responsible, says Safija. The children are involved in everything from day one. It is crucial that they feel participation.

This was the case also when the unique "Rabbit hotel" opened. The children drew up a budget, purchased everything needed and formed an organisation with chairperson, accountant and secretary. The children now together take care of around 15 rabbits in another basement which MKB has set up after the input from Safija and the children. On weekends the children and the parents are in charge of rabbit care. The children grow carrots for the rabbits outside and fertilise them with the droppings. The natural cycle is made very visible and the children take their involvement home with them to their parents. The children call the project "From poop to carrot".

– The children decorated the space themselves and take care of all the administrative work. Now everything runs smoothly thanks to MKB, the Department for Internal Services and Fosie District which has made this all possible.

When we meet Safija with the children she laughingly arranges "a Beckham hair-do" on one of the rabbits. Her tone, both to rabbits and children, is loving and firm, just like her involvement in the area. Safija is very pleased with how the history of the area has been preserved. A change she is hoping for is a multisport arena in the park in 2009. She is also lobbying to get a table tennis table in concrete and a much needed amphitheatre.

Safija Imsirovic with the children and the rabbits from the "Rabbit hotel".





Tobias Emilsson from SLU at the Augustenborgs Botaniska Roof Garden.

Many advantages with green roofs

The world's first botanical roof garden was opened in Augustenborg in 2001. It is an exciting experience to walk around on the roof and admire the greenery. The garden is a demonstration and research facility covering more than 9 000 m². The aim of the project is to promote the use of lightweight vegetation layers on roofs in Scandinavia.

When our cities grow, green areas disappear and biodiversity is compromised. To create green surfaces on existing and new roofs is a way to reclaim nature and at the same time achieve other benefits.

A green roof is created by sowing or planting directly on a layer of soil, or by placing prefabricated green mats on the roofs. The thickness for moss- and sedum roofs varies from 2-5 cm, and for grass- and herb roofs from 7-15 cm.

Tobias Emilsson is a researcher at SLU, Swedish University of Agricultural Sciences, and in 2006 he took a doctorate on thin green roofs.

– I have examined how on-site construction of roofs works, since it is much cheaper than building with prefab-mats. I have come to the

conclusion that it takes around three years before the roofs built on site are as green as the prefab roofs. I have also done research on fertilisers and how they affect the quality of the stormwater.

In addition to the Roof Garden there are around 30 other green roofs in the area. The staff at the Roof Garden take care of all of them. In general they don't need any maintenance, but fertilisers, preferably long lasting artificial fertilisers if more flowers are desired, can be used. Experiments are being carried out in Augustenborg with more environmentally friendly fertilisers. 50 percent of the rainwater is taken care of by the thin green roofs and this means a major load off the stormwater system in Augustenborg.

– What is done here is very important and most of the results have been published in scientific magazines. Augustenborg's Botanical Roof Garden is one of the most important places in the world for research about green roofs, and is an important venue for marketing too, says Tobias during a stroll on the roof where grassy hills, blooming lavender and a great variety of colourful plants catch our attention.

– It is now a more mature technology and the cost for building green roofs is becoming lower and lower. There is high pressure on the city planners to create more compact cities with maintained quality of life, and the green factor is very important. We can make roofs and walls green. I hope that the future holds more designed green roofs that are created for optimal biodiversity where also people can have a good quality of life.



Augustenborg's Botanical Roof Garden has been made possible with the support from the Department for Internal Services in Malmö, MKB, the Swedish Department of the Environment and EU:s Life fund. Guided tours for the public and for specialists from construction companies and other professionals are offered and the garden hosts a large number of international groups every year. The roof garden is also the starting point for the Water Safari, where pre-school children can follow the water through the area. At the visitor's centre there are exhibitions about ecologically sustainable urban development.

There are many advantages with green roofs:

- They take the pressure off the stormwater system as the plants and substrate absorb the rain water.
- They provide a better micro-climate.
- They protect the underlying roof material.
- They enhance biodiversity.
- They are beautiful to look at.
- They act as noise reduction.
- They can minimise building heat in the summer.

One of many wonderful views of the green roofs.





Morten Ovesen (left) and Curt Hallberg from Watreco AB have been very much involved in the development of the open stormwater system in Augustenborg.

The many benefits of an open stormwater system

Their ingenuity has saved Augustenborg from floods and has given the area a unique beauty with ponds and water channels. Morten Ovesen and Curt Hallberg have also contributed to putting Augustenborg on the international environmental map and their innovations are on their way out on the global market. Everything started at the introduction meeting for the start of Ekostaden in 1999, when Morten as a resident with specialist water knowledge offered his services. Their ingenuity, combined with the experience of Peter Stahre at the Water and Sewage Department, set the stage for a radical new approach to urban flooding.

Six months after the meeting, Morten was contacted by the project leaders and then together with his colleague Curt started working to solve the area's stormwater problems. They based their approach on how Mother Nature solves this problem and have continued their work in this spirit. A research project started, based on the Austrian Schauburger's technique with coherent water rotation which provides aeration and cleans the water.

The sewers were under-dimensioned for heavy rainfall and Morten and Curt were contracted to create a system which slows down the flow in order for the city sewer system to be able to take care of the water. In cooperation with MKB, the Water Department and landscape designers, an open storm water system with water canals and ponds was developed, which could take care of the large amounts of storm-water in the area.

– We calculated the optimal flow and found that drop-shaped obstacles placed in triangles in the canals provided the optimal effect, says Curt.

The area now has two kilometres of so called drop-channels, ten ponds and a number of open stormwater channels without different designs. The residents are spared repeated floods in basements and in garages with associated costs, and the biodiversity in the area has increased thanks to access to water.

– When we were finished building the ponds, we soon experienced problems with algae. We then developed a vortex-generator where a sub-pressure is created in the vortex which can suck in air through a device on the surface of the pond. When the air reaches the water, the oxygen makes the algae disappear immediately. We are now working on creating a pump which can be powered by solar or wind power. This technique can then be used in developing countries, for instance at fish hatcheries to decrease the water consumption, to save energy and to clean the water from various substances.

Morten is still enjoying living in the area, and his and Curt's company – now Watreco AB, still has some R & D and production in Augustenborg.

– The best thing about the area is the ever present water, says Morten. The fountains we installed in the ponds are very popular. And I have become very popular among the staff that used to have to wade into the ponds to remove the algae.



There are now more green areas in Augustenborg, which is appreciated by the residents.

Area facts/Augustenborg in numbers

Residents: 1997: 2 898 2007: 3 158	Percentage residents with higher education: 1997: 15 % 2007: 28 %
Residents with foreign background: 1997: 51 % 2007: 62 %	Registered unemployed: 1997: 14 % 2007: 6 %
Percentage employed: 1995: 35 % 2007: 49 %	Percentage residents over 65: 1997: 19 % 2007: 16 %
Type of housing: In Augustenborg there are 1 800 apartments of which 1 600 are rentals at MKB. Most multi-family houses are 3 stories high, some houses are 7 stories.	

» Facts

Background

The residential area Augustenborg was built in 1948-1952. The Ekostaden project started the 18th of March 1998 when the minister Anna Lindh from the Swedish government announced that Ekostaden Augustenborg was one of the Malmö projects which were granted funding from the government's Local Investment Programmes to make Augustenborg a more socially, economically and environmentally sustainable neighbourhood. One of the key aims was to enable residents to take a leading role in the ideas, design and implementation of the project. Ekostaden covered the residential area of Augustenborg as well as the school, industrial area and other local businesses.

Actors

Ekostaden has been developed together with the MKB housing company, the Fosie district and technical departments in Malmö. Approximately one fifth of the tenants in the area have participated in dialogue meetings in the project and some have become very active in the area's development.

What has been done?

Parks and traffic areas have been redesigned, the courtyards and the facades have been rebuilt and renewed after input from the residents. New apartments for senior citizens have been built with plenty of

activities for the residents. The green areas have increased and have been enriched, without compromising the special style of the fifties. Another goal has been to increase biodiversity, especially on the 30 green roofs in the area. A large solar power station produces energy used in the area. The local school now has sustainable solutions and a local car pool was started.

Funding of the project

24 million SEK in LIP-funds (the government's Local Investment Programmes), 6 million SEK in EU Life-funds. The total sum invested in the area is around 200 million SEK, around half of the sum is invested by MKB.

Study visits

Around 15 000 visitors have come to the area, including Augustenborg's Botanical Roof Garden, from all over the world since the start of the project. There is a constant interest, both local and international, to learn from the example of Augustenborg and global media interest is still strong.

Stormwater and green roofs:

The stormwater system has gone through a major change. Green roofs and open stormwater channels leading into ponds have stopped the flooding in the area and have created a beautiful environment and enriched biodiversity. The MKB houses have 2 100 m² green roofs, apart from the large facility at the Botanical Roof Garden covering 9 000 m².



» Facts »

There are a total of 6 km canals and water channels in Augustenborg. 90 % of the stormwater from roofs and hard surfaces is led into the open stormwater system in the housing area. The aim of the project was that 70 % of all stormwater should be taken care of for the whole of Augustenborg.

Food waste

Composting food waste started early on in the 13 recycling houses in the yards which then was the largest neighbourhood system in Sweden. More than a third of the waste was turned into fertile compost in less than eight weeks. In 2008 Augustenborg was chosen as a pilot area for separating food waste to make biogas. Within the pilot program all of the waste flows in the neighbourhood will be analysed and a new information campaign will take place. There is also a collection of hazardous waste, electronics and fluorescent tubes. The collection of electronic waste has generated 3 250 kg in six months.

Sport facilities

A multi-sport arena for soccer, basketball and other outdoor sports is being built in the park as a result of an initiative from the residents.

Solar energy

Ideas from residents are behind the large solar energy project in Augustenborg with 450 m² solar panels in the industrial area connected to the central heating system. Solar panels are incorporated on the new school building, and a number of demonstration photovoltaic systems are included in the industrial area. The Augustenborg solar project was the starting point for Solar City Malmö which operates all over Malmö. In spring 2009, a wind power plant was installed at the local school.

Senior citizen housing

MKB has created two senior citizen facilities in the area: Oktagonen with 34 apartments and Sommaren with 77. Next to them there is a theme garden with a boule court, raised flower beds and a greenhouse, all developed as a roof garden on top of a garage.

Café Sommaren

The café is run by residents and has activities all days of the week and an open café two days a week. Dinners, lectures and outings are arranged. The guests play canasta, practice qi gong, have sewing groups and lots of other activities.

Individual apartment meters

The apartments are prepared for individual measuring of hot water when the old plumbing is replaced. The possible energy saving effect is large since the residents then will be able to regulate their use of water completely and hence also control their environmental impact. A third of all heat goes to hot water. A pilot project for individual measuring has been carried out, but the conclusion was that presently there are greater gains from a central control system.

Car pool

Residents started a car pool in 2001, which now is a part of regional not-for profit Skånes car pool. The car, fuelled by ethanol or biogas, is parked close to the square and is used by members in the area and from other parts of Malmö.



Augustenborg is also a nice place to work for us at MKB.

Facts »

The Green Line

Two electric-powered trains built as prototypes during two years transported around 300 000 passengers to and from Augustenborg and surrounding neighbourhoods. The line was closed down when Skåne-trafiken could not make it profitable and the trains had some technical problems. In spite of this there was interest from other parties to buy a similar train system, but unfortunately there was no preparation in the company formed for the pilot project to launch a larger production.

Traffic

A local survey indicated a difficult traffic situation in the area. The survey, carried out by the residents themselves, eventually resulted in an overview of the traffic situation. Restructuring of Augustenborgsgatan has diminished through traffic substantially and a number of measures have been taken to increase safety by the school. A new exit to the industrial area is the next step, so that heavy vehicles no longer will be passing the school entrance.

Results

Augustenborg has become an attractive, multicultural neighbourhood in which the turnover of tenancies has decreased by almost 50 % and the environmental impact has decreased by 20 %.

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Some positive effects in Augustenborg

- Biodiversity in the area has increased by 50 %. The green roofs have attracted birds and insects, and the open storm water system provides better environment for the local plant- and wildlife.
- Participation in elections increased dramatically during the project. From 54 % 1998 to 79 % in 2002.
- As a direct result from the project three new local companies have started: Watreco, the Green Roof Institute and the car pool.
- There have not been any flooding in the area since the open stormwater system was installed. Augustenborg even managed well when large parts of Malmö were flooded in the summer of 2007.
- The heat and hot water consumption has decreased by 25 %.

Production

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On behalf of The City of Malmö and MKB



Ekostaden Augustenborg

The Augustenborg neighbourhood, built at the end of the 1940s, has gone through a remarkable change. The Ekostaden project started in 1998 when it was granted funding from the government's Local Investment Programme to make Augustenborg a more socially, economically and environmentally sustainable neighbourhood. One of the main goals was to involve the residents as much as possible. Ekostaden has been developed together with the MKB housing company, Fosie district and technical departments in the City of Malmö.

There is a constant interest, both local and international, to learn from the Augustenborg experience in the development of new sustainable regeneration programmes.

