

SYDHAVNEN/SLUSEHOLMEN COPENHAGEN

Harbour renovation project

2000-2009

Sydhavnen is the southern harbour district of Copenhagen, located south of the historic city. With Java Island in Amsterdam as an example, Sjoerd Soeters was asked by the Municipality of Copenhagen to make a plan for the transformation of Sydhavnen into a residential area. This plan consists entirely of city blocks, situated so as to be oriented toward the water on all sides. In order to achieve this, kilometres of canal were added to the area. The size of the blocks in Sydhavnen are based on the dimensions of the large city blocks in the centre of Copenhagen. The twists and curves of the canals create constantly changing spatial effects and sight lines.

Sluseholmen is the first application of the Sydhavnen plan. The island is characterised by a panoramic view of the surrounding water and a more intimate inner side. The inner area is formed by a curved main canal and several short lateral canals. Each city block is a single structure that contains a variety of dwelling types. The facades, however, were worked out by different Danish architects, supervised by Sjoerd Soeters. Architectural guidelines were set for materials, colours, spatial effects and building height, to ensure that each city block remained coherent and fitted in with the greater ensemble.





Masterplan Sydhavnen 2000

Masterplan Sydhavnen 2000

Client masterplan

Byggemodningsselskabet Sluseholmen PS (Københavns Havn & Københavns Kommune)

Masterplan

Sjoerd Soeters

Masterplan
Teglholmen

Masterplan
Sluseholmen



Phase 1: Sluseholmen 2003-2009

Masterplan, supervision and architectural guidelines

Sjoerd Soeters

Developer

JM Danmark - Karre A & B
Sjælsøgruppen - Karre C, D, F & H
Nordicom - Karre E & G

Block architects - design, construction & coordination

Arkitema - Karre A, B, C, D, F & H
Gröning Arkitekter - Karre E & G

Landscape

Arkitema

Facade architects

Arkitema	Kim Utzon Arkitekter
C.F. Møller	Ladegård Arkitekter
C. Stenberg + C. Holgaard	Marie Kaarø
Cubo	ONV
Dissing+Weitling	Oscar Breyen Gröning
Force 4	Perlt & Black arkitekter
Format Arkitekter	Schmidt, Hammer & Lassen
Gröning Arkitekter	Soeters Van Eldonk architecten
Hvidt & Mølgård	Tage Lyneborg
Juul & Frost Arkitekter	Thora Arkitekter
Kasper Danielsen Arkitekter	Vandkunsten
KHR Arkitekter	Vilhelm Lauritzen Arkitekter

Phase 2: Teglhølm 2005

Masterplan

Sjoerd Soeters and Arkitema

Masterplan only. Further development of the plan is not supervised by Sjoerd Soeters.





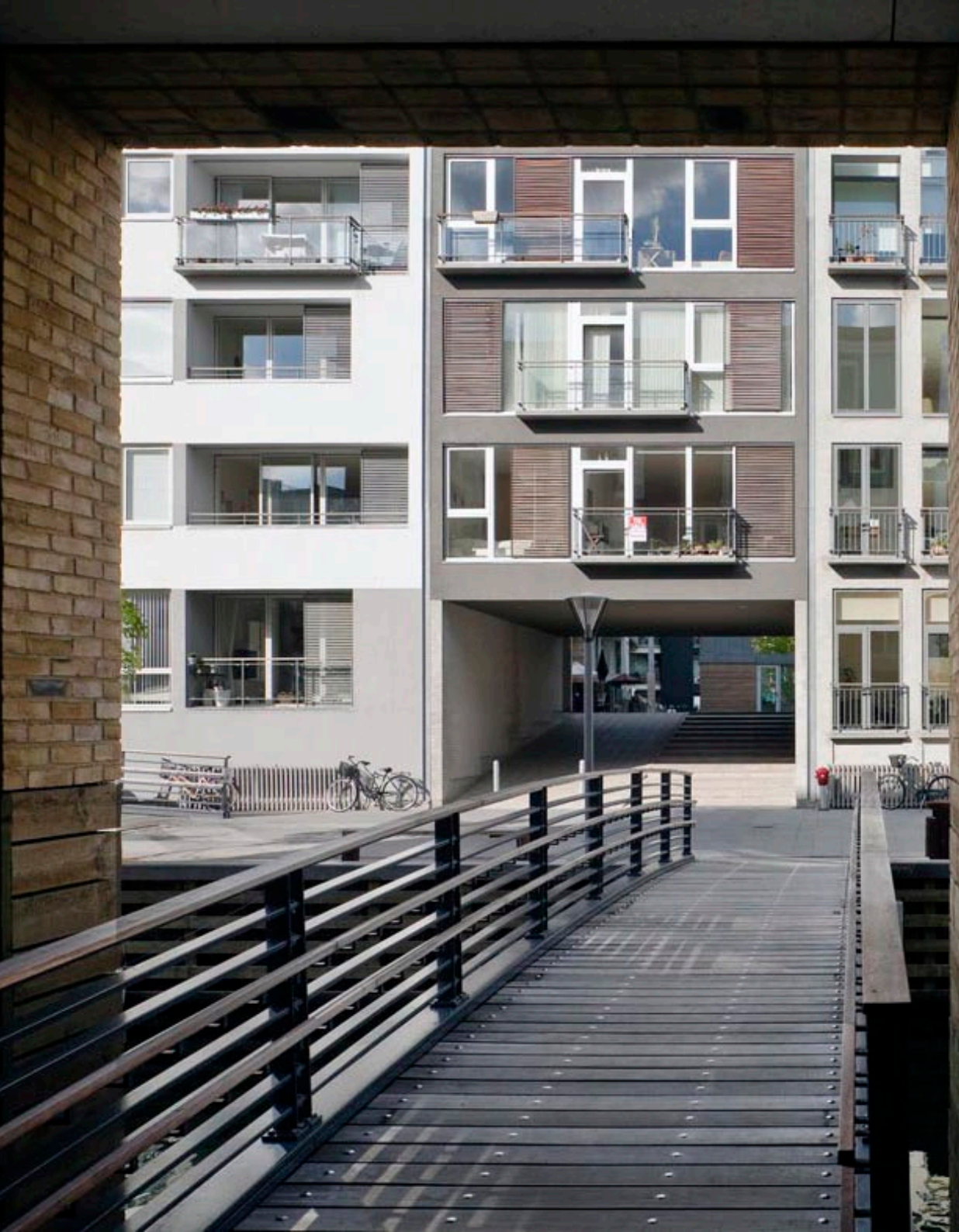




















History

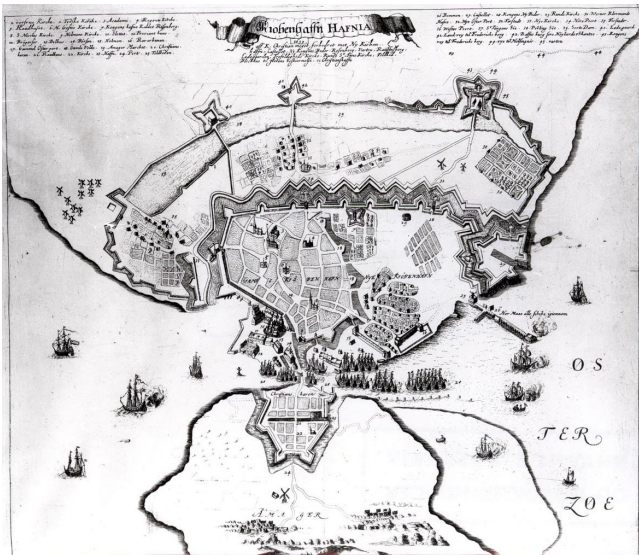
One night in June 1999, a tiny fraction of the Copenhagen Council, the only one that had not left the meeting to celebrate the beginning of summer holidays, forced the lord mayor in the last voting session at 00:30 AM to have a comprehensive plan made in the coming year for both the north and south harbour areas of Copenhagen. The next morning the lord mayor was the first to realise that this duty forced upon him was almost completely impossible to fulfil, as the city of Copenhagen was not even the owner of the two areas. After the summer a committee of professionals was put together containing representatives of the ministries of finance, environment and planning, the real estate

agency of state property, the director of the Copenhagen departments of planning and finance and the director of the Independent Harbour Authority. This steering committee organised a secretariat whose three members made a tour to visit new city planning projects in London, Hamburg, Berlin, Barcelona, Paris, Rotterdam and Amsterdam. Back in Copenhagen they reported to the steering committee that Borneo Sporenburg by Adriaan Geuze and Java Island by Sjoerd Soeters were the best fitting examples for the development of plans for respectively the north and the south harbour. It was winter in Amsterdam when the telephone in the office rang and one of the secretaries, a senior planning specialist, invited us to Copenhagen. As we were

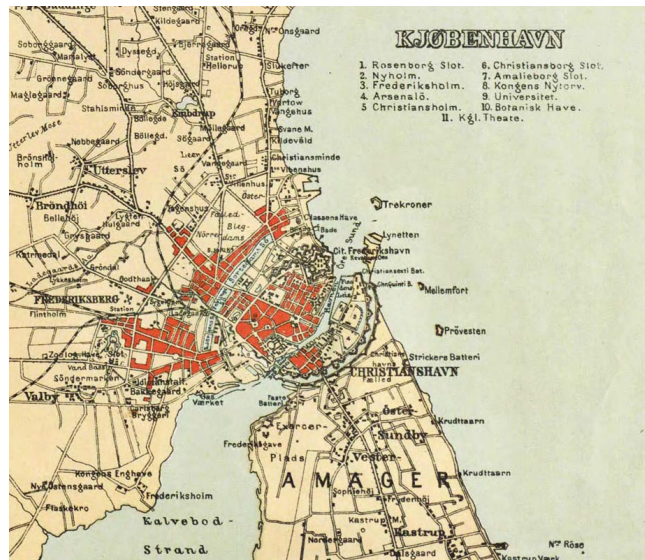
very busy at the time, we weren't able to schedule a meeting within short notice. In the end a compact appointment was made to meet one evening late in the SAS hotel lobby at the airport of Copenhagen and to take the first flight back to Amsterdam next morning.

Our contact, a man of a certain age, kept his rain coat on, collar up, like a character by John Le Carré, and explained the absolute secrecy of the assignment. He proposed an almost impossible short planning process. The plan was to be ready for presentation to the steering committee before June 21 2000 when a city council decision was needed. On midsummer night June 23 a big presentation in the city hall was foreseen.

As the project plan had to be developed



1. Copenhagen 1659



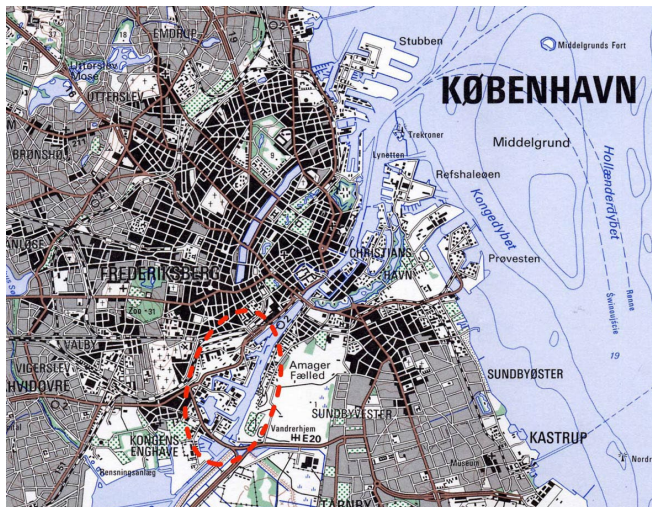
2. Copenhagen 1898



3. Copenhagen 1906

without involving the local planners, the dialogue and debate about the proposed solutions would take place from time to time with the steering committee in which especially the Harbour Authority delegate was not at all in favour of the propositions done by complete strangers on his territory.

The Danish planning and architectural profession was at the same time highly skeptical about the invitation given to these foreigners, because the commissions given were considered the most prestigious planning jobs at that time in all of Denmark.



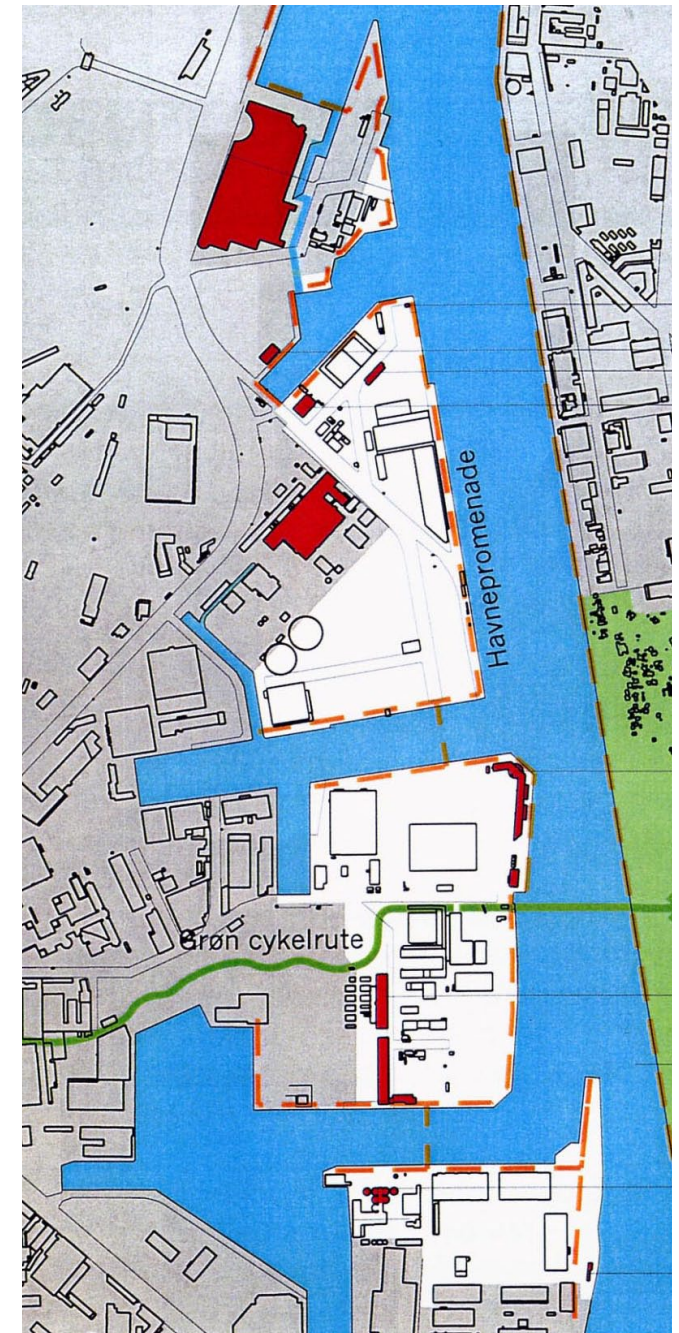
4. Copenhagen in 2000, the marked area is Sydhavnen

The site

The south harbour of Copenhagen, Sydhavnen, is situated south of the city centre. The south harbour area is a set of peninsulas along the main water streaming through Copenhagen in south-south-west direction, each of the peninsulas separated by a side canal with minor branches or a bigger surface of water, a knot with three different sized docks.

As the harbour activities have been moved out further north to a new and bigger port, the south harbour became redundant. While left-over structures, silos, bonded warehouses and cranes stood idly, junkyards for car parts and raw material deposits took over the quay areas. An old fashioned energy plant, rooted in highly polluted soil, producing a cloud of contaminated air and posing various explosion risks around the intake nozzle for oil on the dock side, is a continuing limitation for the development of housing in the area. A modern office building for a ship-engine industry occupies an important waterfront corner of one of the peninsula. The inevitable noise near the try-out shed from the engines that are tested is also limiting the possibilities for housing in the immediate area.

Just like in the eastern docklands in Amsterdam, the water is ever present at 2 meters below quay level. The water though in this case is flowing, cristal clear



5. Sydhavnen 2000



6. Sydhavnen 2000



7. Sydhavnen 2000



8. Sydhavnen 2000

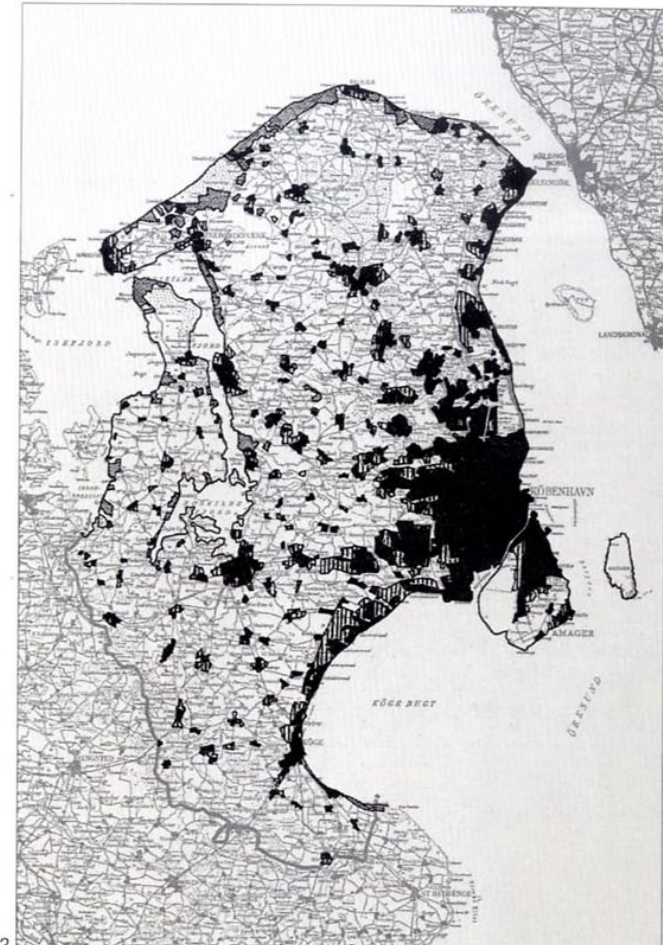
and salt. Making canals is equally different here: the sandy soil makes it possible to just dig them out cheap and fast behind piled metal sheets.

After the Second World War, Copenhagen expanded according to the municipal 'finger plan': the urban expansions should be stretching out into the surrounding land-

scape like fingers of one hand. At the same time, between those fingers, the landscape should be able to touch the old city centre. This strategy resulted in the suburbanization of a far bigger area around the city and ever bigger traffic problems of growing numbers of commuters. With the prospect of the opening of the Øresund Bridge from Copenhagen to Swe-

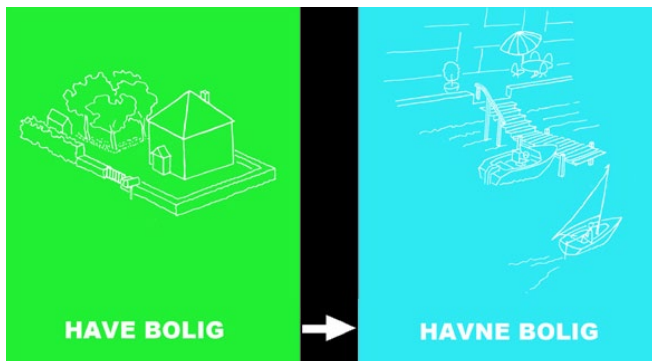


9. 'Finger plan' of Copenhagen



den in 2000, modern big high tech companies set up their head offices in the harbour areas and on the waterfront of the city of Copenhagen thus attracting young, highly educated professionals. However, the housing possibilities in the old city, mainly small two room apartments in social housing projects, didn't answer the demands of these young urban professionals. There was an urgent need for the kind of housing that would satisfy them and that would keep them from seeking settlement in the suburban districts further away.

By transforming the southern harbour with its long waterline into a residential area, the city could offer an alternative. A primitive illustration therefore was drawn up, showing that the plan was aiming at a house on the waterside with a small jetty and a boat (havne bolig), instead of the traditional house surrounded by a hedged garden (have bolig), blue instead of green.



10. From *havne bolig* to *have bolig*

Genius loci

Looking for the genius loci of Copenhagen, we found a medieval looking inner city where vertically developed individual houses address lively narrow streets and intimate squares. Neo classicist influence is found in the parts of the city that were rebuilt after the fire of 1795.

The introduction of Dutch designers for commissions both in the north and south harbour aroused public debate, stirred by the professional community. However, it stands in a proud tradition of inviting foreign city planners when they had proved their ideas to be the best of their time. In the 17th century, the Dutch have been invited to design Christianshavn at the east side as a canal-area. The French, highly successful and fashionable in the 18th century, drew up the northern extension of the city in a plan for Frederiksstad. Nyhavn, today a crowded strip of cafes,



11. Copenhagen, neo classicist influence



12. Copenhagen, individual houses in narrow streets



13. Copenhagen, neo classicist influence

restaurants and bars, is as Dutch as a quay front can be, built in typical Danish architectural style and colour. Frederiksstad is built up out of big city blocks of city palaces, the royal palace surrounding the octagonal square at its centre, with enor-

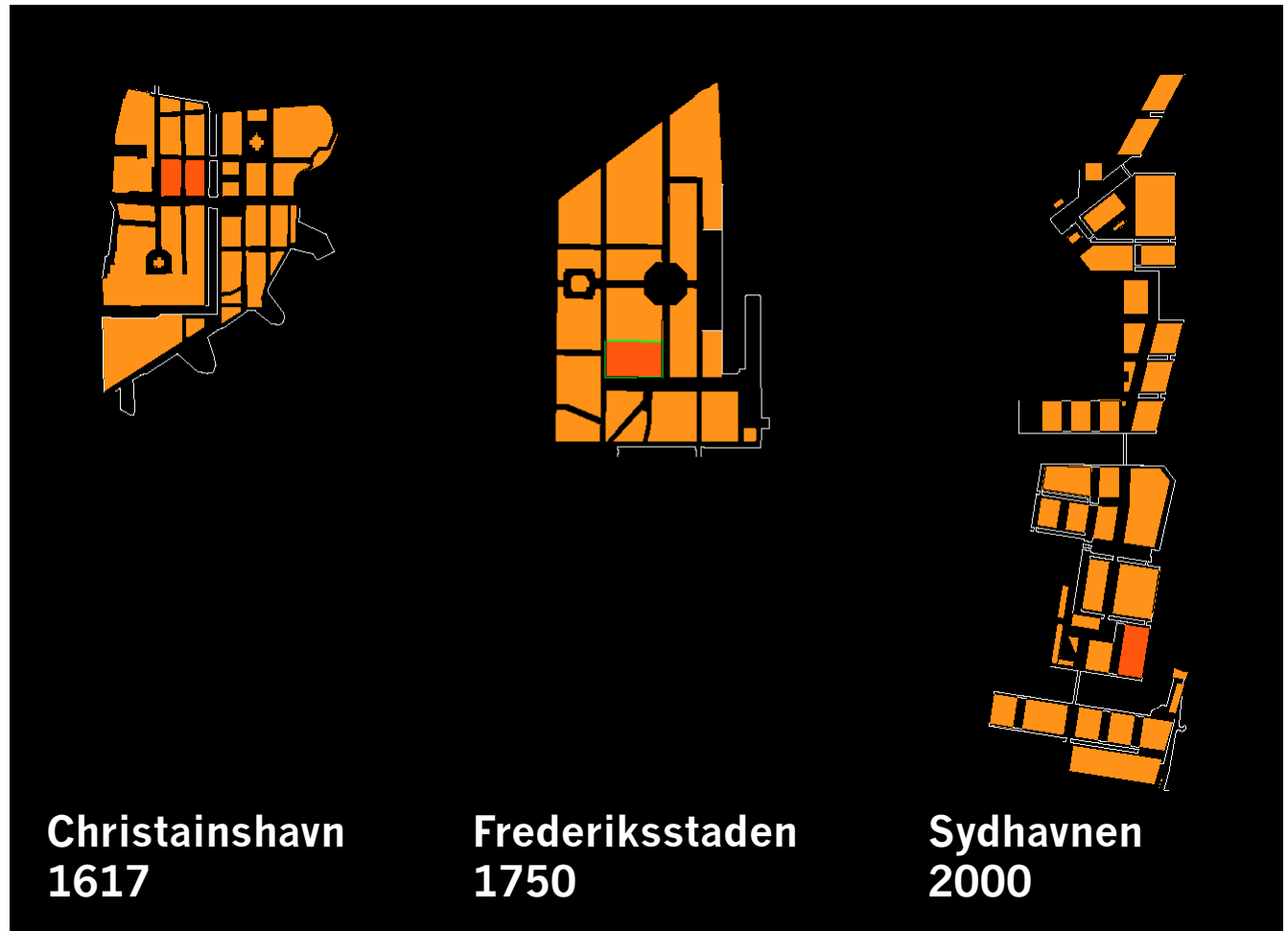
mous courtyards behind the houses, in which first, second and third back houses find ample place. The scale of the south harbour site is comparable to these historic commissions.



14. Copenhagen, city block in Frederiksstad with courtyard



15. Copenhagen, Nyhavn



16. Comparison of the different quarters



17. Masterplan Sydhavnen 2000

The masterplan Sydhavnen

A concise plan for the four elements of the south harbour was designed in a few months. The importance of the water was enhanced by the addition of an enormous length of new canals in an attempt to give all housing water orientation. Following the ideas of the French, big perimeter blocks dominated the plan, reserving space for first, second and third backhouses, and creating interior courtyards with the size of small parks. The second peninsula, Teglholmen, posed specific problems of how to deal with the office building and

test shed of the ship engine factory, and how to weave in the green crossing area for bicycles and pedestrians, that the local planners had foreseen, within a pattern of canals and waterfronts.

On the first of July 2000, the day the bridge to Sweden was officially put into use, an exposition of the harbour plans was opened in Christianshavn. The south harbour plan was shown in a 1:500 model in which Sluseholmen and Teglholmen had blocks that had coloured and parcelled elevations, the rest of the total plan being shown as white volumes.

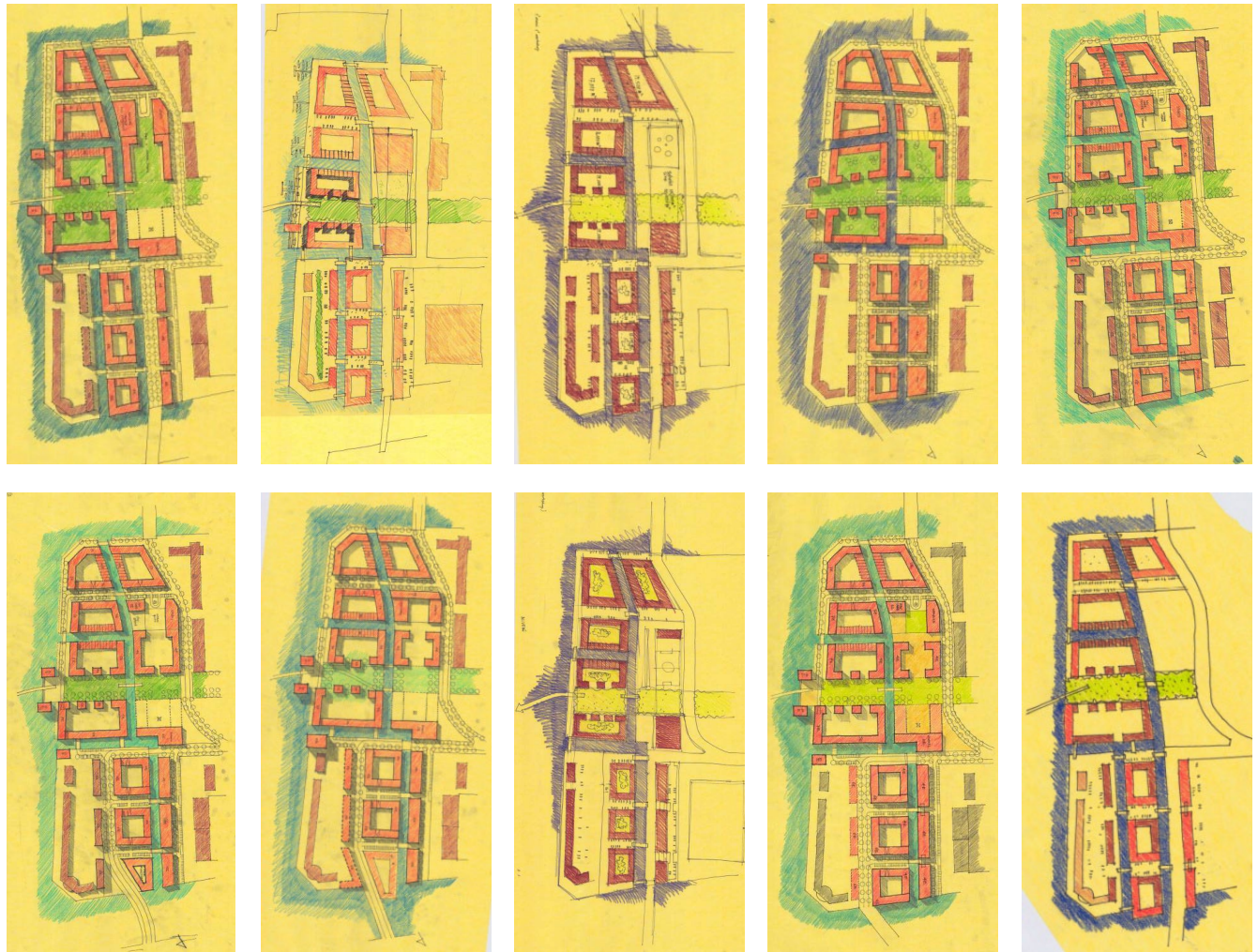


18. Model of Sydhavnen 2000

Polder model

Then, after the exhibition was finished, a decision was made about the plan for the South Harbour and a new phase was started: the definitive planning of the re-alisation of Sluseholmen, the most southern part of the area. Until then the plans had been made without any contact with the local officials: the Copenhagen kingdoms governing and controlling the quality of air, water, underground infrastructure, green areas, pollution, transportation, bicycle routes, parking norms, housing, local planning. The next step was likely to be that we, the foreign invaders, had to go on a round trip, hat in hand, to make peace with these highly irritated organisations. We told our secret client that this absolutely would not work.

Instead we proposed to adapt the famous Dutch polder model. We invited representatives of all these kingdoms to participate in a sequence of round-the-table-meetings in which all problems, possibilities and alternatives were shared. As a result from these meetings tasks were defined, sub-studies were done, solutions were found, in such a way that the project, loaded with more information than initially was available, became resistant against all kinds of threats, and was more realistic and better in the end.



19-28. Sketches of Sluseholmen

Parma versus St. Dié

The problem of most newly planned city extensions is that, although they may be beautifully designed, they are completely dead. The pure beauty of design, unity in colour and in volumetric composition may play a very big part in this feeling of deadliness, but this is not the whole story. Big blocks generate big in-between spaces, that are mostly occupied by cars, driving by or parked on the spot. Even when most of the cars are stored in underground garages or under buildings, the open spaces feel uncomfortable. People see each other at great distance, the frequency of meeting one another is very limited, the new city feels as anonymous. Part of this is caused by the extensive unbuilt surface in modern city planning, the other cause

is the low population density. Even in traditional cities, their built volume kept as they are, the number of people per hectare has decreased with a factor of at least 10. In nineteenth century Amsterdam it was common for a family with 8 children to live in a two room flat, whereas today a four room apartment is likely to be used by two people. So, when the streets of the old city quarters used to be full of human interaction, nowadays they are far less crowded.

In modern city lay out schemes this has become even worse. Colin Rowe explains in his book *Collage City* why this is, by comparing the post war plan for the rebuilding of St. Dié by Le Corbusier with the city plan of Parma in the north of Italy. Both city plans are in the same scale and black stands for built, white for unbuilt.

In St. Dié this unbuilt area can be characterised as 'space', whereas in Parma it resembles more what we call 'room'. Buildings in St. Dié are sculptures standing in free floating space; in Parma buildings line up along street lines and they, standing shoulder to shoulder, shape the public rooms of the city.

A walk through both plans takes less than a quarter of an hour. In St. Dié though, walking along the straight roads, designed for cars, makes you want to hitchhike. You can see the buildings further up the street already from afar and it feels like you only slowly come nearer. They have so little detail that your walk is not at all rewarded by new images when going along the straight road. In St. Dié you would rather not walk at all.

However, walking through Parma is like



St. Dié

TOTAL AREA	405.000 m2
OPEN SPACE	356.800 m2
BUILDING AREA	48.200 m2
% BUILT	12%
FACADE LENGTH	7.650 m2

Environmental Assessment Method:
BREEAM-NL Area Development

UNCLASSIFIED	<25
PASS	>25
GOOD	>40
VERY GOOD	>55
EXCELLENT	>70
OUTSTANDING	>85



Parma

TOTAL AREA	405.000 m2
OPEN SPACE	201.100 m2
BUILDING AREA	203.900 m2
% BUILT	50%
FACADE LENGTH	27.220 m2

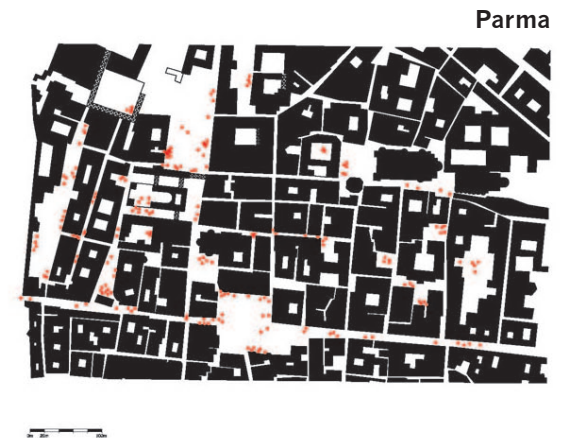
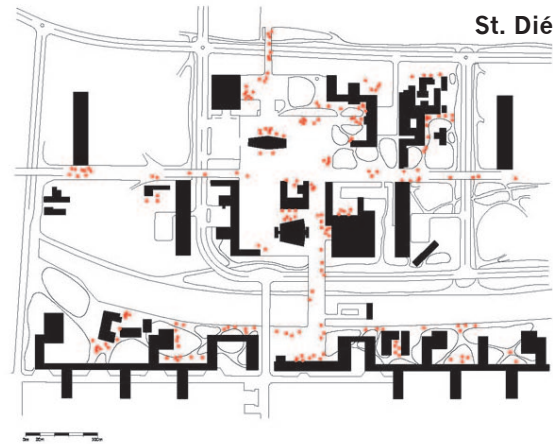
Environmental Assessment Method:
BREEAM-NL Area Development

UNCLASSIFIED	<25
PASS	>25
GOOD	>40
VERY GOOD	>55
EXCELLENT	>70
OUTSTANDING	>85

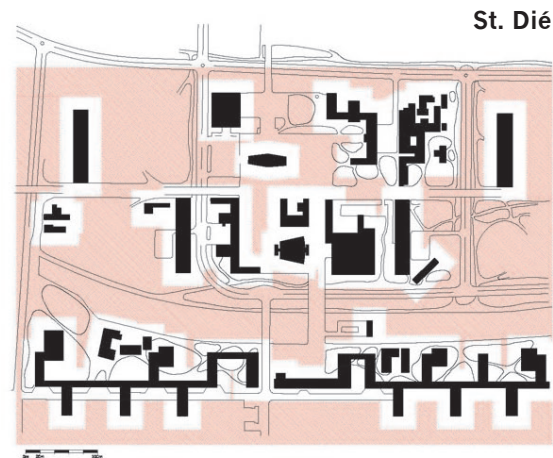
watching a movie. Every fifty steps a new image comes up: turning a corner, finding a church on a square, a lively piazza front with loads of people sipping coffee, talking, reading newspapers, shops in side streets around the next corner, people who live and work there! You would like to spend the whole afternoon there with pleasure.

Not only the built surface percentage of the two is very different, also the facade length - that is the length of the contact area between building and public space - is very different (a factor of 4). The public area in Parma is so much smaller than that in St. Dié that, if there would be the same number of people in both examples, the number of people per square meter public open space in Parma would be four times higher than in St. Dié.

In her book *The Death and Life of Great American Cities*, Jane Jacobs argues that 'eyes on the street' are a very important factor in creating a safe city. We can recognise a face at a distance of 20 to 25 meters, which is important in crime prevention. When we draw a line around the buildings of St. Dié and Parma at a distance of 25 meters, beyond which we cannot recognise a face in the public area, we see that in St. Dié an enormous pink area can be characterised as unsafe, whereas only the centres of the busy piazza's in Parma are coloured pink. For these reasons, and for many more, we tried to



30. Parma versus St. Dié: same number of people in the public area



31. Parma versus St. Dié: unsafe public area is pink coloured

reduce the public area as much as possible. A limited public surface is the best condition for people to meet each other more frequently, for safer living quarters, for more commercial activities nearby, for more pedestrian and bicycle movements,

for more effective public transport, for a better BREEAM score (environmental assessment method, see figure 29) all over: dense and happy cities are the best and maybe the only answer to most environmental problems that we have.....

Sluseholmen

So, attempting in the next phase of precision to maximally shrink the public area, we decided to eliminate most streets in the Sluseholmen plan. We made our perimeter blocks rise up out of the water as much as possible. The main canal we laid out in a slow curve, so that at the beginning of your promenade on the quay the end of it is not visible yet. This principle of 'serial vision' (see Gordon Cullen in *Townscape*) is applied here to create an area in which visitors and users can wander and be constantly surprised.

The hollow stretch of buildings facing south is the longest in view, while the convex row of buildings facing north is not dominating the atmosphere, as it is shortened in perspective. Because the summer season is short, Scandinavians love it when the sun is shining. That is why the promenade quay is only stretched out as compacted public area at the north side of the main canal section. Due to the reduction of public area surface, most of the housing in the perimeter blocks has to be entered by way of the interior courtyards. Because of this, these courtyards become communal urban spaces, shared gardens where people who live around it can meet one another, have their children play safely, have barbecue parties and so on. Java Island consists of long peripheral



32. Masterplan Sluseholmen

rows of 27 meter wide 'houses', with perpendicular to them rows of canal houses and palazzo's of uniform dimensions as well. In Sluseholmen, most blocks are not rectangular and they form an intricate fabric of apartments, stairways, elevators, galleries for access, etcetera. It therefor seemed impossible to commission separately designed 'houses' of standard

dimensions as we did on Java Island. For Sluseholmen, so-called 'block architects' were commissioned to sort out the best way to organise an entire block with its public access to the courtyard and, from there, its varied entryways to different apartments and maisonettes, to the parking under the courtyard, to storages, bicycle parking, and so on. These block plans



33. Model of part of Sluseholmen



34. Aerial view of Sluseholmen 2006

were discussed with city officials, developers, and the supervising architect Sjoerd Soeters.

A very primitive set of architectural guidelines was drawn up in a cartoon fashion (see appendix 1).

Then some thirty highly modern and mostly famous Danish architects were invited to design the facades of the pseudo-parcels in which the blocks were divided. The architects were not amused, not to say that they felt flatly insulted. But they nevertheless took up work, and came to-

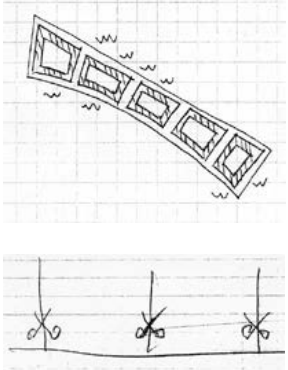
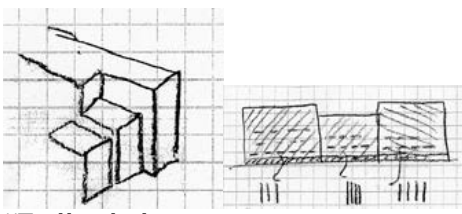
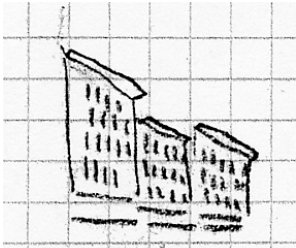
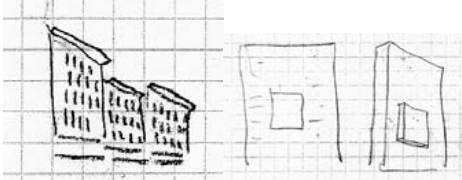
gether to discuss the paper and carton board models that showed the progress of designs of every block. Danish architects are well educated but at the same time touchy. Criticism of the supervising architect sometimes almost resulted in an uproar; only my Danish speaking assistant architect could warn me in time to prevent it..... The sometimes strong debates nevertheless resulted in blocks that were very satisfactory to the whole team of city representatives, developers and the supervisor.

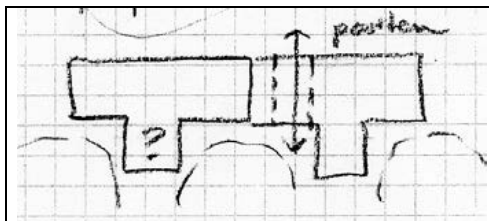
A picture of May 2006 shows building activities in Sluseholmen. Danes build their housing in a kind of cold montage, most concrete parts being precast. Therefore the parking is best constructed under the courtyards and not under the housing structures.

Completed in 2009, Sluseholmen has received various architecture and planning awards since then. Inhabitants send fan-mail. It seems to have become a place that people are proud of and love to live in.



Appendix 1: Architectural guidelines Sluseholmen

Architectural guidelines Sluseholmen 18.02.2003 Second version Soeters	
1. Main structure   "To live in houses" "Variation of the facade" "The buildingmodulus is fixed"	<p>The main structure of the buildings blocks (islandblocks) is surrounded by canals and harbour bassins. The houses on the individual island must appear homogeneous in size and rythme in order to maintain a continuity.</p> <p>Every house in the block has its own plan, organisation and own architectural expression.</p> <p>The houses along the cross canals are smaller and so have a smaller individual (vertical) expression.</p> <p>.</p>
2. Height:  "Variation of height between the indiviual houses"	<p><u>North,East,West quay :</u> A variation of 5-7- floors with an average of 6½</p> <p><u>South quay :</u> A variation of 4-5- floors with an average of 4 ½.</p> <p><u>Canal buildings:</u> A variation of 3-4½ floors with an average of 3 ½</p> <p><u>Note:</u> The difference in height from house to house can incidental be one floor.</p>
2. Elevations  "The vertical arrangement in the facade is important for the proportion of the facade."	<p><u>North, East,West quay apartmentblocks:</u> <i>"The facades are individual faces of the houses to the public space."</i> The balconies are a part of the architectural facade, no projecting balconies to the public space. The annexes and balconies project out from the facade by a maximum of 30-40 cm.</p> <p><u>South quay: apartmentblocks</u> <i>"The facades are individual faces of the houses to the public space."</i> The balconies are a part of the architectural facade, no projecting balconies to the public space. The annexes and balconies project out from the facade by a maximum of 30-40 cm.</p> <p><u>Courtyard elevations:</u> <i>"The facades are individual faces of the houses to the public space."</i> Smalll extentions and annexes are possible.This to create different</p>

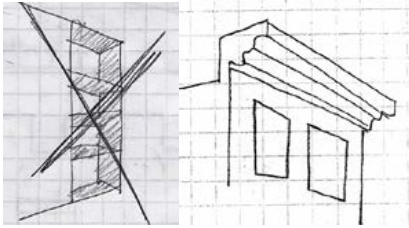


outside rooms in the courtyard. The balconies are a part of the architectural facade. The balconies project out from the facade by a maximum of 100 cm.

Cross Canal buildings:

"The facades are individual faces of the houses to the public space."

The balconies are a part of the architectural facade, no projecting balconies to the public space. The annexes and balconies project out from the facade by a maximum of 30-40 cm.



No piling of balconies in order to avoid large holes in the facade. The gates in the block have to be a part of the building. The facade should end with a designed trim – a finished "corniche", in a modern way. This subtle element can also be used to articulate the height differences.

The windows in each facade are setback with a specific depth per house.

The variation of windows from house to house are made to avoid continuous horizontal lines in the facade.

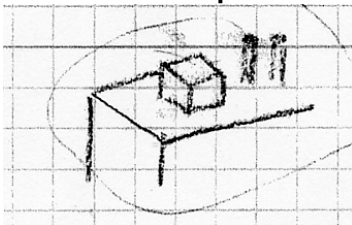
4. Materialisation and colors

The materialisation of the facades of the buildings should avoid deteriorating, but instead should age in a nice manner by using materials such as brick, copper, zinc, and wood. Glass only in openings, not as a main mass.

Materials used in the Danish tradition, and seen in Copenhagen.

A colorpalet has to be worked out. This palet maintains the harmony of area, each area will have a specific colorpalet.

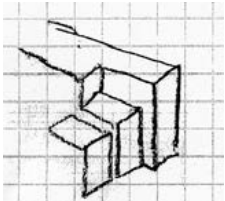
5. Roof landscape:



The roof can be penthouses and-/or roofgardens.

The installations on the roof are preferably not higher than the height of the designed trim. Individual pipes are grouped and hidden in chimney cages.

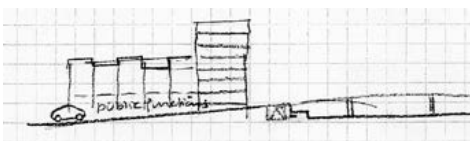
6. Corner buildings



The corners of the different urban blocks are going to be designed according to the situation. – "different solution for different situations- with the possibility to place public functions. Therefore the fronts of the buildings is more open.

The transition of the corner building at the cross canals, where the lower meets the higher building, should be designed individually. The solutions should be related to the scale of the smaller crosscanalbuildings.

7. Public space



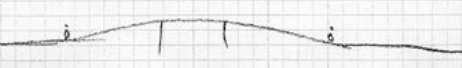
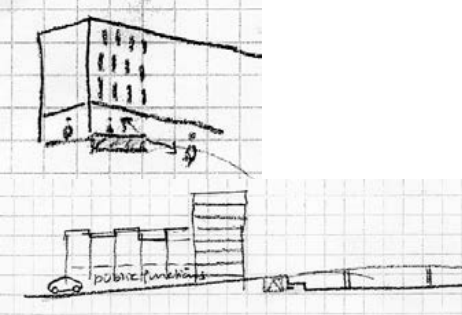
A proposal is going to be worked out for the hierarchy of the different places in the public space.

Proposals of functions, activities etc. which can be at the different places.

Sections quay north side: the existing height level of the quay

Sections quay south side: $\pm 0.5m$ lower than the north quay

Section Sluseholmen: Sluseholmen is the entrance to the whole area. The road will be a long slope starting at the level of the Metrobuilding. The level will end up in the bridge over Teglværksløbet. The buildings are following the upgoing level of the road.

8. Bridges 	<p>The bridges are an important part of the public space. Through their heights the quai is divided into different areas which enriches the experience of the public space.</p> <p>The bridges will be as high as possible with a maximum slope of 1:20 according to the rules for disabled people.</p>
9. Parking and Courtyards	<p>The basic idea is that the main part of the courtyard should be a green area with hard pavement incidentally. A minimum of 2/3 of the whole area should be green and grass, 1/3 hard pavement. Each courtyard differs.</p> <p>Guidelines for the specific landscape in the inner courtyards of the blocks will be worked out. .</p> <p>The exact guidelines for parking based on these ideas will follow.</p>
10.functions 	<p>The groundfloor of the buildings following the height level of the Sluseholmen has to be filled with public or work functions. Public functions may also be created in the ground floor of the corner buildings.</p> <p>It is of very importance that the kindergarden is intergrated in one of the buildingblocks near by the main entrance of the area.</p>

Procedure:

The architect, has to agree on the guidelines and be willing to design a project based on these guidelines