

NHMF study tour of Denmark Oct 2015

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NHMF Study Tours

The purpose of the trip was to exchange information, and practical experience relating to the maintenance of social housing stock in Copenhagen in Denmark, and across the bridge in Malmö, Sweden. The emphasis was on resident involvement in estate management.

The tour included:

- An introduction to Danish social housing at their National Federation (BL)

- Visiting a regeneration project by Glostrup Housing Association

- Visit to an urban regeneration project in Albertslund

- Coach via the spectacular 8km Öresund bridge to see the Eco-City Augustenborg in Malmo, Sweden

- A tour of Freetown Christiania, a self-proclaimed autonomous neighbourhood in the centre of Copenhagen.

This report is based on my recollections from the presentations some of which I recorded, and makes use of photographs posted on the NHMF website by delegates. It also references the websites of some of the organisations visited.

The interpretations represented and any misunderstandings or omissions are my own.



Presentation at BL

Danish social housing and the National Building Fund

The tour began with an explanation of the way Danish social housing is financed and run at their National Federation: Danmarks Almene Boliger commonly referred to as 'BL'. This was given by Gert Nielsen who was director of BL for many years and is now retired.

Their website is a good starting point for understanding Danish social housing (<https://bl.dk/in-english/>). See also the Denmark chapter in 'Housing Policies in Europe' available in paperback (£20) or as a free download from <http://www.m3h.co.uk/publications>.

Meanwhile here is a summary of the crucial differences between the way social housing is run in Denmark and the UK, loosely based on Gert's talk.

Role of social housing

"Social housing organisations have the aim of providing appropriate dwellings for all in need thereof at a reasonable rent and to give tenants the right to influence their own living conditions".



Supper at Rocco on our first night

It addresses a much broader range of housing need than social housing in the UK. They seek to create balanced communities that are not overburdened with social problems.

Social housing fits somewhere between private renting and home-ownership and is seen as a highly desirable long term housing option for those that cannot afford or choose not to buy their own home.

There is more emphasis on the quality of the housing provided and less on low-rents which are typically about 80% to 90% of equivalent private sector rents.

About 20% of the Danish stock is social housing, and 53% owner-occupied. This is not very different from the UK, but Denmark is just about the only country in Western Europe where social housing is increasing, while in the UK it is diminishing under the Right to Buy. Compared with the UK there is relatively little shortage of housing, and less of a contrast between high demand and low demand areas.

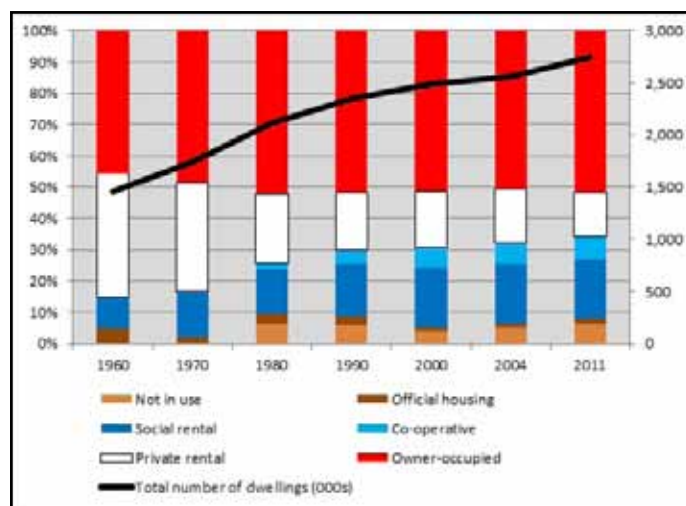
Tenant Democracy

Every housing estate elects an Estate Board that approves all management decisions, including levels of rent and delivery of services, and a rolling ten year budget for repairs, maintenance and improvements. Each estate is economically independent, and has to balance its books.

Management is usually provided through a housing association which might own quite a few estates, usually within a locality, but has to manage each of them as a separate entity. The Estate Boards elect an assembly of representatives that then elects the board of the housing association. This board has a majority of tenants on it, but usually also has representatives from the municipality.

Denmark is divided into eleven districts each of which has a district board elected by its associations. Each district elects an assembly of representatives, a chairman and a vice-chairman, who thereby become members of the BL board.

BL has a central role in the funding of social housing. In effect it combines the roles of the UK's Homes and Communities Agency (HCA) and of the National Housing Federation



Changes in Danish housing tenure since the sixties from *'Housing Policies in Europe'*

(NHF). It negotiates grant funding and the regulation of the sector with the state government and the municipalities. In this way the social housing sector largely regulates and manages itself and is less dependent on the government who has much less of a say in how it operates.

Financing

Each estate is financed with a mortgage loan guaranteed by the municipality and covering 88% of the procurement cost which is repaid over thirty years at 2.8%. Another 10% comes as a grant from the municipality, and 2% is contributed by the tenants, each of whom pays this as a deposit that they receive back when they leave.

The initial rent on a new estate is set to cover the 'standardised' cost of the mortgage plus the operational running costs. Thereafter it rises with inflation. There is no centralised rent determination, and rents can vary considerably between one estate and another. There are limits set to the total procurement cost per unit and per square metre but otherwise this is essentially a cost rent.

The actual loan cost varies as interest rates fluctuate and may be more than 2.8%. As the rent rises, and particularly once the initial mortgage loan has been repaid by an estate, any difference between the 2.8% of original procurement costs and the actual financing costs is pooled into a National Building Fund, with some also going to a Disposition Fund held by each association. In this way the well-established estates help to fund the newer ones, and there is a limited amount of cross-subsidy between them.

The primary purpose of the National Building Fund is to help meet major repair and renovation costs that cannot be met at acceptable rent levels. The need for this was originally identified on estates built in the sixties and seventies using modern methods of construction that required major remedial works to deal with flaws in construction.

The National Building Fund is managed by BL. Associations



Gert Nielsen

apply to BL for funding, and must produce extensive independent reports to justify it. These are evaluated by professional staff at BL who are answerable to the BL Board. As the director of BL for many years Gert Nielsen had the ultimate say in how much any particular estate could receive to pay for renovations.

BL also sets limits to the subsidy covering any shortfall between the standard 2.8% of procurement costs and actual financing costs that a new development can receive. In this way BL performs many of the functions provided in the UK by the HCA. The big difference is that its board is elected by the member associations whose own boards are elected by their tenants. So cross-subsidy between estates via the National Building Fund is seen as independent of government, and not a claw-back of grant.

Allocations

Residents in the Social Housing Sector in Denmark are characterized by lower income and higher unemployment rates than the general population, as well as a higher number of single persons or single parents. This is partly because vulnerable groups have a general priority, but also because legal restrictions on procurement costs and the size of the dwellings make it less attractive to those that can afford home-ownership.

The inclusive nature of their model ensures a natural social mix that helps limit segregation. It also allows housing organizations and municipalities to act more flexibly in order to create a social mix when allocating homes. 82% houses families, 12% the elderly and 6% to young people. Gert Nielsen was well paid as director of BL but still lives as a tenant on a social housing estate.

Existing social housing tenants get priority in allocations, ensuring social mobility, and enabling them to move to more suitable properties as their family grows, or to be nearer to work when they get a new job. The municipality gets 25% of allocations, and more on urban renewal projects so as to rehouse those that are displaced. Families with children take priority for family-sized dwellings, and the elderly or disabled for homes specially adapted to their needs. Otherwise allocations are on the basis of time spent on a waiting list. There are no income restrictions.

Nobody can be evicted except where they break the terms of their tenancy, usually by failing to pay the rent. Each tenant must pay 2% of the original procurement cost as a deposit. They get this back (less any cost to bring the property back to the condition in which it was let) when they leave. Loans are available to those that could not otherwise afford the deposit, the cost of which is allowed for by the housing benefit regime. In practice anyone falling behind with their rent would be evicted by the courts before their rent arrears exceeded the deposit, avoiding any losses from bad debts. This in turn simplifies management.

Tenants have a real sense of collective ownership of their

estates. They can determine the level of grounds maintenance, and prioritise investment in repairs and improvements. They can collectively choose to pay a higher level of rent for a higher level of service, but have to abide by the consensus on their estate.

Glostrup Boligselskab (Glostrup Housing Association)

Claus Bech-Hansen and Lisa Christiansen from Glostrup Boligselskab then explained how the major renovation of their 1200 unit estate was funded. The Stadium Quarter estate is situated about 16 km to the west of Copenhagen, and well connected by public transport at a commuting cost of £3 to £4 a day.

The estate had been originally constructed in the fifties on the outskirts of Copenhagen to house people working in a new hospital which is still on a neighbouring site. It was a popular place to live. Many of the residents had been there for most of their lives, and their ages are above average. .

Obtaining money from the National Building Fund (NBF) was never easy, despite any impression given by the previous speaker. It required huge amounts of documentation spanning over a metre of bookshelf, and a long and rigorous process of checking and negotiation that took five years.

NBF initially demanded that 440 flats had full disabled access but eventually accepted that 332 was all that was economically achievable. Even that would reduce the number of flats from 1,234 to 1,115 to accommodate the lifts.

The cost of the works was assessed at £94 million which works out at about £78,000 per unit. There was limited scope for raising rents which could only go from an average of £64 per m² a year to £75. Interest at 7% on the additional borrowing would cost £6.6 million a year, while the potential increase in rent would cover just £0.97 million pa.

Claus explained how they bridged this gap in funding, most



Mads Jespersen, Claus Bech-Hansen & Lisa Christiansen



Bridging the gap in funding	Annual saving £ million
£70 m of subsidised loan (subsidy from NBF)	2.16
Capital input by Glostrup HA (60%) & NBF (40%) reducing the loan giving an interest saving	0.27
Cancel annual contribution to NBF	0.39
Rent subsidies from NBF	1.95
Annual grant from Glostrup HA's disposition fund	0.30
Reduction in future maintenance costs pa	0.34
Total savings	5.41

of which came from the National Building Fund. The rest came from a variety of sources including the municipality, and Glostrup HA's own disposition fund.

Lisa then described the renovations which are in six stages. In most cases the tenants have to be decanted but can choose another flat or to return to their old flat.

The layout of some 372 flats is being changed to incorporate lifts for wheelchair access, with extended balconies and small private gardens. Some small flats are being merged with neighbouring ones to create larger units for families. 325 Studio flats are being merged reducing the number to 171, and another 156 units are being extended. 639 units are being modernised without significant changes to their layout.

The modernised flats all have renovated bathrooms, extended balconies, access to small private gardens, and new ventilation systems incorporating heat exchange. Roofs, rainwater systems and entrances are being renewed.

Some lintels will be replaced, and most of the masonry repointed. Cavity wall insulation is being upgraded.

New UPVC windows were installed only twenty years ago but are being replaced with low-maintenance 'alu-wood' windows, partly because they were unable to obtain spares for the old ones.

Tenants were involved from the start of the project. The big decisions were approved in referendums following large meetings. The early meetings explained what work was required and agreed the decision making processes that would be followed. They approved the rent levels that would be required and the proposals for re-housing tenants.

Later meetings examined the proposed new layouts and the financing, and mandated a project group to oversee the project. This was made up of 3 tenants, and 2 representatives from the tenant board for the estate, a technical adviser, project manager and member of the maintenance department.

Theme meetings examined the layout and materials to be used in bathrooms and kitchens, the choice of windows and doors and plans for the gardens. These ideas were then examined and prioritised by the project group.

Demonstration flats were upgraded so that the choices could be examined and understood in more detail before the main works commenced. With hundreds of similar properties this becomes more economic. As well as refining the final design these ensured the tenants made fully informed decisions and shared responsibility for the outcomes.

After lunch we travelled by coach to see the renovation in progress.



Coach to Glostrup



Walking around the estate



Typical bathrooms before and after renovation



Old style kitchen



A modernised kitchen



Well kept grounds and the recycling store



Inside the recycling store

We visited renovated units and those that had been emptied ready for renovation, so we had a bit of before and after.

The standard of renovation was high by UK standards and the apartments were spacious. You get a lot for £78,000 a unit.

We were impressed by the high standards of grounds maintenance: given a choice the tenants preferred to pay a little more for a very well kept estate.

Every estate we visited in Denmark had recycling sheds - tenants could access them with a key and sort their rubbish. They took furniture and fridges as well as the usual metal, glass, paper, batteries and electrical goods.

We were a little surprised that more was not being done to improve energy efficiency by applying external insulation. The Danish practice is to bring properties up to no higher than current building regulations require for new properties. They were understandably reluctant to cover the natural brick.



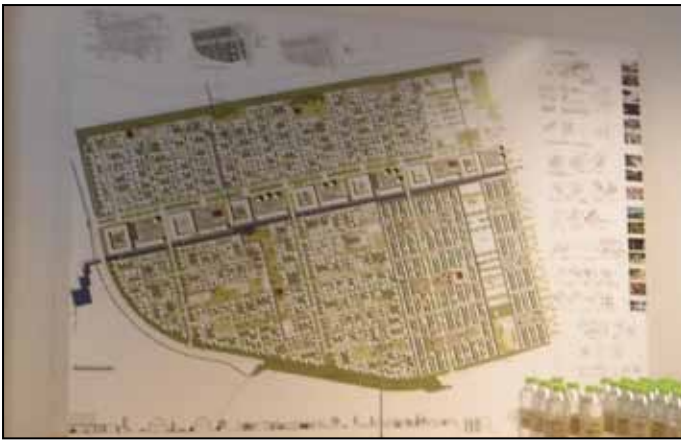
Repointing, and window & lintel replacements



Spacious living rooms and small bedrooms



Temporary building showing new interiors



Map of the 2,200 units



The row houses after demolition as rebuilding began

Albertslund Syd

Our second visit was to a poorer area in the suburb of Albertslund on the western outskirts of Copenhagen. The people here have relatively low incomes, less education, and higher levels of unemployment.

A regeneration project costing DK1.5 billion (£150 million) is being carried out there by several housing organizations together with the municipality, working to a masterplan that is expected to last 10 years. Some of the estates are already refurbished. The work is managed through a joint management company they set up between them: Bo-Vest. The administrative director of this company, Ulrik Brock Hoffmeyer, was one of our guides on the tour.

There are three distinct sections built about forty years ago. The first consists of 650 flats in three storey blocks which we did not visit. The renovation of these was completed in 2010. The second has 550 almost identical row houses, three bed units of 98 m² (measured to the outside of external walls). Work on them had only just been completed in September. We also saw the 1,000 courtyard houses where work is beginning.

The row houses cost DK1,400 million (£140,000) per house to renovate of which about 35% was on-costs.

Only the back walls and dividing walls were left standing, so it was practically a new build.

The properties are organised into six autonomous social housing estates each with their own Tenants Board, managed by two separate housing associations. These joined together to draw up a masterplan, involving the municipality and also the local heating company that provides district wide heating to all the properties.

There was little scope to fund the renovations through higher rents, and it was largely funded through the National Building Fund.

Tenants were involved from the start. The woman in the completed row house that we visited remembered the earliest discussions of a plan almost twenty years ago. She has lived and worked there for almost fifty years since she was twenty, and ran the nursery on the estate. During that time she told us that she has had mothers and fathers and their children and their grandchildren going through the nursery.

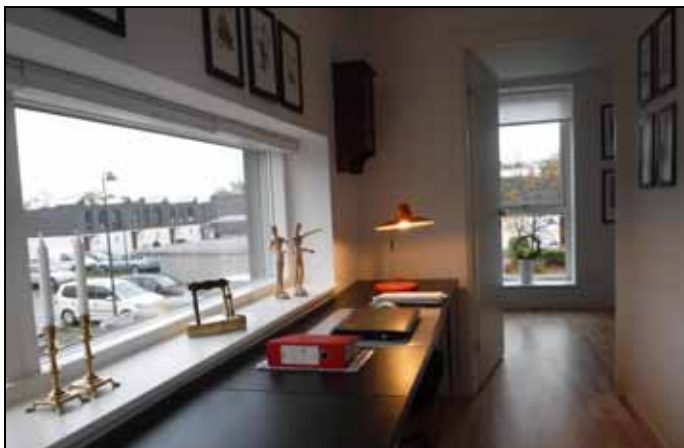
There were large meetings of the tenants on each of the six estates, and lots of smaller meetings and focus groups examining every aspect at all stages, including the implications for rents and how it would



Visiting one of the row houses



The tenant in her renovated living room



Upstairs landing used as a study with a view of the next row



The largest of three bedrooms

be financed. Everything had to be approved by the tenants, and then by the board of their housing association, then the municipality who helped to fund the project and guarantees the loans, and finally the National Building Fund.

Each tenant could choose how much they wished to be involved in the decision making. Some were also elected to the board of their housing association, which was entirely made up of tenants with no lawyers or accountants or other housing professionals: just tenants.

They renovated six row houses to different energy standards to investigate the costs and options before the main works began. These ranged from current building standards to better than zero carbon. The director in charge of the renovation reckoned fuel bills had been cut by half to around £70 a month. The tenant of the house we visited thought they might have fallen by 30%. These costs seemed high to us, but they thought energy costs were probably much higher in Denmark and included 25% VAT, so this seemed good to them.

Tenants were decanted in a phased renovation into properties deliberately left empty by retaining voids or using them on short-term lettings for four years

leading up to the start of the works.

We asked whether under-occupation was considered a problem, since the newly renovated three-bed house we had visited was occupied by just one person. They said this was accepted, and helped improve the social mix on the estate.

The rent was about £700 a month. Average incomes might be about £27,000 a year for households in this area, which is low by Danish standards. So on average tenants were paying a little over 30% of their income on rent. That was before tax, which in Denmark ranged from 40% to 60% of gross income. Those on low incomes get part of their rent paid by the government, which can contribute up to 85% of it.

The housing was at quite a low density but they had not considered increasing it as a way of helping to finance the scheme. There is little shortage of housing in Denmark and the main concern was quality not quantity.

There had been no windows overlooking the gardens in the original row houses, and the National Building Fund insisted they must have them. The tenants felt this invaded their privacy. They could individually choose between high level windows, floor to ceiling, or something in between, but had to have them.



Windows facing the garden chosen by each tenant



The bleak exteriors to the courtyard houses



Options for cladding the exteriors of the courtyard houses with windows and wooden slats

We then visited one of the courtyard properties that had been renovated as a demonstration for the tenant consultation aimed at deciding the final design. With 1,500 almost identical properties involved it is well worth investing a fair bit into getting this right. The work on this phase had not yet been tendered, but was expected to cost about £30,000 per house, almost entirely spent on internal improvements.

To us the lack of windows made the long alleyways between the houses seem very bleak, like an alien space. They had tried inserting windows and adding porches and wooden cladding outside some of the six demonstration units, but the tenants did not see this as a priority given restraints on funding.

We were impressed on all the estates we visited by the extent to which tenants were involved right down to the smallest detail in design. They invested a great deal in demonstration units for this purpose, so that tenants 'owned' the choices that were made and were fully involved in financial decisions and the compromises necessary.

This style of house was popular because the courtyards provided very private space and nobody could see in through their windows.

The bedrooms were small, with just enough space for a double bed. There was room for clothes cupboards in the corridor. The rest of the living space was fully open plan, with the kitchen, bathroom and bedrooms in one wing of the house and a large living room and either a bedroom or study (connected by a wide sliding door) in the other.



External space between the houses with bike sheds



Courtyards provide a very private space



The living space inside was open plan and spacious



Öresund bridge from Copenhagen to Malmö in Sweden

Malmö

We set out early on Friday morning by coach across the 8 km Öresund bridge to Malmö, Sweden. Our guide was Louise Lundberg of Green Health, helped by local resident Marie. We visited the Hilda housing cooperative and Bennets Bazaar in Rosengård, and Eco-City Augustenborg.

Sustainable Rosengård

Rosengård was built in the sixties as part of the 'million houses project' aimed at eradicating housing shortages in Sweden within ten years. The area had previously been good farmland. The housing was modern by the standards of the time, with proper bathrooms and heating systems.

The focus was on quantity and cost, using industrial construction methods and without always ensuring the properties were suited to local needs. The buildings suffered from condensation and high heating costs, as well as containing toxic materials.

Few community facilities were provided and the result was a vast windswept estate where few would choose to live even though it was only a short distance from the centre of Malmö. By the seventies it had become marginalised. Anyone who could afford better moved out, and lots of

apartments were left empty, which made it all less economic for the housing company. This was not helped by the city encouraging some of the poorest people into the area to take advantage of the low rents and reduce their welfare costs.

Rosengård has somewhere between 24,000 and 27,000 people: nobody can be quite sure because it includes quite a large number of illegal immigrants. By 2012 86% were thought to have an 'immigrant background', with many from Iraq and the Balkans and other troubled places.

As a result Rosengård carried more than its fair share of low-income households. It covers a huge area on both sides of the three-lane highway on which we arrived. It received a very bad press with lots of stories of crime and tragedy, so that many residents of the city would be afraid to venture into it. That is not the way many of the residents see it. Most of them like the area and choose to live there.

Hilda is a housing cooperative in which the properties are part-owned and part-rented by people who buy the right to live in an apartment which they can sell when they leave, but on which they also pay a rent. It consists of 767 apartments in 16 blocks, and 2,400 residents.

In Sweden tenants do not benefit from the kind of tenant democracy found in Denmark and have no say in how their rents are spent. But in this part-rented housing the residents do. Together they decide how to spend the maintenance money.

In 2005 they were faced with a huge investment to deal with water damage from leaking pipes and rain penetrating their facades. They decided that while they were at it they would take a more fundamental look at how to make the properties more sustainable, which attracted municipal support and additional funding.

The whole project cost SEK38 million (£2.9 million) of which SEK6.1 million came from the Swedish government and SEK4.9 million from the EU. The remaining £2,700 per property was funded by the cooperative.

The most cost-effective measure to reduce energy consumption was replacing the ventilation with a more tightly



Introduction to Hilda by Louise and Marie



Three-lane highway dividing Rosengård



Residents have been encouraged to create vegetable gardens



Vast posters of residents who produced a cookbook

controlled system that extracts heat from the air going out and transfers it to the fresh air coming with an added boost from the district heating system. This saved one-third of the energy costs, which enabled the co-op to recover its share of the renovation costs without raising the cost of living in the apartments. They plan to add solar hot water on the taller blocks and solar panels for electricity on the lower ones in the next phase.

Bathrooms were renovated with new plumbing. Water meters measure the usage in each flat. Provision was made to collect rainwater although rain is so plentiful around here that this does not save money. Fire safety was improved with estate-wide fire alarm systems that are no longer the responsibility of individual households. The facades were given a 'Gore Tex' type breathable coating to make them more water resistant. At the same time harmful materials were removed, particularly from the entrances.

Marie explained how some of the money made available to promote environmental awareness was used to encourage local residents and children from the schools to make gardens and grow vegetables. The children in particular loved it, and neighbours inspired each other by working together. Even though this had been farmland fifty years ago, the ground was rocky and full of rubble. So the housing company brought in diggers to replace it with topsoil

to create gardens. In other places they provided boxes filled with topsoil in which plants and vegetables could be grown, so that more or less anyone wanting to grow things should be able to participate. This has changed the whole environment on the estate making it a much more attractive place to live.

Immigrants from all over the world who were living in the area brought knowledge of herbs and spices and grew them in the gardens. The women wrote a cookbook sharing recipes and their knowledge of spices. They became quite famous, appearing on TV. Large pictures of them and their food were displayed on buildings in the area.

At the same time volunteers went around all the homes on the estate trying to encourage residents to get involved in sustainability projects. Simple things like recycling their rubbish, and controlling their use of heating and hot water, or the settings on their fridges and freezers. Some of these things also saved them money. Face to face contact was much more effective than leaflets or notices.

At the end of our tour we visited Bennet's Bazaar in Rosengård where they had added a row of shops in front of some apartments so the shopkeepers could live and work there. It also had an amphitheatre that doubled as a flood water overflow tank.

Eco-city Augustenborg

After a coffee break in the canteen we visited the botanical roofs above the direct works depot before going for a tour of the housing.

In 1996 they decided to create an eco-city (Ekostaden) from the 1950s housing estate and 1960s industrial area of Augustenborg. It was intended to be a role model for Malmö, but has become a model for the whole world.

In 2010 Ekostaden Augustenborg won a World Habitat Award from the United Nations for its urban renewal and environmental improvements. This has been important in changing the image of Augustenborg. The fact that it attracts international tours from many organisations like ours contributes to a growing good feeling about the area.



New local shops added onto existing housing



Green roofs on industrial buildings slow rainwater flow



Vegetable garden on the roof of the maintenance depot

There are other large scale sustainable developments around Malmö, such as at Western Harbour: an old industrial area completely rebuilt with modern sustainable apartments and houses. It is much easier to achieve high levels of sustainability doing this from scratch than renovating older existing properties as has happened here. But raising the energy efficiency of existing buildings by 20% has far more potential impact than constructing a few new buildings achieving closer to 100%.

The initiative came from the municipality and MKB which is owned by the city of Malmö, and provides about one third of its rental housing. This was a top-down initiative, unlike Hilda which was started by its residents.

The project leader from the Environmental Department of Malmö, Trevor Graham who was British, insisted that the opinions of the people living in Augustenborg should really count. Before anything had been decided they called a public meeting, attended by 400 local people out of a population of 3,000. These were predominantly white Swedish women over fifty, who were not exactly representative. They set out to break down the ethnic, and cultural barriers, involving people speaking in many different languages working together to make the area more sustainable.

The project focussed on an area of about 1,800 properties of which 1,600 were rented from MKB.. It was funded by

the MKB Housing Company (around £9.7 million), the Malmö local government (around £6.8 million), a local investment program initiative (around £2.3 million) and EU funding (around £600,000).

Augustenborg has become an attractive multicultural neighbourhood in which the turnover of tenancies has decreased by almost 20% and the environmental impact has decreased to a similar degree. It is not perfect, but people now choose to live in it, although predominantly it is the same people living there now as before the project began.

It now houses people with a much wider range of circumstances from total dependence on social welfare to fairly well paid. Unemployment has fallen from 30% to 6%.

This area does not suffer from a shortage of water. In fact it rains a very great deal. Previously they had problems with flooding. Where the ground is concreted over the rainwater runs away very fast overflowing the sewerage systems.

So they decided to separate rainwater from sewerage, and introduced a whole range of measures learning from nature to slow it down so in a storm it does not all arrive into the main drains at the same time. This included 9000 m² of green roofs, and 6 km of open storm water channels and ponds, handling 90% of the rainwater.

One of the residents at the original public meeting was an unemployed water engineer who had been experimenting with the movement of water. He had worked out how to stop leaves clogging up slow moving water channels, increasing turbulence with fist-sized knobbles along the bottom. He has since set up a company employing seven people advising on innovations in water movement.

An open space in front of one of the blocks was used as a flood catchment area, cleverly designed with a pond at one end that remains full of water while allowing the whole area to flood during a storm. Without the deeper permanent pond the whole area would be wet and smelly. An overflow on the pond limits the depth of the flood, carrying the water away in a deeper channel.

The pond only has a small railing. When they consulted the



Solar panels and hot water



Knobbles cause turbulence which stops clogging by leaves



Floodable area with pond and overflow

residents the parents suggested that little kids up to three or four would never be left out of sight of an adult and above that age no kid would drown in a shallow pond. So there was no need to put a fence around it. This is another example of how Malmö have dared to do things differently.

Instead of everyone having their own washing machines the management company MKB put a laundry into the base of one of the blocks. This was attractive and well equipped, and created a sociable space. All the waste water from the laundry is cleaned in a natural system in the middle of the floodable area and then goes into the rainwater channels.

The overflow from the pond leads to a much larger park where the ground level was lowered by about 30 cm so as to contain more flood water. It works on the same principle, with any resulting overflow entering the main Malmö drainage systems, but arriving much later and after the peak flow of water from elsewhere.

A new school for eighty primary school children was built on the estate with all the green sustainability features you can imagine. The building is a factory-made modular construction which can be removed and relocated to another school in the future if pupil numbers in Augustenborg decrease. It has a green roof, solar panels a ground source heat pump with intelligent control of the lighting, heating and ventilation using sensors and timers to adjust to the usage patterns of the building. It was built with innovative composting

toilets. They flush like a normal toilet but the waste goes into a composting tank in the basement. This is so effective that if you open the lid of the tank it does not smell.

There are 15 recycling sheds dotted around the estate with containers for paper, cardboard, coloured glass, uncoloured glass, metal, plastic, batteries and various types of hazardous waste, where the residents can sort their rubbish so it can be recycled or reused. Pictures identify what things should go into each bin. Food waste is composted and also used to produce biogas. They supplied special food waste containers for holding compostable bags and volunteers went around the flats with a screwdriver to help people fit them.

The early metal cladding enclosing external insulation was of very poor quality. There are legal restrictions on cladding brickwork which is seen as the traditional finish. Consequently some of the building that originally had the cheaper render finish have been upgraded to higher energy standards (saving 35% of energy) than the supposedly better quality brick buildings which are as poorly insulated as ever. They are hope for greater flexibility in future, or perhaps new technological solutions.

There are many studies of this project published on-line. For example search for '[Ekostaden Augustenborg](#)' for a publication by MKB and the city of Malmö.



Solar panels on flats overlooking the public park



Rainwater floodplain and public park



Christiania

We were introduced to Christiania by Ole Lykke who edits the Christiania News and looks after the archives. He has lived there for 35 years or more. Allan works with the maintenance team and was able to explain how maintenance and renovation is handled. He has lived there for 25 years. This description is based on what they told us.

Freetown Christiania covers about 22 hectares and 170 buildings, some of which date back to the 19th century and have preservation orders. It was built as an army base to defend Copenhagen from Swedish attack. It consisted of barrack blocks and officers quarters, munitions factories, and stabling for horses, and was built on the old ramparts to the city protected by a moat.

The army finally left in 1971 and over the following months people began to move in to occupy the properties, declaring it an 'autonomous freetown'. It now houses 650 adults and more than 200 children.

They negotiated a temporary agreement with the government in 1972, which was extended for three years in 1973. But within a year the incoming Conservative government drew up plans to demolish half the buildings in the first of many attempts to close Christiania. They were opposed by large demonstrations of people from all over Denmark.

In 1977 the freetown won a court case against the Defence Ministry for breaking the 1973 Agreement. In giving his verdict the judge suggested it was a political rather than a legal issue which should be resolved through negotiation. Christiania has often been debated in Parliament.



Lunch at Spiseløppen



Allan and Ole introducing the tour

A 'Christiania Law' was passed in 1989 in an attempt to regulate the situation. This was never successfully implemented and has been repealed and modified many times since. It transferred responsibility for the area from the municipality of Copenhagen to the state. Meanwhile practicalities are regularly negotiated between a 'contact group' representing the freetown and various municipal and state bodies.

We wondered whether anything like that would have been possible in the UK. Would the British government have yielded to minority public opinion and found ways to compromise? Would a freetown in Britain have organised themselves as effectively as they did in Christiania? Over the years they have made many agreements postponing evictions, and agreeing how much they must pay for electricity and water.

The government tried to 'normalise' Christiania and wants people to own the properties, while those living there are determined to run it in their own more anarchic and anti-capitalist way. The municipality sees them as squatters who have stolen the area from them, and in some ways they are right. It wants to take back control of everything. The contact group has become very adept at negotiating and resolving the issues in their own way. Sometimes it is the city that learns from the freetown, and both sides make compromises.

The authorities now want them to remove the buildings from around the ramparts and to return the old barrack buildings to their historic form, getting rid of the roof windows that allow people to live on the top floors. To the freetown that is unacceptable: they have to adapt the place to meet their needs. But at the same time they maintain these old properties in harmony with their original construction using real craft skills. If Christiania had not taken them over many of these buildings would have been knocked down and replaced with something more modern, as has happened over the last forty years in other areas of Copenhagen that previously housed the military.

The buildings are now owned by a Christiania Foundation, within which the occupants are responsible for their own



A new slate roof over Spiseløppen

homes on which they pay a rent. In some ways it is like a very large housing cooperative and in others more like a commune.

Elsewhere a tenant would expect their landlord to fix any problems, but here they say 'you fix it and we will help you'. In this way everyone has to take responsibility for the place where they live and to share responsibility for everything else. They generally receive about two-thirds of the cost of improvements from the Foundation which also lends them money at no interest to carry out their own repairs and renovations, such as improving the energy efficiency of their homes. The Building Group also carries out repairs to the fabric of the original buildings. We saw new slate and tile roofs done to the highest of standards, and a great deal of building work going on.

Most of the site is now effectively owned by the Christiania Foundation, although the more rural parts remain the property of the state and are occupied on a temporary basis. The old ramparts are regarded as a national monument.

The freetown is governed democratically and run on a self-management basis and within a shared economy. This enables them to achieve things relatively cheaply without depending on large loans from banks.



A diagrammatic layout of Christiania



The more rural area with a bridge across the moat



A building used for meetings

It is divided into 14 local areas each of which makes decisions about their own area, including priorities for renovation, approving new projects and resolving issues between neighbours. Each has a cashier who collects contributions from the residents and businesses to the Christiania Fund, which is used to pay for electricity and water bills, repairs and improvements to the buildings and infrastructure, and all the usual services provided by any other town such as street cleaning and rubbish disposal.

All residents pay a contribution to the Foundation based on an amount per person and an amount per square metre. Each business pays an agreed level of rent to the Christiania Fund, reflecting their scale.

We visited the depot where they have their own heavy machinery for carrying out this work. One of the largest old buildings provides recycled building materials, most of which come from undertaking demolition contracts all over Copenhagen. There was no sewerage, water or electricity supply outside the central area of Christiania until they extended it entirely by their own efforts.

There is a willingness to accept group decisions in Denmark that is found to varying degrees right through their society, and is fundamental to the way the freetown

is run. Important decisions affecting the town are made by consensus at Community Meetings open to anyone living or working there. There are many other groups managing everything the freetown needs, including a Financing Group made up of cashiers from the local areas and three central cashiers, answerable to Budget Community meetings. They make loans to help community initiatives and new ventures, and decide on all the budgets needed to run Christiania. Others include a Corporate Group dealing with businesses that operate within the town, a Traffic Group, and a Building Group. Most of these meet weekly. Anything they cannot resolve goes to the Community Meetings for final decision.

The first part of the town as you arrive through the main gate could be thought of as 'downtown'. It is buzzing with activity, with restaurants and bars and lots of shops and workshops. It is also where people from Copenhagen come to buy hashish, from 'Pusher Street'.



Downtown Christiania

There has always been tension between the drug dealers and other residents. Many years ago the Christianites evicted anyone selling or using hard drugs by the sheer force of numbers of the residents who were determined not to tolerate them. Users can return only once they have been clean for six months. They allow the sale of hashish although most would much prefer it did not happen in Christiania because of the disturbances it causes and the police raids. They would be happier if there were a variety of legal hash bars all around Copenhagen, as has happened in some other countries. But for now they see this as a burden Christiania has to carry alone.

Nobody in Christiania ever calls the police, and the police probably would not respond if they did. This makes everyone responsible for interfering when they see someone behaving badly. While we were there one of the 'guards' protecting the drug dealers got into an argument with Ole over taking us along Pusher Street, and they resolved it between them.



The main entrance to Christiania



Renovating woodstoves



Outside the smithy and woodstove workshops

In 1975 the head of the Copenhagen police declared his hatred of Christiania, and used it as a training ground with very heavy handed police raids to which Christianites sometimes responded by alarm whistles bringing large crowds onto the streets. This set up a long tradition of antagonism.

In the eighties the drugs market was dominated by biker gangs, rivals to the Hells Angels, who controlled it with violence and guns. The residents asked the police for help in getting them out but they refused, and had to be forced to take action. The police had arrested some of the members of a bike gang after a murder but refused to remove their bikes and belongings. About 300 residents demonstrated outside the workshop they used. The Christiania contact group said they could not hold the crowd back from destroying the gang's bikes and other property so the police had better come and remove it, which eventually they did, effectively evicting the gang from the free town.

No cars are permitted inside the town except for essential deliveries and services. Nobody is allowed to sell a property or charge anyone for moving in after they leave, even where they have built a completely new dwelling or carried out major renovations themselves.

Families prefer to live in the quieter areas, further from the centre. There are plenty of people eager to move in to any places that become vacant. The choice is made locally by the people living in that area, with the immediate neighbours having more of a say than the rest.

Whenever there is a vacancy it is advertised in the Christiania News. Anyone can take a look at the place at an open day, usually on a Sunday. After a couple of weeks each household that is interested puts their case before a meeting of the local residents, taking perhaps eight or ten minutes. This could go on all day. The choice is then made democratically by the residents, sometimes after long and careful consideration and a great deal of discussion. Anyone who feels discriminated against can always appeal to the Community Meeting where the residents' reasons would be subject to public scrutiny.

People often move within Christiania on the same basis. Each area is different, and handles all of these things in their own distinct way. Some are more open and others are more protective and private. They cannot house everyone



Wonderland for skateboarders in Christiania



Hand crafted house



The first zero carbon house in Denmark



View from the bridge across the moat

who comes along but there are places to suit all kinds of people – young people, older people, and families with children.

The old munitions factory has become a quiet area, popular with young families. The municipality paid to have the contamination from the manufacture of explosives cleaned up so that the children could play safely on the green.

The government wants them to keep a waiting list similar to social housing organisations, and for the municipality to nominate 25% of the vacancies, but the freetown always refuses. They already carry more than their share of people who are poor and with a wide range of problems, which works so long as they do this by their own choice.

Many small businesses began life in Christiania, where they can start up at relatively low cost, and some have since left and become very successful elsewhere in Denmark. Each is financially independent, responsible for its own costs and paying tax on its profits just like any other business.

For a very long time there has been a standard Christiania wage which everyone employed by the community or in any of the businesses is paid (currently DK140 an hour ie about £14). Many of them could earn much more money working outside, but prefer doing it the collective way within Christiania. If not there is nothing to stop them working outside in the city. And there are plenty of people

living outside who work within Christiania.

There are shops selling food, a bakery, several restaurants, music venues, a hairdresser, sauna, health centre, and quite a few workshops making or repairing woodstoves, bike trailers, and a wide variety of more artistic products. It is a hive of activity, and just as busy as any other town. They run their own kindergarten.

Away from the more central downtown area people have built some quite remarkable homes. A blue building was the first zero-energy house in Denmark, with high levels of insulation, extracting heat from the lake using a water-exchange heat pump. Most were built using recycled building materials. Their creativity is unencumbered by building regulations, but carried out under the watchful guidance of the Building Group.

The city of Copenhagen now takes photographs regularly to check that no new buildings are being constructed.

Christiania is an extraordinary place in the truest meaning of that word: it would be hard to imagine it existing anywhere else in Europe. I wondered before our visit what the NHMF tour would make of it. I need not have worried.

For more information just search on-line for Christiania, or download the Christiania Guide from <http://www.christiania.org/wp-content/uploads/2013/02/Guideeng2.pdf>



The old munitions factory has become a quiet residential area for families with children