Gentrification and urban design in the urban fabric of Rotterdam

Received (in revised form): 16th May, 2017

Paul Stouten

works at the Delft University of Technology. He has published books and films about urban regeneration and urban development and contributed to international journals. He is involved in the Masters programme of urbanism on urban regeneration, strategic planning, socio-spatial processes related to urban design, sustainability and feasibility studies. In addition he has lectured at several universities and has held the posts of visiting professor and external examiner. He has also participated in practical urban renewal projects involving residents.

Abstract In the last decade, urban regeneration, as a combination of urban design and gentrification, has been established in many districts of the city of Rotterdam. The transformation from industrial to post-industrial urban economy concerned neighbourhoods enclosed by former port areas that changed into residential areas and urban facilities. The peninsula, Katendrecht, is part of place-making for new markets of new population groups and requires supporting facilities for flagship projects. This reflects the more general landscape of European urban regeneration. Central and local government and housing associations are aiming to reduce the share of social housing and increase the market sector in collaboration with private developers. Gentrification is launched as an instrument for creating new human urban environments, tackling violence and addressing problems of low quality of life. Although the gentrification strategy results in greater safety and lower crime rates, by contrast socio-spatial divisions occur between the old neighbourhoods and the newly built housing projects. The plans for providing a new human environment, driven by state-led gentrification, will reinforce these socio-spatial divisions.

Keywords: urban design, gentrification, urban regeneration, human urban environments, planning strategies

> strategy to reflect the urban fabric. Diverse urban design specifics are launched to

attract middle and high-income groups

located next to the well-known public/

private-managed project Kop van Zuid

on the Wilhelminapier (see Figure 1).

to the city. Katendrecht is a peninsula

INTRODUCTION

'Cities do not arise by themselves and do not maintain by themselves. They are built and not grown spontaneously by nature. We cannot leave cities to their "natural" devices. If we do so ... then threaten decay and pauperisation and in the long run even

Urban regeneration as a combination of urban design and gentrification was established during the mid-1990s and is still on the agenda of cities all over Europe.^{2,3} In the light of this context, Rotterdam represents a city where, with the aim of creating a social mix, gentrification is seen as an important

destruction.'1 According to the urban plans of the municipality, it has become part of this flagship project. This has resulted in a fundamental transition of the social fabric, because Katendrecht was based on the urban renewal approach embedded in the context of the Dutch welfare state. New urban design schemes in Katendrecht strongly reference the buildings on the Wilhelminapier, on the opposite side of

Paul Stouten

TU Delft, Faculty of Architecture and the Built Environment, Building 8. Julianalaan 134, 2628 **BL** Delft PO Box 5043, 2600 GA Delft, The Netherlands Tel: +31 (0) 639251091;

E-mail: p.l.m.stouten@

tudelft.nl

the water, promoted to increase liveability but which will profit from the completion of the newly created residential environment. This paper questions what is the impact of urban design after creating a new human urban environment as result of the restructuring process of the urban fabric. The urban design process of Katendrecht demonstrates the advantages and disadvantages of this kind of strategy in a changing context following an economic crisis but still in the age of austerity.

For the analyses, we discuss the differences between the current residential groups (indigenous and new settled residents), the social and spatial characteristics that provide satisfaction with current living conditions and the relationship between residential mobility and gentrification. The analyses are based on five studies, 4,5,6,7,8 data of the municipality of Rotterdam and interviews with local urban planners who were involved in the project. What makes this case interesting is the interaction between political aims and the perceived qualities of the urban design and regeneration process.

The structure of the paper is as follows. After discussing urban restructuring, urban regeneration and urban renewal, and human urban environments, we chart the strategies of gentrification as an instrument for urban regeneration. The following section considers urban design and strategic planning as it is promoted by the local government of Rotterdam. Finally, the last section explores the urban design and strategic planning processes in the Katendrecht area.

URBAN REGENERATION, URBAN RESTRUCTURING AND URBAN RENEWAL

In Rotterdam, urban regeneration with new interventions and additions to the urban fabric, along with changes in the production processes, led to another status of neighbourhoods adjacent to and within the former urban renewal areas of urban renewal action plans in the 1970s and 1980s.9 Economic restructuring and profound changes in the labour market gave new dimensions to urban deprivation and segregation. Urban regeneration strategies seek to resolve urban problems by combining physical, economic and social restructuring, re-engineering and re-invention of the city-region connection¹⁰ with dimensions broadly described as economic, social and cultural, physical and environmental, and governmental by nature.11 The role of local authorities has become increasingly marginalised as national government policies began to stimulate planning in partnership with private investors in order to regenerate the economy. This allows settlements of service industries and urban design-led action plans to change existing urban areas through strategies that emphasise high-density mixed use, but also displacement of low-income households. In the Dutch context, it is important to note the differences between urban regeneration, urban renewal and urban restructuring. Urban regeneration concerns the general design and planning of a city and region as a whole, while urban renewal and restructuring is more area-based. Urban renewal is driven by improvement, maintenance and modernisation of neighbourhoods of the existing fabric, while urban restructuring is focused on transition and complete changes of function and infrastructure.¹²

The existing urban and social fabric of the main Dutch cities is a result of the vast urban renewal programmes with a social objective executed in the period 1975–93, which placed a high priority on the improvement of living conditions, housing and provision for existing residents.¹³ A strong welfare state

developed strong tenant rights and a very high share of social rented housing in general and particularly in the large cities: 42 per cent of the total housing stock of the Netherlands and 58 per cent in Rotterdam in 1990. Housing associations are also an important agency in meeting the housing needs of lower and middle-class households in the urban housing market, but the market-driven policies of the last decade have led to the erosion of social rights and conditions, which should not be ignored in urban regeneration processes.

Compared with the UK and the USA, segregation in the Netherlands is low. This is mainly a result of the high share of social housing owned by housing associations. Despite the low figures of socio-spatial segregation, social mixing and gentrification has a high priority in urban regeneration programmes. In the mid-1990s the central government launched a policy of 'housing differentiation' by adding more expensive dwellings to lowincome neighbourhoods, after removing affordable dwellings in combination with the sale and modernisation of existing social housing. The central government selected and defined so-called 'priority' areas in 2003 that were later redefined as 'empowerment' areas. At the same time the municipality of Rotterdam selected 19 neighbourhoods, including Katendrecht, for restructuring. Before the global financial crisis and economic recession, in 2007, the city council decided to build 14,000 new homes by 2015 and 13,000 houses were to be demolished. For the completion of this plan, the municipality, housing associations and sub-municipalities agreed a total investment of €3.8bn.

URBAN DESIGN OF HUMAN URBAN ENVIRONMENTS

In the past decade, the design of human urban environments has been a high

priority on the urban agenda. Punter¹⁴ defines urban design as:

'the art of making places for people. It includes the way places work and matters such as community safety, as well as how they look. It concerns the connections between people and places, movement and urban form, nature and the built fabric, and the processes for ensuring successful villages, towns and cities.'

It is about injecting a design quality and 'place-making' dimensions by the local government. The key issues in designing spatial qualities are the infrastructure needed for accessibility of an area, connection to the rest of the city, the layout of the public space, the 'architectural' typology of the buildings and the programme related to the function of the buildings.

Although the city of Rotterdam uses the concept of creating residential environments (woonmilieu) as an instrument for urban regeneration and restructuring, in the context of this paper the concept of 'human urban environment' is more useful. Roberts, Ravetz and George¹⁵ refer with this term to Glikson's 'human environment', which he describes as 'the space that surrounds human movement, work, habitation, and interaction'. This concept stresses not only the residential environment but also the work environment, interaction with human movement and habitation. Economic restructuring is actually the main driver behind city changes.

The planning and design of new human urban environments have to adapt to new conditions and requirements caused by changes in the social fabric by considering a number of key transitions. Information processes play an important role in the race to increase productivity in all processes concerned with production, consumption and management. Often, these processes are connected to the

creative sector. Social and economic polarisation occurs around a large proportion of the new growth industries. with their vast direct and indirect demand for low-profit services and lowwage jobs. This creates flexible labour conditions and a rise in self-employment, which is in conflict with the aim of attracting high-income groups. Since the financial crisis, these transitions involve an ongoing process of modernisation of the urban fabric, building structures and infrastructure. There are strong criticisms of city branding, 'quarterisation' and urban design as an agent of gentrification. A number of global issues have to be considered within the urban regeneration and design processes:

- Changing demographics have resulted in more single-person households, leading to a rise in demand for housing.
- With the launch of 'creative cities', municipalities are aiming to attract or retain higher-educated and higherincome groups within their boundaries.
- Quality of life, including a wide range of provisions, has become an important factor for enterprises and their employees.
- Travel time to the suburbs has become longer, due to traffic congestion.
- A growing percentage of the population does not wish to live conventional lifestyles in suburban semi-detached houses.

These processes and design challenges are enabled by local governments and driven by gentrification processes. The next section discusses the impact of state-led gentrification on strategies for modernising the urban fabric.

STATE-LED GENTRIFICATION

The process of gentrification, in its early stages, is revealed as incidental and an

anomaly on the housing market and city development. Since the mid-1990s, gentrification has become much more generalised as an urban strategy and its impact is more globalised.¹⁶ In the light of the strategies, gentrification is increasingly promoted as a process that will lead to less segregated and more sustainable communities¹⁷ and has long been associated with the aim of increasing diversity and difference in the social and urban fabric, including social mixing. Jones and Evans¹⁸ define the essentials of gentrification as 'the process by which buildings or residential areas are improved over time, which leads to increasing house prices and an influx of wealthier residents who force out the poorer population'. This reflects the main concern of this paper: the impact of urban design on the urban regeneration process driven by gentrification. Gentrification covers a wide range of strategies, from restructuring and privatisation by demolition of social rental housing to upgrading and modernising the existing urban fabric, summarised in the Dutch context by two different approaches. The first strategy is an aggressive policy that mixes neighbourhoods in social and economic terms after removing a significant share of lowincome housing through eviction and harassment. 19-25 In the second approach, gentrification proceeds slowly, by the sale and modernisation of existing social housing rather than by force. Lees²⁶ found evidence of gentrification-induced displacement in riverside wards along the river Thames in London due to newbuild gentrification. New-build expensive housing can also have price-shadowing effects on the surrounding areas by increasing rent and prices.²⁷ Atkinson²⁸ summarises 'positive' and 'negative' neighbourhood impacts of gentrification. Municipalities stress positive impacts such as social mix, poverty dispersal, rise of

property values, tax revenues and local services, because they increase liveability. But the most striking negative impact is de-cohesion by resentment, conflict and displacement by demolition, upgrading by merging housing, and the rise of house prices, all of which make it impossible for existing residents to stay in their neighbourhood.

During the last decade, Dutch housing associations have scarcely invested in new builds or modernisation of housing. In the Netherlands in general, the financial situation and housing production of housing associations has been seriously hit by new central government levies, vielding about €2bn in 2017. Housing associations are forced to increase rents on a large scale in order to gain a proper financial balance. Nationally the composition within the social rental sector has changed profoundly, with the share of low-cost social rental housing declining from 23 per cent to 15 per cent and the share of more expensive social rental housing increasing from 9 per cent to 20 per cent. At the same time the number of households that urgently need social housing has increased by 3 per cent.

Although gentrification sometimes occurs spontaneously, it is mostly driven by policies to attack social decline and physical decay and to increase liveability and quality of life as a strategy to upgrade the economic situation in urban areas. In Rotterdam, as in other main Dutch cities, there are strong calls for dispersal of poor households, dispersal of immigrants and the creation of mixed communities. The municipality aims to prevent low-income groups from getting access to deprived, 'vulnerable' neighbourhoods. This arrangement by law excludes particularly ethnic minority groups because of the much higher share of low-income households among these groups compared to the share of low-income households in the native Dutch population.

But, compared with the US and the UK, segregation is low and heterogeneous sections of the urban population still make use of social housing.²⁹ There are large volumes of literature that reveal and discuss the evidence for whether gentrification, social mixing and social diversity increase the cohesion between different social groups and whether the quality of life has been or will be improved. It is concluded that these strategies profoundly influenced and harmed the social fabric through household displacement and by creating conflicts within tightly knit communities. Tensions between the existing households and the new influx of people depends on the context in which urban design, as part of urban regeneration and renewal, evolves.

THE FUTURE OF THE CITY OF ROTTERDAM: WOONVISIE 2030

The current post-recession gentrification policies follow the plans of the city of Rotterdam before the credit crunch, which made reinvestment in the inner city attractive for investors. The policies introduced a period dominated by economic competitiveness between cities on the national and international level and attempted to decrease the mismatch between the commuting figures and the current population. There was a large construction of housing for higherincome households, along with vast modernisation of infrastructure and public transport. New underground railways and road connections between riverbanks were constructed, creating a modern skyline that transformed Rotterdam into a global city with highly specialised tertiary, finance and tourist sectors. In 2016, new ports were completed on the coast about 30km from the city centre. In recent decades, when there was a boost in employment, predominantly commuters

profited and most of the present city population was excluded. Between 2008 and 2014 the employment figures declined by a total of 22,000 jobs, while the demand for housing from professional, higher-educated and managerial employees is rising. This change in demand results in displacement in old neighbourhoods and new-build housing on former port areas and abandoned brownfield sites. Today, it means a combination of classic patterns of gentrified housing: converting industrial or warehouse space into space for living or small workplaces for the 'creative class' as part of a much larger restructuring scheme.

Since 2007, due to the financial crisis and liberal policies, more people are working in self-employment with lively and volatile interaction between small businesses as result. In Rotterdam, 22 per cent of working people have a flexible employment contract, of whom 50 per cent is looking for a permanent job. Starters on the labour market, particularly among the enterprises that survive, serve as fresh and young blood in the urban economy.

In 2016 the situation of the labour and housing market changed. In the main Dutch cities, the price of housing rose to reach the level before the crisis. The accessibility for middle-class households to the housing market is even more difficult since the crisis, because to get a mortgage requires a regular job and own funds, mostly between €50,000 and €70,000. The price of housing has increased more than wages. Recently, unemployment has begun to fall, but in Rotterdam the figure of approximately 12 per cent unemployment (in 2015) is still high. A significant number of unemployed will be dependent on social benefits because they are not sufficiently qualified and do not meet the new requirements of the labour market.

The debate on the Woonvisie,³⁰ as decided by the city council in 2016,

characterises the current situation of state-led gentrification as an instrument of urban regeneration. The local government is aiming for a high-speed upgrading of the city by decreasing the majority of social housing in the housing supply. The demolition of 10,000 houses is planned for this upgrading through to 2030. In the remaining housing stock, housing will be modernised, sometimes by merging original dwellings, which will push them to a higher level on the housing market. According to this plan, 20,000 houses earmarked for demolition comprise inexpensive housing stock, which is more affordable for low incomes, and will be replaced by 35,000 more expensive properties. The situation of the displaced households is very uncertain, particularly when the municipality of the city of Rotterdam claims it will move them to other municipalities in the region. The uncertainty for low-income tenants will be reinforced by the extra rent increase as result of moving to another house.

The intention of housing associations in the transition of tenure from social towards more market orientation is questionable. The municipality expects that housing associations will buy lowpriced housing and bring them up to a higher bracket on the housing market. because modernisation should lead to economic revalorisation and the opportunity to demand higher marketrelated rents. After merging small-sized housing, modernisation and demolition, the ultimate growth of the housing stock will be a maximum of 16,000 dwellings. On the other hand, this number does not meet the current and forecasted housing demand. For instance, in 2013, 56 per cent of the households in Rotterdam had a low income. In its more marketdriven policies, the municipality aims to stimulate the private rental sector. This is a very questionable intent, because it is this type of tenure that illustrates

serious problems such as property milking, maximising rental income through overcrowding (sometimes by day-sharing) and disinvesting by avoiding expenditure such as maintenance, utilities and energy savings. Therefore, investments have to be reserved for overdue maintenance and the remaining budgets are too small for fundamental modernisation and economic revalorisation.

The desire to live in the city has a stronger correlation with professional and educational levels than on income. The influx of highly educated people does not always correspond with higher income, one example being the 'creative class'. Despite efforts to keep highly educated inhabitants within the city, most people that leave the city have a jobrelated income that is higher than the new urbanites. Most of the gentrifiers are exclusively moving within the city.

KATENDRECHT

Introduction

In 1895, the municipality of Rotterdam incorporated the village of Katendrecht for digging ports. After the construction of two ports and the demolition of the old village, a peninsula remained and the housing stock built for the workers in the port industries was cordoned off by railways that support the loading and unloading of ships. The built environment in the old centre was notorious for alcohol abuse, prostitution and violence, and also housed the largest Chinese community in the Netherlands.

Katendrecht was one of those previously selected as a priority area in 2003 and part of the vast urban renewal approach in the period 1975–93; in the last decade it has been embraced as one out of four identified project schemes of Kop van Zuid (see Figure 1). The current urban design and plans concern forms of

residentialisation identified by a transition of old derelict industrial port sites to new housing developments. The municipality aims to create a new human environment as a compact centre on the former port banks and improve the liveability as a 'creative mixed' neighbourhood, banked with green areas, densified, tight provisions, and attractive public spaces for new urban higher and middle-class households, families and singles. The main agencies for development are a real estate developer and a housing association, with the local government to enable procedures and provide means for the execution of public spaces and improvements to the connectivity — one example being a new bridge for pedestrians and cyclists between the flagship project on the Wilhelminapier and the Katendrecht peninsula.

The possible conflicts caused by the trickle-down effects of the Wilhelminapier project, driven by gentrification as an instrument for the empowerment of urban renewal areas in social decay, were important for selection of the Katendrecht case. In this neighbourhood, the following projects are to be found: social housing completed in the golden age of social urban renewal; new owner-occupied housing; and the transition of social housing into owner-occupied housing by homesteading. The five studies^{31–35} show a diversity in methods. Together they deliver a representative landscape of the impact of gentrification and urban design on the urban fabric. One study³⁶ was based on in-depth examination of residents who had lived more than ten years in the area. A second study³⁷ combined in-depth interviews with newly settled residents living in new owner-occupied housing with observations by participants. In this research, the in-depth interviews were also tested against oral history as published in newspapers and on television programmes. A third report³⁸ concerned a survey of owner-occupiers of new housing, which

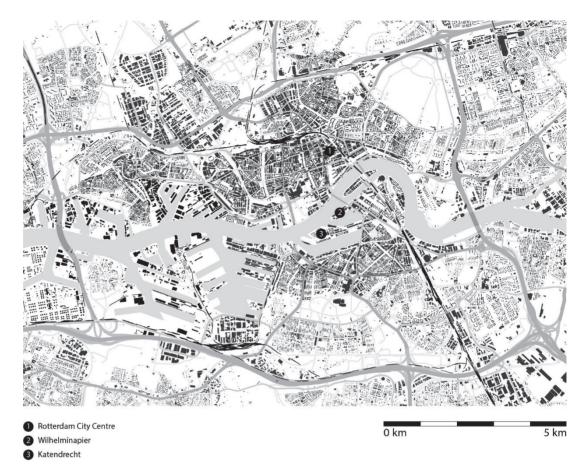


Figure 1: The spatial context of Katendrecht

sought their evaluation of changes within the human environment. The survey was conducted digitally by e-mail, Twitter and Facebook, and by slow mail. Another two studies^{39,40} focused on the new residents of homesteading projects in the owner-occupied sector. The first of these⁴¹ carried out its research through in-depth interviews and the second⁴² analysed changes in the property values and the social fabric of the neighbourhood due to the homesteading programme.

URBAN AND SOCIAL FABRIC

In response to the actions of the local tenant group, the municipality launched an urban renewal in 1975, as part of the 'building for the neighbourhood' strategy focused on pre-war areas.⁴³ After

the purchase by the local government of privately owned housing, almost the total old housing stock (800 dwellings) of the neighbourhood was modernised by housing associations and eventually all the whorehouses were closed. About 750 new social rented houses were built to fill in some ports. Besides a new school, a new community centre and business centre was completed.

Although the building for the neighbourhood strategy in the period 1975–90 led to minimal displacement of the original population, many socio-economic problems were not solved. Despite enormous changes and investments in the urban fabric, there was still a high degree of unemployment (40 per cent), a concentration of low-educated people, an increase of criminality and a

lack of safety. The unemployment figure was double that of the overall city. At the beginning of the 21st century, Katendrecht became part of a wider restructuring programme launched in the south of Rotterdam. For Katendrecht, three stages for completion of the urban plans were indicated. First came the improvement of the infrastructure, public space and the decision, as previously mentioned, to complete a new bridge for slow traffic between the Wilhelmina pier and the neighbourhood, which was completed in 2012. The second stage was driven by the modernisation of the old neighbourhood again, because remodernisation of some projects and the public space in the middle of the old neighbourhood, carried out in the former urban renewal period, was seen as necessary. At the same time, new owner-occupied housing was built to attract families, young professionals and artists as part of the 'creative class'. Businesses were selected on three criteria: culture, creativity and culinary, and smart new restaurants enhanced the gentrification process.

The SS Rotterdam, a refurbished ship of the Holland America Line, as a permanent provision for hotel and restaurant facilities and pocket theatres underpin the aims to stimulate culture and tourism for this area. In the old centre of the neighbourhood, two small social rented housing projects were sold to owner-occupiers to kickstart an experiment in homesteading and collective housing.

A block of 79 social housing units, built in 1979, was demolished in 2008 because the design featuring dark corners and a gateway encouraged vandalism. The next stage began with a new human environment completed on the brownfields of former port industries with a total scheme of 2,400 dwellings, of which 1,600 will be completed after 2016. The first project included owner-occupied terraced housing and the transition of

former warehouses into luxury apartments with ground-floor facilities for small businesses has already begun. Another key project was also launched according to the design of 2007. This concerns the recommencement of building the European Chinese Centre with space for housing, shops, offices and leisure driven by Chinese trade and products. A few years ago, only the foundations and the floor of the parking garage were completed because one of the initial investors had withdrawn. The building of the new Chinese Church chimes more directly with the heritage of the Chinese community. The housing stock of Katendrecht has changed fundamentally from the strategy of new-build housing on the former brownfields accessible for middle and higher-income groups; since 2000 the housing supply has increased by 30 per cent. In the same period the share of owner-occupied housing has increased from 1 per cent to 32 per cent, reaching the level of the total of Rotterdam (34 per cent in 2016); the share of the social rental has decreased to 56 per cent, which is nevertheless 10 per cent more compared to the total of Rotterdam.

In the homestead housing projects, completed in the former modernised social housing, most of the newly settled households are young creative entrepreneurs such as architects, artists and suppliers to the creative industries, with mixed effects that have not met the expected integration within the neighbourhood.44,45 In the newbuild housing projects on the former brownfields, the dominant households are categorised as two-earner families. Most of the influx contained higher-educated (74 per cent vocational or university) high or middle-income households of total 55 per cent, showing a different picture from the general characteristics of the neighbourhood, which is 60 per cent low-income households and 33 per cent

low-educated. 44,47,48 About 70 per cent moved from other parts of the city and only 15 per cent from the municipalities of the region of Rotterdam.

The aim of the municipality and housing associations to increase the share of middle and high-income groups and the 'creative class' has succeeded. Between 2002 and 2016 the share of households belonging to the highest 20 per cent of income per household increased from 4 per cent to 16 per cent, while over the same period the share of the total of Rotterdam stayed at virtually the same level of 16 per cent. On the other hand, in the same period, the share of households belonging to the lowest 40 per cent declined from 71 per cent to 56 per cent compared to Rotterdam, which remained at nearly the same level of 52 per cent in 2016.

The social fabric, in 2016, reveals a changed neighbourhood, with many singles (42 per cent) compared to the total of Rotterdam (47 per cent), oneparent families (13 per cent; Rotterdam 11 per cent) and (un)married parents and children (24 per cent; Rotterdam 19 per cent). Only 47 per cent of the population is Dutch compared to the total of Rotterdam (55 per cent). During the financial crisis, in the period 2008–14, the number of persons dependent on social benefits increased by 2.1 per cent, which is much lower than the rise in the total of Rotterdam (30 per cent). During the urban regeneration of 2009-14, the number of businesses and shops increased from 124 to 172, resulting in an increase in local jobs.

Changes in the social fabric have led to improvements in social safety; the safety index increased from 6.3 in 2005 to 9.0 in 2011, although the number of registered crimes increased by 10 per cent in this area in the period 2008–13 compared to a decline of 12 per cent in the total of Rotterdam. According to the response

of the current inhabitants, social mixing does not show positive feelings in all aspects. Despite the vast changes in the urban fabric, the new urbanites, mostly middle-class, are not satisfied with the social fabric; 80 per cent are satisfied with their dwelling and living environment but not with the neighbourhood itself. In order to keep these new urban groups in the area, safety, well-managed public spaces and schools for a mix of children belonging to middle-class and low-income households are required. The moving propensity shows that only 5–10 per cent of inhabitants want to move into a new house within two years, compared to a much higher number for the total of Rotterdam (20 per cent). The indigenous residents experience gentrification, but not so extreme that they have feelings of expropriation of their neighbourhood. Negative opinions are about the new fashionable restaurants not matching with their lifestyle and the lack of affordable housing. Private developers and local government did not take much notice of the desires and requirements of the indigenous residents. These agencies also ignore the protests of recently settled residents concerning the response of current residents to plans for the transition of old warehouses into luxury apartments. The fear of ongoing quarterisation in the urban plans will reinforce the socio-spatial dividing lines in the neighbourhood.

CONCLUSION

Urban regeneration appears to have returned to the agenda of pre-economic recession and global financial crisis, but without a high priority for social renewal programmes. The desired urban regeneration of Rotterdam by state-led gentrification is still largely built on a European model of design using high-density, mixed-use development and providing high-quality public spaces.

The design-led approach is focused on the infrastructure needed to improve the accessibility and connectivity with the major public/private-managed projects. The newly provided human environment contains public spaces with references to port heritage structures, specific architectural typologies with transitions of old warehouses into luxury apartments and place-making for the 'creative class'. In general, the response of the municipality of Rotterdam represents two examples of a city where gentrification proceeds both by force and by smoothly elaborated strategies. It seems that Katendrecht is an example of a strategy by stealth. The current situation in this area is very different from the living conditions of the past, with high unemployment and concentration of low-income groups. The urban renewal of 1975-90 was an important foundation for the next urban regeneration strategies. Gentrification has served as an instrument in the urban regeneration process and shows a process of social upgrading and/or social displacement within limited proportions. But this will change in the near future when price-shadowing effects also hit the social rented sector. New socio-spatial divisions occur that are partially caused by the influx of wealthier residents who are willing and prepared to pay higher housing costs.

The newly provided human environments are fuelled by economic and social transformations. The changes in the urban fabric, based on urban design-led quarterisation with new urban facilities and amenities, respond to the desires of higher-income groups for an improved quality of life. Most of the new influx have moved house within the city and do not come from other municipalities in the region.

Improvements to the connectivity of the peninsula by a new bridge was an important part of the urban design, followed by the completion of new quarters for a new population. Viewing the creative economy as a magic drug for place-making is on the agenda of many cities. But these mostly higher-educated groups do not always have a high income and do not always provide improvements in social cohesion. The policies stress the one-sidedness of social housing in the area as the cause of urban problems, but the main concern should be about opportunities for the current residents to break down socio-spatial barriers and to use urban design to integrate interventions in the urban and social fabric without exclusion. Sustainable development in the plans for the neighbourhood was ignored, but should get a high priority in the future plans. Central government urban regeneration policies accompanied by stimulation of sustainable development remain uncertain, however.

Acknowledgments

My thanks to Herman Rosenboom and Amanda Bryant for their valuable comments.

References

- Ploeg, J. van der (1981), 'Naar een stadsvernieuwingsbeleid' ['Towards urban renewal policies'], in Stadsvernieuwing in Rotterdam [Urban Renewal in Rotterdam], L. A. Klerk (ed.), VUGA-Uitgeverij, 's Gravenhage.
- Gospodini, A. (2002), 'European Cities in Competition and the New "Uses" of Urban Design', *Journal of Urban Design*, Vol. 7, No. 1, pp. 59–73.
- Punter, J. (2010), Urban Design and the British Urban Renaissance, Routledge, London and New York.
- 4. Berkhof, F. (2011), 'De Kaap gekaapt?' ['The cape hijacked?'], Erasmus University Rotterdam, Masters thesis.
- Nienhuis, H. (2012), 'Klushuizen, gentripunctuur in Rotterdam' ['Homestead housing, gentripuncture in Rotterdam'], University of Utrecht, Masters thesis.
- Ent, N. van der (2015), 'Wij hadden een lange adem' ['We persisted'], Erasmus University Rotterdam, Masters thesis.

Gentrification and urban design in the urban fabric of Rotterdam

- Hout, G. (2014), 'Pionieren in je eigen stad' ['Pioneering your own city']. Erasmus University Rotterdam, Masters thesis.
- Heuvel, J. van den (2015), 'Van klusbewoner naar Best Person' [From homestead resident to Best Person'], University of Technology Delft, Masters thesis.
- 9. Stouten, P. (2010), Changing Contexts in Urban Regeneration, Techne Press, Amsterdam.
- Roberts, P. (2000), 'The Evolution, Definition and Purpose of Urban Regeneration', in *Urban Regeneration: A Handbook*, P. Roberts and H. Sykes (eds), Sage Publications, London, pp. 9–37.
- Tallon, A. (2013), Urban Regeneration in the UK, Routledge, Oxford.
- 12. Ibid., note 9.
- Laigre Bohl, H. de (2012), Stadsvernieuwing in de steigers: Stadsvernieuwing in Nederland 1970–1990 [Urban Renewal in the Scaffolding: Urban Renewal in the Netherlands 1970–1990], Bert Bakker, Amsterdam.
- 14. Ibid., note 3.
- Roberts, P., Ravetz, J. and George, C. (2009), *Environment and the City*, Routledge, London and New York.
- Smith, N. (2002), 'New Globalism, New Urbanism: Gentrification as Global Urban Strategy', Antipode, Vol. 34, No. 3, pp. 427–450.
- Lees, L. (2008), 'Gentrification and Social Mixing: Towards an Inclusive Urban Renaissance', *Urban Studies*, Vol. 45, No. 12, pp. 2449–2470.
- Evans, J. and Jones, P (2009), Urban Regeneration in the UK, Sage Publications, London and New Delhi.
- 19. Ibid., note 9.

- 20. Ibid., note 10.
- 21. Ibid., note 11.
- 22. Ibid., note 13.
- 23. Ibid., note 15.
- 24. Ibid., note 16.
- 25. Ibid., note 17.
- 26. Ibid., note 17.
- Atkinson, R. (2004), 'The Evidence on the Impact of Gentrification: New Lessons for the Urban Renaissance', European Journal of Housing Policy, Vol. 4, No. 1, pp. 107–131.
- 28. Ibid., note 29.
- 29. Ibid., note 9.
- 30. Mayor and Aldermen of Rotterdam (B&W) (2016), 'Woonvisie Rotterdam: koers naar 2030, agenda tot 2020' ['Vision on living Rotterdam: Course towards 2030, Agenda till 2020'], Gemeente Rotterdam.
- 31. Ibid., note 4.
- 32. Ibid., note 5.
- 33. Ibid., note 6.
- 34. Ibid., note 7.
- 35. Ibid., note 8.
- 36. Ibid., note 4.
- 37. Ibid., note 6.
- 38. Ibid., note 7.
- 39. *Ibid.*, note 5.
- 40. *Ibid.*, note 8. 41. *Ibid.*, note 8.
- 42. *Ibid.*, note 5.
- 43. *Ibid.*, note 9.
- 44. *Ibid.*, note 5.
- 45. Ibid., note 8.
- 46. Ibid., note 4.
- 47. Ibid., note 6.
- 48. Ibid., note 7.