

## **Rotterdam: Living with Water**

### **Water City 2035**

#### **1. Introduction**

Rotterdam was developed along side of the river Rotte, exactly at the place where the Rotte streams into the river Maas. Except for its name Rotterdam, it is the water that made the city. And it still does. As from the 19<sup>th</sup> century on water determined the urban landscape and social cities landscape. The city was divided in two parts: a part for the ordinary and the poor people and a part for the more wealthy people. A dike formed not only a physical line it also was a social line. The more wealthy part of the city was formed by the seven harbours (in Dutch: haven): Scheemakerhaven, Haringvliet, Wijnhaven, Leuvehaven, Oude Haven, Blaak en Nieuwe Haven. Between 1576 en 1616 warehouses and big houses of the merchants were built there. This wealthy part of the city was called Water City. These (city) harbours kept on flourishing especially between 1850 and 1913.

The effect on the population of Rotterdam was enormous; the population grew from 100.000 till 450.000 within these sixty years. This growth had also an enormous effect on the size of the city and on its social system. Rotterdam became a modern city (p44). But the growth of the city in a short time had a side effect. Before 1901 there was no regulation on housing. Especially the poor people moved from the old city to the unplanned polder areas. Because of the concentration of people in the old city and uncontrolled expansion in the polder areas the water drainage system got overload and the water got polluted and this caused a shortage of clean drinking water. The death rate in Rotterdam in these days was higher than in other big cities in Europe. A side effect as well was the smell of the dirty and standing water.

The city's architect Willem Nicolaas Rose and an engineer of the water management authority Jan Arent Scholten developed a plan – the so called Water Project – in which the water foresaw in two things: first letting in fresh water with high tide and second pump out the water after it had done the 'cleaning'. In 1854 the city council agreed and parts of the plan were realised. The aim of the project was also to introduce quality into the city by introducing beautifying elements like boulevards with trees along the river where people could stroll, ponds with lots of green around and canals combined with dwellings for the richer people. These dwellings were seen by its founding father as the golden border. Because of the ever-growing population of Rotterdam the dwellings along side the canals for the richer people weren't build. In stead it were the more middle class people who were housed there. But also there was a regulation which forbade the workmen to live there. They lived in the areas behind the canal areas. And so the golden border was created after all.

The canal concept combined with (dwelling) space for the richer people of Rose stayed a source of inspiration until the Second World War. At the beginning of the 20<sup>th</sup> century villa houses in new city parts were planned to prevent the movement of richer people. Especially the out movement from the richer to The Hague was unpleasant for the cities government. (Hooimeijer & Kamphuis (eds), 2001)

Rotterdam still is directly related to the water. Nowadays the planners and the government are aware of the fact that water could become a serious threat because of the climate change. Rotterdam lies in a delta and is the lowest city below sea level in the Netherlands. The other problem Rotterdam has - as one of the big cities in the Netherlands - is the great number of low-income households and lower educated people. And Rotterdam has also an undifferentiated economy. Both the social and economical characteristics are seen as a threat for the future of the city and its ambition to become a healthy metropolis. The project Rotterdam Water City 2035 combines the water related problems and the social and economical problems. The hart of the plan is to transform the problems into an opportunity,

starting with the water related challenges. The transformation of the physical structure of the city is set as a precondition to challenge also the social and economical problems Rotterdam is facing. The main thought is that water will make the city an attractive place for people to work and live in, especially the medium and high-income groups and for companies to invest in. (Aarts et al., 2005)

What can be concluded from this short outline is that the structure of the city before the Second World War – also due to the planners and politicians of that time – was based on a positive correlation between the presence of water and the socio economic status of the people who lived in the areas near the water. Also it may be concluded that the government also focused on becoming and staying attractive for the wealthy people so that the city stays rich in it self.

The concept of Water City 2035 is also based on the thought to attract the richer – middle and higher incomes. And also water is central: water management combined with adding quality to the city. For me the question raises that what will happen to the original poor population if the medium and higher incomes will be attracted to the city as a result of the restructuring? Where will the poorer part of the population live? Will this part of the population get more disintegrated or even isolated? And what can policy do?

I want to explore this along following questions:

- What is the relation between social problems and spatial plans?
- Why is urban restructuring chosen as an instrument?
- How can the social-economical and spatial economical situation of Rotterdam be characterized?
- What can be said about the economic value of the new housing concept presented in the concept of Water City 2035?
- What are the spatial ambitions of Water City 2035?

These questions will feed the concluding part where I answer the central question.

## **2. Social problems and spatial planning**

Spatial segregation and concentration of people are as old as the hills (Van Kempen & Özüekren, 1998). Segregation is linked to spatial inequality and both are often causally related to social divisions in society. And this spatial inequality in terms of for example social class is associated with problems, like crime, lack of participation in education and society at large and decreasing quality of the dwellings and public space and a declining quality of life (Anderson & Kemps, 2003). In some cases spatial inequality has a direct link to the problems. The most examples come from America where you find ghettos. In West-Europe the government have introduced all kinds of welfare state arrangements that reduces the social inequality. So a lot of 'problems' are first of all social instead of spatial. At most the poor and unemployed people (particularly the long-term unemployed) tend to get socially isolated (Larsen, 2003 and Knox & Pinch, 2000).

In many Western European countries, social division between the rich and the poor, between those who are excluded and those included are now on top of the policy agenda. In many countries the processes of dividing these groups continue. Spatial segregation and concentration of deprived groups in specific neighbourhoods is seen as result of this. The spatial segregation and concentration of low-income groups is seen as risk for the liveableness or the neighbourhood (Bolt & Torrance, 2005). This concentration mostly is found in parts of the city where the rents are cheap. Most of the time it are the old(er) parts of the city or the parts at the fringe of the city (Andersen & Van Kempen, 2003). Overall poverty, poor housing and poor maintenance go hand in hand. In the better-off neighbourhoods housing is continually maintained and improved. Mostly a downward spiral of decline, disinvestments and further decline can be recognized in the neighbourhoods with poor housing (Short, 1996). The problem with these neighbourhoods is also that it leads to negative

effects on the presence of commercial facilities. And maybe worst of all it may lead to a negative image of the neighbourhood of even the city among the people and (potential) investors (Van Kempen & Özüerkren, 1998).

To turn the tide of social problems – which have a spatial component – restructuring of the housing stock is still seen as a good solution. The main thought behind this is that when the quality of the housing stock is improved and when there are different houses in a neighbourhood the population will diversify with it. And by doing this social interaction will be a direct effect. Heterogeneity is therefore become synonym for a balanced social situation and social cohesion. This is by 60% of the housing corporation used an important argument for their investments. (Bolt & Torrance, 2005)

From the side of the scientists came a lot of criticism. From research it can be concluded that only using the physical track in social policy is not enough. It is rather naïve to think that mixing in housing leads to more social interaction between various groups. The problem in this discourse is that the neighbourhood is seen as a social uniformity that functions as the central place in people's daily life. None of that is the matter. Research shows that from 1955 on the neighbourhood is not in social ways the most important spatial unit. And for people who are strongly neighbourhood oriented the neighbourhoods are mostly homogenous. (Bolt & Torrance, 2005)

The thought of starting with the neighbourhood is rather a romantic view on the world. A world that has become more complex and more individualistic. People create their own network – in which they are the central starting point – of friends and other social contacts. And more than forty years ago Gans (1961) discovered that social contacts between neighbours which are more than just the friendly hello and good morning will develop sooner in a homogenous area. If the heterogeneity is too much even sharper contrasts are the result (Bolt & Torrance, 2005). This leads to the question of 'how bad is social segregation?'

And what about the people. Do they want to live in heterogeneous neighbourhoods? Do they experience it as enriching for them and their family? What is seen and described in the literature is that social segregation and with that spatial segregation is very normal. Most people strive this situation. This is also the case for social economical lower part of the population (Priemus & Van Kempen, 1999). This is not a new situation. In former days the place where people lived was a direct effect of the place where their work was situated. And also the mobility in a material and financial sense made that people didn't have much to choose. Nowadays income and life style are the defining categories for the living situation. Social homogeneity is especially for middle and higher incomes a choice. Social homogeneity in a way is a product of society. In our society there are more differences between people and it is an ongoing process. In this climate people want to live next to a neighbour that shares the same ideas. (Deurloo et al., 1998) Maybe the trend of gated communities and neighbourhoods of the new urbanism style can be seen as a logical effect or exponent.

### **3. Why urban restructuring?**

Restructuring is nowadays a spearhead in the Dutch urban renewing policy. Especially the housing stock built after the Second World War needs maintenance. In most of these neighbourhoods demolishing the original stock and rebuilding – mostly in lower densities – is one of the measurements to achieve a better quality.

In general restructuring policy can have three motives. The *first motive* is the social – economical motive. By means of this motive a solution is needed for the spatial pockets of poverty. Because of these concentrations the population don't have chances on well being in society. The *second motive* is the social cultural. Restructuring must prevent the downgrading of the livability and the social structure. The *third motive* is the spatial

economical. Because of the one-sided housing stock, mostly the cheap and badly maintained housing the neighbourhood gets a one-sided population. The prosperous families leave and the single or single parent households stay. The service level of the neighbourhood descends. All this leads to a down graded image of the neighbourhood. (Van Beckhoven & Van Kempen, 2002)

In the 1960's and 1970's the functionalistic approach was popular in planning and housing development. In this planning paradigm it was thought that the build environment had great influence on human behaviour. Planning was aimed at the hardware. Nowadays urban planning has changed into an integrated part of the urban politics. Politicians and other stakeholders now realize that urban life is too complex to be solved by physical determinism. (Andersen & Van Kempen, 2003) Although it is still believed – in the Netherlands as well – that spatial intervention is necessary to gain a reduction of social inequality and social segregation. Reduction of social segregation will always imply a dedifferentiation, or restructuring of the housing stock of low-income areas.

In the 1990's the government realised that less households could make the next step in their housing carrier in their own neighbourhood. In certain areas was a shortage of especially the more expensive houses so more and more middle income and higher income households moved. The lower income people stayed behind which led to tensions. The national government published a policy document for urban renewing in 1997 in which a blue-print-solution was given. (Van Beckhoven & Van Kempen, 2002). Restructuring was seen as *the* solution for a more diverse population and housing stock. The policy document about living of 2000 had incorporated the criticism of which I spoke before. In that document it is said that social differentiation in neighbourhoods must not be a goal in itself. For the social goal of the restructuring the aim is to give the social mobile population more housing carrier opportunities in their neighbourhood. But with the new national government that was settled in 2002 the old paradigm was back on the agenda: more variation in housing stock leads to more diversity in population and to more integration and social cohesion. Different from the politics of the 1990's is that this policy gets more and more focused on not western immigrants. The new cabinet not only tried to get more variation of population by ways of the housing stock they also implemented allocation policy for social housing. This was applied to people who earned less than 120% of the minimum wage. (Bolt & Torrance, 2005)

The latter policy is a more direct method to spread population, especially the 'drop – outs' of this society. With dropouts I mean people with a low education degree, (for a longer period) now income from a job. Restructuring policy to spread this part of the population is more indirect. From the literature it is unclear if such mechanism exists especially in a time where market driven housing is more and more the case. (Musterd et al., 1999)

Sako Musterd (1999) concludes that urban restructuring may be a sensible approach to improve the quality of the urban environment, to make the urban housing stock more attractive to different household types, especially to those with higher incomes, and to enlarge the income regenerating capacities of commercial properties in the cities. It is certainly sensible to invest in the urban environment to improve both the economic vitality and the housing quality of the cities and to strengthen the competitive edge of cities vis-à-vis the surrounding market. But the efforts to manipulate social compositions in neighbourhoods through physical residential instruments, have not shown much success in the past. From the literature it can also be concluded that the underlying ideology is most of the time unclear. One of the things is that politicians conclude very fast that the Netherlands has a high degree of segregation and that concentration of certain people leads to problems. Another remark that is found in literature is that cheap rental also means that the neighbourhood is weak. The opposite is also concluded: expensive houses and home ownership are seen as strong. The comparison is made with the American situation, which is figurative. Therefore mixing is also seen as the solution. (Van Beckhoven & Van Kempen, 2002)

The spatial consequences of the physical strive after social cohesion is that quality is added to a neighbourhood. Mostly by demolishing the bad part of the neighbourhoods housing stock. The people who live their need to move to other parts. Most of the time they move to houses for which they have to pay the same. In a lot of cases the housing stock has the same condition as their old house. And most of the time it hits the poorest people first. So at first the poorest people are gone. Their housing situation doesn't improve much. There is also a change that they have to move again when the bulldozers get to their neighbourhood. The process then starts from scratch on. In the neighbourhood they left the quality has improved. The prices of the houses (also the rents) in the neighbourhood will rise. So middle incomes or even higher incomes will come in. Because of this process there is a chance that the original population who still lives there also will (have to) move. At the end of the process the neighbourhood has improved, it made an upward movement. Not only the stock and the environment but also its social status. But the original people often make a horizontal or even (a felt) downward movement. The latter is often the case when people are forced to move and if their housing situation stays the same. (Kleinhans & Kruijthoff, 2002) And in the end the neighbourhood becomes homogenous again. It is also possible that physical measures not lead to a economically better neighbourhood. If the image of the neighbourhood has been bad for a long time, it is hard to turn this 180 degrees. So building nice and relatively expensive houses is no guaranty that people are willing to pay that amount of money for these houses. (Priemus & Van Kempen, 1999) And also in this strategy the population stays homogenous.

In the Netherlands you don't find sharp contrasts in a way of 'two worlds apart'. Also therefore if the government wants to do something about social segregation it is more important to search a nice house in a suitable living environment so that people are happy. (Musterd et al., 1999) In a way it doesn't matter what kind of motives are behind large restructuring operations. There are a few things that must keep in mind. In restructuring operations an intensive process of giving the original population a voice in the operation and getting insight in the living preferences is necessary. With this suitable living for every household must be searched. Therefore the criteria that are used to reallocate the families mustn't be too rigid. And also in these kind of operations the new housing must be there before the process of reallocation is started so that people can make an upward movement in their housing carrier. (Kleinhans & Kruijthoff, 2002)

On the other hand the governments needs to do more. They have to concentrate on not letting differences between households become too big. So education and job are programs also are needed if social problems are also the motive of the government. (Musterd et al., 1999)

#### **4. Rotterdam in social – economical and spatial perspective**

##### ***4.1 Social economical characteristics***

Rotterdam was vested in 1250 as a fishermen village. Nearly after a century with the building of the old harbour the harbour development starts. The harbour still is important for the city of Rotterdam and for the Netherlands as a whole. In 2004 the harbour and the harbour related industry and logistics had an excellent year. But the labour enforcement gave reason to worry. Especially the number of jobs in the lower educated sectors like retail and hotel services descent. On the other hand the knowledge based sectors that provides jobs for the higher educated enforced. The problem in Rotterdam is the lack of new economical sectors like the high tech industry. Compared to the other three big cities (Amsterdam, Utrecht, The Hague) Rotterdam is running behind. More than half of the jobs are within the sectors business services, health and welfare, retail and transport and communication. It can be concluded that Rotterdam has an economy with two speeds: the so-called wet economy or

the harbour related economy and the so-called dry economy of the city with sectors like business and financial services. The harbour economy cannot mark its growth on to the economy of the central city. And also the cities labour market doesn't provide much for the harbour. Spatially the two economies don't relate the harbour is moving further out of the central city.

A relatively large part of the potential labour population in Rotterdam compared to other big cities is a not western immigrant. And also Rotterdam has a very young labour population: on January the first 2004 20% of the potential labour population was under 25 years of age. The group between 25 and 39 has shrunk with a 3%. With this the education level of Rotterdam itself and in comparison to the other three big cities is rather low. More than 30% of the population has a low education level. This is the same as the people with a higher education degree. If this all these characteristics are set off against the unemployment it is seen that the characteristics of unemployed people are not western immigrants and lower educated. Another characteristic of the unemployed is also longer registered unemployed (> 3 years). (Development Company Rotterdam, 2005)

#### ***4.2 Spatial economical characteristics and policies***

Rotterdam has twelve so-called 'deelgemeenten': smaller elected governmental units. In Rotterdam there are certain vulnerable parts. With vulnerable I mean areas where the lower incomes rates and unemployment rates more than average. In Delfshaven, the old part of Noord, Feijenoord and Charlois this is the case (see figure1). Also the longer unemployment rates are above average: more than 15%. In Delfshaven, Feijenoord and Charlois live 35% (situation on the first of January 2006) of the people. Also 35% of the housing stock is situated there (situation on the first of January 2005). In Delfshaven, Noord en Charlois the percentage of not western immigrants is the same as in the rest of the City, approximately 40%. In Feijenoord this is 20% higher. Also the population is a little younger than average in Rotterdam. The share of lower educated people is also much higher than the average. And also the share of higher educated people is much lower than average. In Charlois the share of lower educated people is higher than the average but it is not so bad as in Feijenoord. The share of higher educated people is the same as in Feijenoord. In Delfshaven the share of younger people is much higher than average. Most of them are not western immigrants. But there are the same share of lower and higher educated people in Delfshaven. In Noord the people have higher education than the average of Rotterdam, but the part that is dealt with has higher than average lower educated people. (Center for statistical research Rotterdam, 2005)



In these neighbourhoods the housing stock is for more than 50% classified as vulnerable (rent and home ownership). Big parts of Delfshaven, Noord, Feijenoord and Charlois are built in the early twentieth century. The houses in this area were built for the workingmen: small houses in relatively high density.



**Figure 1: The neighbourhoods of Rotterdam**

The government of Rotterdam is setting its mind frame on the middle and higher incomes and the higher educated people. For that they also want to build more living environments for these groups. And with a greater share of houses for these groups Rotterdam hopes to have a competent position in the regional housing market. For the housing stock this means that the vulnerable areas of Feijenoord, Charlois and Delfshaven needs to be completely restructured. For Noord it means that only the old part needs to get restructured. These areas are also dealt with in the Water City 2035 concept that I will describe below.

#### **4.3 The big living research**

In 2004 Rotterdam held a big research among 12.000 inhabitants of the greater Rotterdam area. This was the biggest research of its kind in this area. It gave insight in the preferred housing products. The research led to the definition of six segments based on four types of consumers. The four types of consumers are: the red world where people want to be part of the vibrant urban life, the blue world which is characterized by space but in close relation to the urban life, the yellow and the green world are more traditional and neighbourhood oriented. The six segments are: Comfortable, Cheap housing, Exclusive, Urban, Urban single-family housing, Regular single-family housing.

Some of the most important conclusions were that a lot of people still want a single-family house near the city. There are more people who want this kind of housing than Rotterdam can offer at the moment. Especially in the south of Rotterdam where the neighbourhoods of Charlois and Feijenoord are situated there is a gap between what people prefer and the current stock. For Rotterdam this leads to an outward movement of middle and higher income households. Another conclusion is that keeping the middle and higher income

households is much easier than attracting new households. The neighbourhoods of Charlois and Feijenoord are seen as big challenge areas because the neighbourhoods have also social problems. And the middle and higher income households are not satisfied with their situation. But keeping these households is seen as important for the liveableness of the area. The chances are its closeness to the city of Rotterdam. Therefore it is a good place for single-family dwellings. (De Grote Woontest, 2004)

### **5. The function and value of water**

In the earlier days water was most of all for economic importance. In Rotterdam big sea ships came into the city looking for place to ship their cargo. But water also served as public space. It was in this city where the place called the Boompjes – the embankment near the river - from the 19<sup>th</sup> and 20<sup>th</sup> century on served as a boulevard. Especially on Sundays the place was so crowded it was more like a parade. Nowadays water has many more functions. Since people have more spare time they are looking for ways to relax. In general water activities like sailing, (kite) surfing are growing in numbers. In Rotterdam the leisure side of water is also more and more commercialized. In summertime you can enjoy the sun and have a drink on the so-called city beach. The water is more and more used as event side for concerts, the Ocean Volvo race, and large cruise ships like the Queen Mary 2.

Today's water is also seen as an identity builder. Rotterdam also feels that water can add quality of life to the city. But what is seen now is that relatively few houses are facing the water. Also the mental map of the shows that people only know the river Maas as it runs through the city. The harbour is too far from people's ordinary life. And the water in the city is not well known. If we follow the experts who dealt with this, it's a shame and the tide needs to be turned. People must again experience the water.

Water is also has an economical value as it goes for housing. What is seen is that when dwellings have water in their nearby presence the prices rise immediately. This goes especially for old houses in harbour or canal areas in the city center. But also the dwellings in suburban areas are more expensive. When dwellings are near water it is also always presented as a quality in the housing advertisements of the house agents.

Also from the notions from the literature it can be concluded that if quality is successfully added the prices in the area rise. Water in this sense is nowadays seen as a quality. This can also be deduced from the conclusions of the big living research. So for Rotterdam this can be the lucky card for the future of the city.

### **6. Water City 2035 Rotterdam**

The Flood was the main theme of the second during the Architecture Biennale of 2005. The content of the master case of the Biennale is created on the basis of a joint vision by experts of various disciplines. During the process of the master case the experts have one question did in mind: What would Rotterdam look like if water in the city was not considered to be a problem but an opportunity if water is taken as the starting point?

The river Maas runs through the hart of the city. The government wants to position the river as icon for the inhabitants of the city and for visitors and investors. Therefore it is physically, historically and programme-wise used as an opportunity for metropolism. The water and the Maas must – in the eyes of the government – become the identity of the 'new' city in which problems are seen and dealt with as opportunities.

In the concept Water City 2035 (see figure 2) two design tasks of the (near) future are intertwined: the task of the water management and the urban development task.





**Figure 2: the concept of Water City 2035**

For the water management task the concept Water City 2035 is based on the (nearby) future situation that the climate is changing and the average temperature is gradually increasing. Also in future times the wet and dry periods will be longer. This causes more and more intensive showers so the sewers and the surface water like the river and the canals can hardly manage the incoming water. That is why the water management system will reach its limits. On the other hand Rotterdam also deals with ground water problems. The soil is sinking because the northern part of Rotterdam is built on peat. An other problem is the rising of the seawater. If this will be more than the estimated approximately one meter during this century it won't be a problem, but if the sea rises more it will be. Summarizing: Rotterdam deals with four different types of water: water from the sea, water from the river, rain showers and water from the soil. These four types of water have their own management system. Water from the sea comes together in the river system. This is laid in the outer dike area. The second system is the inner polder system that is influenced by the water from the rain showers and the soil. The dike manages (and protects against) the water from both these systems.

The urban development task is for the most part a social and an economical one. As I described before the population of Rotterdam is very one-sided especially in certain parts of the city and also the city's economy is not diverse, the main economic accelerator is the harbour of Rotterdam that ranks within the top ten of worldwide harbours. Relatively a large part of the people living in Rotterdam have relatively a low income and are also poorly educated. So the people and with it the city is relatively poor. The aim is to get more diversity into the population and the sectors that form the city's economy. Housing is to be thought crucial to get the transition to start. The housing therefore has to match the housing wishes of the people. Not only to attract them to the city but also to keep them there for several

years. So insight in their housing carrier is important. Different concepts like building in high densities in the city contrasted with explicit suburban or village like neighbourhoods are thought to be the solution. But the quality of life is not only decided by the housing. Also the services and the accessibility of green and recreation parks must part of the integral concept (within the physical domain). The urban development task and the water management task are combined in the three images of *Water City 2035*: *River City* in the centre, *Waterway City* in the south and *Canal City* in the north of Rotterdam.

In the concept of *River City* (figure 3) is dealt with the insecurity and the dynamics of the river system. So the threats are acknowledged but the opportunities are fully explored. The river is seen as an urban area for different living and working environments. It is seen as a change for inner city development. Some places offer a real urban environment, other sides have very low densities. Living environments are for example jetty houses, terp houses, houseboats and fortresses. By public transport on the river every little urban settlement can be reached within ten minutes. Because of the adaptive strategy the dike will be transformed into a dynamic development zone and dynamic space to be as adaptive as it needs to be.



Figure 3: References of River City

The concept of *Waterway City* (figure 4) the south bank of Rotterdam is completely transformed. The south of Rotterdam is an area where restructuring is already the today's practice. The garden city concept of the 1920's – 1930's needs a complete make over. The south of Rotterdam is recognised by it's one-sided housing stock, mostly small apartment like houses. As said before a large part of the stock is social housing. This could a change for the area to create a complete new living environment where every house has a (smaller or bigger) waterway his backyard. Rotterdam wants to create there own specific suburban living area. To realise this there needs to be designed a very tight system of waterways. The high-density structure which is characteristic for that part of Rotterdam will be gone after the restructuring is completed.



Figure 4: References of Waterway City

In the north of Rotterdam the most neighbours have proven themselves. It already has a lot of potential. At some places this is fully utilized. At the territory of *Canal City* the operation is not as substantial as in *Waterway City*. This part of the city will even become greener than it already is.



Figure 5: References of Canal City

When it is 2035 the housing stock is grown enormously in Rotterdam. More density is brought into the city and in the river, approximately 30.000 new houses will rise in this area. Big parts of the housing stock in the south will be replaced. There will be 10.000 houses less rebuilt compared with today's situation.

The results of the big living research where also used in the development of the concept Water City 2035. And the results will also be used for the designs which have their origin in for example in the Water City 2035. This is especially the case for the transformation of the south of Rotterdam. This operation is bigger than the neighbourhoods Feijenoord and Charlois of which I spoke before.

## **7. Conclusion**

I started this paper with a little history. A history in which attracting and keeping richer people has been very prominent. And it still is a goal for the government. But it is shifted towards differentiation in the current policy. And it also is in the concept of Water City 2035. The main thought behind this is differentiation of people and economy lead to a healthier city with higher standards for the quality of life. As shown along the line of literature is that housing and restructuring are seen as the solution for social problems. With the restructuring quality of a special kind is added to the city: water. The question I raised in the beginning was 'what will happen to the original poor population if the medium and higher incomes will be attracted to the city as a result of the restructuring? Where will the poorer part of the population live? Will this part of the population get more disintegrated or even isolated? And what can policy do? These findings I will mirror to the concept Water City 2035 to see what I think are the good parts and the more vulnerable parts of the concept.

What is positive about the concept that the whole city is taken into account and that the city has an high ambition. By defining the strength and weaknesses of all parts and define the ambition it is better to set out the strategy to make it possible. Another positive thing is that the government has insight in the environmental preferences of people. The big housing research showed this. Based on this and on the literature this is a very important instrument to use in a restructuring operation. I think it is the duty of government to look after especially the vulnerable group, also because of the ever-growing influence of the free market. With this it is also positive that social cohesion is not a goal in it self. The diversification of the population is not spatially translated into diversity within neighbourhoods. Homogeneity is not really taboo. From the literature can also be concluded that homogeneity is more realistic and therefore can be more successful. In relation to the two former positive things is the planning concept itself: it is not a blue print. It can be – as it is to water – seen as an adaptive concept. Adaptive must mean that there needs to be a goal developed for the vulnerable group. Adaptive also means that physical measures are not the only one. If the well being of the vulnerable group is set on the agenda housing must only be one part of the strategy. Housing alone is much more an instrument to attract or stay attractive for higher income groups. Education and working programs are more important to the well being of the vulnerable group.

The concept of Water City 2035 has some elements that can lead to forget the already forgotten group: the lower income, lower educated and unemployed people. This is especially the case in the south of Rotterdam for instance the neighbourhood Feijenoord and Charlois. A high percentage of the population in this neighbourhood is vulnerable: a high percentage of unemployment and this group has some characteristics that are not in favour of this situation. And also compared to the total population of Rotterdam it's a big part – 35%. On the other hand this group is spatially concentrated and populates 35% of the worst maintained houses in Rotterdam. In the concept of Water City 2035 in this part of Rotterdam the biggest restructuring operation is planned. The restructuring ambition for this part is clear; the government wants to give the better off (middle and higher incomes) better housing carrier opportunities in their neighbourhood. But with this biggest part, the vulnerable people

are forgotten or at best not mentioned. This is also clear from the houses that are thought off there: the more suburban like environment. Also the rest of the concept is written from an exclusive and opportunity point of view. The focus therefore can easily shift from differentiation in population to homogeneity related to income. Although the housing environments presented in the concept show a colourful pallet the biggest part will be for the middle and higher incomes.

Another vulnerable thing is that by focussing on the spatial economical motive it is thought that proving of the housing stock is also a way of improving the quality of life. And this quality of life is expected from the water: the waterway concept. In this restructuring ambition there is also tension between the long lasting image of the neighbourhood and the strong believe in the physical empowerment of the water. The question will be if this ambition can become reality, because of its image problem. What makes it even more complex is the scale of the area. In my opinion the physical measures will have to be drastic to improve the quality of the urban environment. I believe water certainly does have a more than average effect on the quality especially on the house prices. If the operation turns out to be too big and too complex the vulnerable group it directly affects the most vulnerable group. But in case it succeeds a part of the population will be re-housed in the neighbourhood, a part can't effort the new housing and more than 10.000 households need to find a new neighbourhood because 10.000 dwellings won't be rebuilt. And it is very good possible that these dwellings disappear in the parts where the most vulnerable people live. So for more than 10.000 households the government needs to find new housing! Although these dwellings are not needed at once it is an operation that must not be underestimated. So when the forgotten group is forced to move to forgotten places or when the restructuring fails disintegration or even isolation lie in wait. But there is also empirical evidence found in literature and described above that can make a plan work.

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