

Urban Poverty and Gentrification

A Comparative View on Different Areas in Hamburg

INGRID BRECKNER

Since the end of the 20th century, German cities with population growth such as Munich, Berlin, Hamburg or Cologne are facing a strong spatial polarisation due to economic, cultural and political diversities, which more and more influences the access to labor and housing. In this context, gentrification became a keyword for such types of urban changes in media and scientific discussions, although convincing empirical data explaining and generalising such developments are still lacking.¹ According to Tom Slater “[...] a careful analytical indictment of the mainstream research output (typified by scholarship concluding that gentrification is acceptable if it is ‘managed’ by policy) is necessary but not sufficient. Such an indictment needs to be coupled with further research that seeks to document displacement (in any or all of its forms) ‘from below’ in the sobering terms of those who experience it. The absence of qualitative accounts of displacement is striking and shocking when juxtaposed with quantitative measures, or with all those accounts of the trials and tribulations of the new middle class.”²

The critical reflection of literature on gentrification over four decades³ shows that quite different reasons and procedures of urban transformation are summarised under the term of gentrification, which tends to lose its descriptive and explanatory capacity. In order not to enter into such a precarious discussion, the following arguments shall focus on three differently structured urban spaces in Hamburg: Ottensen, St. Pauli and Wilhelmsburg. Their different stages of urban transformation are related to specific economic, political, social and cul-

1 Cf. BRECKNER, 2010.

2 SLATER, 2011, p. 580.

3 Cf. LEE et al., 2008.

tural structures and processes, however, all of them are labeled as more or less gentrified. These examples show different aspects of the relationship between urban poverty, gentrification and urban policies and underline the necessity of scientific analysis with a focus on displacements of poor populations based both on quantitative and qualitative empirical findings.

As the complexity of micro-spaces can never be understood without relating them to their interferences with an always specific meso- and macro-spatial context⁴ and the overlapping of different urban functions, I shall start my argumentation with a brief presentation of poverty in Hamburg, followed by a view on structural specificities and developments in the urban spaces under investigation and a final discussion of relations between poverty and gentrification in the development of the selected urban areas and in a general perspective.

Poverty pockets in a wealthy city: The case of Hamburg

Hamburg is the second biggest metropolis in Germany with approximately 1,800,000 inhabitants. Situated on the Northern and Southern shores of the river Elbe, the city had the chance to develop the largest German harbor since medieval times. Nowadays, commercial relations with China are dominating the business on a growing number of container terminals. Therefore, the harbor moved step by step to the West because the new large container ships needed more and more depth and the digging of sand from the river became increasingly difficult due to costs, lacking storage space for contaminated sands and an old tunnel under the river, which cannot be removed. The port is politically still considered as the heart of the urban economy, although the port businesses lost their central importance for the local labor market due to technological innovations. New economic activities in the sectors of aviation, biotechnology, health, media, entertainment, tourism and other services created growing job opportunities mostly for educated people. They attract increasing numbers of students as well as regional, national and international immigrants. At the same time, many low skilled elderly people lost their jobs with few perspectives to access the postindustrial labor market. They represent the group of long-term unemployed labor force more or less hidden by the way of diverse statistical tricks.

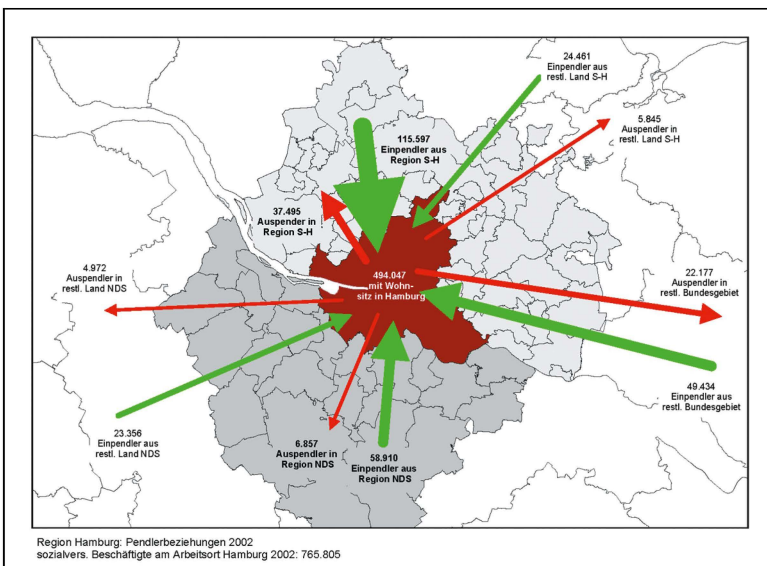
The long lasting tradition of international relations related to port activities and those based on service economies lead to a population of more than 100 na-

4 Cf. LÄPPLE, 1993.

tionalities speaking more than 300 languages in Hamburg. 2012 nearly 30 % of the population had a migration background, meaning that these persons or their parents were not born in Germany. Because a lot of these inhabitants had the chance or were forced to get a German citizenship, the percentage of foreigners – as people without a German passport – in Hamburg is much lower (14 %). Both figures show huge differences regarding urban spaces: In Hamburg's central district nearly half of the population has a migratory background, while those with the highest percentage cope with up to 70 % of immigrants; low numbers of immigrants are characteristic for semi-central and marginal districts with high percentages of middle and high income residents.

Beside immigration the growing regional, national and international tourism and a high number of commuters to the city from the suburban surrounding (see chart 1) contribute to the cities diverse labor force as well as to its importance as a rich consumer capital in northern Germany.

Chart 1: Commuters to the City (Green Arrows) and from the City (Red Arrows) 2002



Source: Soyka, 2006, p. 2

This inflow of consumer capital changed the perspective of urban policies: In Hamburg, many administrative, political and economic capacities are invested for the marketing of the city while neglecting the serious effects of social and spatial polarisation on the increasingly difficult living conditions of poor and/or excluded people.

The City-State of Hamburg⁵ is administratively subdivided into seven districts and a huge number of highly diverse neighborhoods.

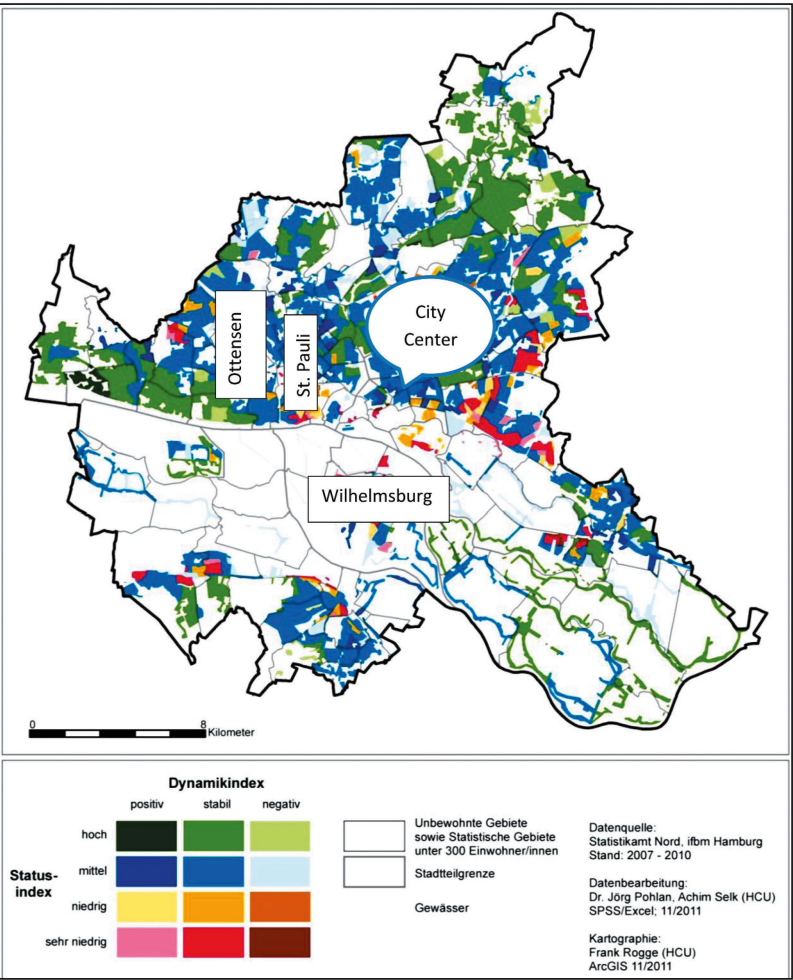
The map in chart 2 has been updated recently in the context of the regular Social Monitoring, provided by the federal administration with responsibility for urban and environmental development, planning and construction. Green colors in the legend indicate a high socioeconomic status with positive, stabile or negative dynamics in the micro-spatial development of the last year. Blue colors indicate a mid-range status with different dynamic aspects. Low and very low status is indicated by yellow and red colors and shows risky urban developments in Wilhelmsburg as part of the inner city district as well as on the margins of the city center and some peripheries. This picture shows that Hamburg has poverty pockets with specific characteristics referring to their history, their social and economic structure, policy-interventions and activities of the civil society in place.

The selected neighborhoods under investigation in this article are Wilhelmsburg, Ottensen and St. Pauli, all of them situated near the city center with its low density of inhabitants. They are marked dominantly with red and dark yellow colors but in different extensions. The population of Ottensen and St. Pauli were of similar size in 1990 but St. Pauli lost nearly a third of its population in the last 20 years; Wilhelmsburg was always much more populated and had to cope with a growing number of inhabitants in the last 20 years (see table 1).

Spatial mobility patterns for the investigated neighborhoods show decreasing numbers of immigrants but – with the exception of Ottensen in 2010 – a still positive migration balance. The reason for this difference is the fact that urban renewal of residential buildings from the 19th century was completed in Ottensen during the 1990s and there is not very much space for new construction activities. Urban renewal led to bigger flats and a decrease of social density so that there is no more capacity for many interested newcomers. The figures related to foreign immigrants show the highest concentration in Wilhelmsburg and more

5 City-states in Germany as Hamburg, Berlin and Bremen have a double political function: They act as federal states with access to respective taxes and delegate communal responsibilities to their districts. In so far they have more money at their disposal and the right to decide about their federal laws.

Chart 2: Social Fragmentation of Neighborhoods in the City-State Hamburg 2011



Source: FREIE UND HANSESTADT HAMBURG, 2012, p. 29.

than the cities' average also in St. Pauli. These two areas still offer a higher percentage of social housing and less living space per inhabitant than Ottensen and the average of Hamburg. Ottensen and St. Pauli are dominated by single-households and single-parent families, but access to jobs is much easier in Ottensen than in St. Pauli and Wilhelmsburg and indicates different education levels of the population. Higher education expresses itself also in different income levels,

where Ottensen corresponds to the average of Hamburg, while inhabitants of St. Pauli and Wilhelmsburg reach only 2/3 of the average. The dependency on social welfare in Wilhelmsburg ranges between 20 and 26 %, in St. Pauli between 14 and 20 % and in Ottensen between 8 and 14 %.⁶

Table 1: Social Characteristics of Investigated Neighborhoods from 1990 to 2010

	Ottensen		St. Pauli		Wilhelmsburg		Hamburg
	1990	2010	1990	2010	1990	2010	2010
Population	33,161	33,052	31,888	21,469	46,686	50,472	1,7 million
Incomings	8900	3367	9555	2952	6444	4329	0,18 million
Outgoings	7508	3413	8322	2799	5418	4043	0,16 million
migration balance	+1352	-46	+1233	+153	+1,026	+286	+0,02 million
migrant background	-	25,5 %	-	35,8 %	-	56,8 %	29,6 %
social housing	-	7,8 %	-	18,9 %	-	29,4 %	10,7 %
living space p.p.	31,8	37	23,6	31,1	26,9	28	37
Singles	-	60,3 %	-	68,7 %	-	47,9 %	53,1 %
single parents (a)	-	38,8 %	-	41,8 %	-	29,8 %	30,5 %
jobless (15-65)	-	5,7 %	-	9,0 %	-	10,7 %	6,1 %
income 2004	29,270 €		20,509 €		20,354 €		32,505 €

(a) of all households with children

Source: STATISTIKAMT NORD, selected data by Ingrid Breckner

6 Cf. KASTENDIECK/BROOCKMANN, 2012, p.6.

Urban transformations in Ottensen, St. Pauli and Wilhelmsburg since the 1980th

Looking back on the long-term history of Ottensen, St. Pauli and Wilhelmsburg we can find some explanations for the diversities in the urban tissue of Hamburg and these areas. An important year for the cities' development is 1937, when Adolf Hitler decided to enlarge the city through the incorporation of huge parts of its surroundings. With his 'Greater Hamburg Law', Altona (including Ottensen) became a district of Hamburg as well as Harburg (including Wilhelmsburg). For a long time, these areas were on the periphery of the traditional Hanseatic City and suffered degradation in the process of industrial decay after 1960.

Ottensen, as a traditional manufacturing area, was first scheduled to be renewed by the way of the demolition of old urban structures. However, the existing plans for physical 'slum clearing' provoked intensive and continuous political protest in the 1970th which succeeded in realizing the first participative 'soft renewal' approach in Hamburg. Physical, social, symbolic and regulative changes of the urban space where negotiated in an integrative perception plot by plot and street by street between inhabitants, advocatory planners and architects, house owners and representatives of the city. This renewal process required more than 30 years and is still ongoing in certain areas; but it achieved highly appreciated results. Today, Ottensen is one of the most sought-after living spaces near to the city center because of its functional and social mix, offering a wide range of life opportunities for different social milieus. It became interesting for so called 'gentrifiers from inside' (e.g. former students engaged in the slow and integrative modernisation and now well paid academics) and people from outside with better salaries, yet still offers public housing for low income people constructed on former industrial plots. The mix of milieus in Ottensen is also evident in the structure of services and commerce in the neighborhood, which allows the residents to satisfy their daily requirements in this multicultural 'urban village'.

Until the beginning of the 21st century *St. Pauli* survived with its image 'poor but sexy'. With its well-known red light district around the Reeperbahn, the area attracted huge numbers of male tourists mostly on weekends and offered living space for different groups of low income people: students, artists, lower working class. The biggest house owner in the area showed a lot of responsibility for the 'left overs' in the postindustrial society: He offered acceptable rents for housing and commercial space, encouraged his tenants to take care of elderly and infirm neighbors and held weekly "open hours" in the lounge of his hotel in order to understand the development process and to find the right moment for necessary interventions. For the last decade the city of Hamburg has been trying

to modernize this area full of urban survival spots. An old brewery on the shores of the river Elbe has been replaced by expensive private and rental housing and opened ‘the village’ for middle class people. Two over-dimensional open air stages became the central place for events. When travelers and homeless people discovered these public places with roofs against rain for sleeping or meeting points, the management of the place installed a water system in the roof of the stages and let it rain at random with the aim to discourage the unexpected and unwanted persons from using this public area. Parts of St. Pauli’s low budget milieu started to organise an anti-gentrification protest together with owners of traditional shops and entertainment areas, encouraged by young professionals. However, the pressure of neoliberal renewal continues, forced by local, national and international real estate investors: They buy buildings and plots in advance for hotels, offices and high level housing under minimal formal political control, expecting high revenue in the future. The power of protest from the local and regional civil society is ineffective as long as policies and the cities’ middle and upper class mainstream support the modernisation strategy without a solution as to where and how the specific milieu of St. Pauli is to survive under acceptable social, economic and spatial conditions. St. Pauli’s traditional social mix faces an extreme risk of erosion and will produce extensive welfare costs together with much individual and collective insecurity.

Since the 1960s, *Wilhelmsburg* suffers from intensive urban decay. The flood in 1962 claimed more than 300 victims because dams in this area were lower than in other parts of the city. After the flood, the low standard houses were no longer attractive for those inhabitants who could afford to live in other areas. House owners lost interest in investments and politicians declared that Wilhelmsburg should no longer be treated as a residential, but primarily as an industrial area. Thus, the first “guestworkers” took over the residences considering the low prices and short ways to their jobs in the port or the railway company. In the 1970s, the city changed its policy and decided to build the new public housing quarter Kirchdorf Süd in Wilhelmsburg near the highway, without providing adequate public transport, educational, health and daily life infrastructure. For quite some time the more than 50,000 residents of Wilhelmsburg were forced to organise themselves and to find a way of living in this geographically isolated island in the river Elbe and cosmopolitan ‘city in the city’. Until the beginning of the 21st century, Wilhelmsburg was a well-known symbol of marginalisation and exclusion. As housing costs in Hamburg increased, students started to discover this city diaspora in their search of cheap housing. Many of them turned back quickly because they could not find the basic infrastructure for their daily life and felt mostly frightened by the wide range of social and cultural

diversities. Better-off immigrants suddenly began to flee their “arrival city”⁷ once they could afford it in order to lose the discriminating address. The cities’ decision for the “Leap over Elbe” after 2000 was based on the recognition that the city state of Hamburg could not cope with the intended economic growth and rising immigration if everything concentrated on the north side of the river. Under this perspective, Wilhelmsburg and the further south of Hamburg became interesting as economic and social development areas. However, this meant a change of the living conditions in Wilhelmsburg. This difficult task within an urban area neglected for a long time was expected to be solved with the complementary implementation of an International Building Exhibition (IBA) and an International Garden Show (IGS).⁸ IBA opened in March 2013 and presents innovative ecological housing concepts, new models of energy supply, renewal of downgraded public housing with immigrant residents under the key themes “Cosmopolis”, “Metrozones” and “Cities and Climate Change” until autumn 2013.⁹ The opening anniversary was accompanied by anti-gentrification demonstrations of local people and political activists articulating their realistic fear of rising housing costs for low income residents. This risk is structurally given as long as legal rent regulations consider only new rental contracts for the yearly identification of the average rent for different housing stocks which cannot be exceeded by house owners. Thus, if in Wilhelmsburg IBA succeeds in motivating private investments in the housing stock, it will clearly result in rising rents for those residents. Housing security under these conditions is provided only for tenants in the public housing stock as long as their rents are legally limited, which is the case for maximum 15 years. The International Garden Show aims at improving the green spaces and leisure facilities in the area, which again has the effect of increasing property values and attracting well off residents.

The urban transformations in the three areas under investigation can be summarized as follows and will be used as empirical material for the interpretation of relations between poverty and gentrification in these urban spaces.

7 Cf. SAUNDERS, 2011.

8 Cf. INTERNATIONALE GARTENSCHAU (IGS) HAMBURG: <http://www.igs-hamburg.de/>, 07.05.2013.

9 INTERNATIONALE BAUAUSSTELLUNG (IBA) HAMBURG: <http://www.iba-hamburg.de/en/nc/themes-projects/projekte-a-z.html>, 07.05.2013.

Ottensen	District of Altona, since 1937 part of Hamburg suffered degradation and social conflicts until the 1960s. Plans for ‘slum clearing’ turned to participative urban renewal under professional coordination after huge political protest since the 1970s with effects of stabilisation through gentrification from the in- and outside. This first integrative (physical, social, symbolic and regulative) renewal approach in Hamburg created a mix of spaces for different social and economic milieus coexisting nearly without conflicts. But the loss of poor population and rising living costs are evident.
St. Pauli	This ‘poor but sexy district’ still hosts a temporary amusement park and touristic spaces with niches for different low budget milieus under pressure of neoliberal renewal since 2000. Local, national and international real estate investors force the modernization of the area with lacking formal political control but accompanied by intensive protest from different groups of Hamburg’s civil society.
Wilhelmsburg	Since its integration in the city state of Hamburg in 1937 the Elbe island became the most expensive example of social, economic, political and ecological failures of urban governance. The flood experience in 1962 and disinvestments lead to a neglected infrastructure (schools, public transport, etc.), poor leisure areas and dominating immigrant economies. For a long time, self-regulation of neighborhoods was the only survival strategy and came under pressure of urban renewal strategies with the International Building and Garden Exhibitions (IBA/IGS) opening in 2013 due to local protest and high professional expectations.

Relations between poverty and gentrification in urban developments

The analyzed examples of urban spaces in Hamburg show developments in different stages of post-industrial modernization. The case of Ottensen stands for participative renewal, possibly simultaneously also empowerment and displacement of less educated immigrants with low incomes. Poor young people living independently from their families with high cultural and social capacities are more and more excluded from the housing market in Ottensen because of constantly rising rents. There are no precise data to examine exactly who moved away for what reasons and who arrived in which socioeconomic condition in specific phases of the modernization process. The only fact we know definitely is that immense protest lead to a slow modernization process with the participation of politically oriented residents. Today, there is still a social and functional mixture in the area as long as the existing public housing stock remains under legal rent regulation, thus securing access to people with low income. If this political regulation erodes, the quarter shall become dominated by middle and high income groups and will risk the loss of its urban flair currently consisting of social, cultural and functional diversity and tolerance.

In St.Pauli and Wilhelmsburg the modernisation process initiated much later than in Ottensen under completely different societal conditions. Neoliberal policies had been established for more than a decade and Hamburg, as a tenant metropolis with moderate prices for real estate properties, was discovered by national and international investors seeking good revenues. Since the financial crisis in 2008 there is a huge interest from the in- and outside to use real estate properties as an investment because the trust in banks is decreasing.¹⁰ Under these conditions urban renewal cannot be discussed any more as such: It has to be precisely contextualised with economic, political and social developments on a regional, national and global level. Its immediate or long term micro-spatial effects are much more difficult to relate to their reasons than in the long lasting renewal process in Ottensen since the end of the 1970s. The cases of Wilhelmsburg and St. Pauli show that the post-industrial labor market is less accessible for poor and elderly people without qualifications for rapidly changing and heavily internationalized service jobs. Therefore, overlapping of unemployment or precarious jobs and poor housing or homelessness succeeded to a growing number of the population even being part of the middle class. This explains the wide spectrum of people protesting against urban transformation in general

10 Cf. MESTER, 2013, p. 27.

and interventions in the housing market in particular. This is the only reason why the city of Hamburg decided quite quickly to rebuy the inner city area called “Gängeviertel”, which was given to an investor from the Netherlands who speculated with the property for more than six years waiting for higher profit. This example shows that members of the local government and the city’s public opinion is still traumatised by the 20 years of fights for buildings in Hafenstraße (Harbor Street), which finally resulted in a collective renewal process with the participation of the former squatters and the assistance of advocacy planners.

At the moment it is difficult to foresee how the ongoing protest activities in St. Pauli and Wilhelmsburg will develop in the future. There is some constructive activity from the educated second and third generation of the population with migratory background articulating their identification with the formerly neglected neighborhoods. They protest against possible displacement caused by the political creation of a social mixture, because they do not want to lose their social networks established in the urban diaspora.¹¹ Those immigrants, who can afford it, buy houses in their well-known quarters by pooling the money of larger families. Even if they earn less than small German households, they become economically successful in concurrence for the same flat or building due to their social capital. This situation often creates jealousy in parts of the German population which does not recognize, that this is the only possible way to keep their living environment in a discriminatory surrounding housing estate.

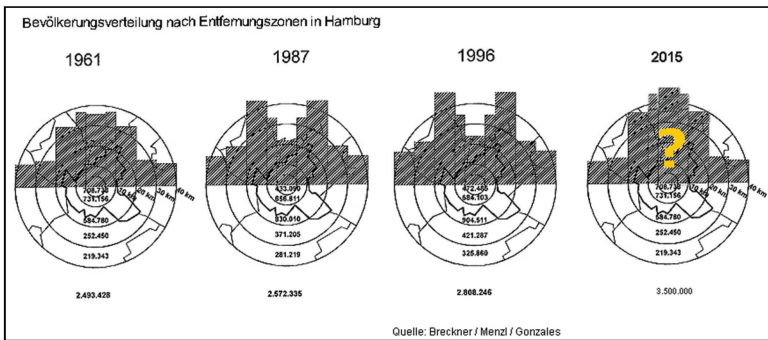
All over Hamburg the really poor population in central and semi-central districts is increasingly at the risk of displacement to the margins of the city or its suburbs. As chart 3 shows, the city center was highly populated in the 1960th. Until the end of the 20th century the central area of Hamburg lost its residential function because of disinvestment in the old housing stock, lack of green areas and ongoing commercialization of these central spaces. Those who moved to the margins or to the suburbs were the classical middle classes expecting a more homogenous and healthy residential environment. Since the beginning of the 21st century we observe a trend called re-urbanisation (in contradiction to suburbanisation) or ‘renaissance of the city’ in Hamburg and other German metropolis¹². New attractive residential opportunities in central areas are highly sought-after by well-off households from the cities’ periphery and from outside.¹³

11 Cf. BLOKLAND, 2003.

12 Cf. LÄPPLE, 2005; KANAI/LÄPPLE, 2005.

13 Cf. MENZL et al., 2011; BRECKNER/MENZL, 2012.

Chart 3: Distribution of Population in Hamburg in Dependency to the Distance to the City Centre



Source: BRECKNER et al., 1998, p. 27

They rent and buy residences while people with lower incomes cannot afford the expensive housing costs in the central areas. Demographic change also creates pressure for the poor population in central city districts because even middle class parents, whose children left home, decide to reduce their living space and prefer to move to central areas.¹⁴ Thus, the attractiveness of central urban living spaces goes hand in hand with risks of displacement for poor elderly and young people, single parent families and new immigrants to closer or further peripheries. These households mostly cannot afford or are not able to drive cars and are in danger to lose their established social contacts and necessary health infrastructure. Therefore, in the future poverty and capacities of self-organisation need to be analyzed in marginal districts of metropolis and in suburbs where we cannot expect yet the same complex competences for the production of space as in megacities of developing countries.¹⁵ The German overregulation of spatial planning and the still existing lack of cooperation between institutions and professions involved in the production of space risk to create new poverty issues outside of the metropolis in cases of low political responsibility and lack of economic resources for societal inclusion.

14 Cf. SLAVIK, 2013, p. 25.

15 Cf. DELL, 2009.

Literature

- BLOKLAND, TALJA, *Urban Bonds: Social relationships in an inner city neighbourhood*, Cambridge 2003.
- BRECKNER, INGRID/MENZL, MARCUS, *Neighbourliness in the City Centre: Reality and potential in the case of the Hamburg HafenCity*, in: *New Urbanism. Life, Work, and Space in the New Downtown*. ed. by ILSE HELBRECHT/PETER DRKSMEIER, Farnham/Burlington 2012, p. 133-148.
- BRECKNER, INGRID, *Gentrifizierung im 21. Jahrhundert*, in: *Aus Politik und Zeitgeschichte* 17 (2010), p. 27-32.
- DELL, CHRISTOPHER, *Tacit Urbanism. Hawkers and the production of space in every day Kolkata*, Rotterdam 2009.
- FREIE UND HANSESTADT HAMBURG/BEHÖRDE FÜR STADTENTWICKLUNG UND UMWELT, *Sozialmonitoring Integrierte Stadtteilentwicklung Bericht 2011*, Hamburg 2012.
- KANAI, MIGUEL/LÄPPLE, DIETER, *The Resurgence of Urban Centralities: a look at contemporary New York*, ed. by LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE, London 2005.
- KASTENDIECK, HANNA/BROOCKMANN, SONJA, *Das Hamburg der Gegensätze*, in: *Hamburger Abendblatt*, 22.03.2012, p 6.
- LÄPPLE, DIETER, *Thesen zu einem Konzept gesellschaftlicher Räume*, in: *Die aufgeräumte Welt. Raumbilder und Raumkonzepte im Zeitalter globaler Marktwirtschaft*, Loccumer Protokolle 74/92, ed. by JÖRG MAYER, Loccum 1993, p. 29-52.
- ID., *Phoenix aus der Asche : Die Neuerfindung der Stadt*, in: *Die Wirklichkeit der Städte*, ed. by HELMUT BERKING/MARTINA LÖW, Baden-Baden 2005, p.397-413.
- LEES, LORETTA et al., *Gentrification*, New York 2008.
- MENZL, MARCUS et al., *Wohnen in der HafenCity – Zuzugsmotive, Alltagserfahrungen, nachbarschaftliche Aktivitäten*. Materialien zur HafenCity Hamburg Nr. 1, ed. by HAFENCITY HAMBURG GmbH, Hamburg 2011.
- MESTER, VOLKER, *Spekulantentreiben Immobilienpreise hoch*, in: *Hamburger Abendblatt*, 27.03.2013, p. 27.
- SAUNDERS, DOUG, *Arrival City – The Final Migration and Our Next World*, Toronto 2011.
- SLATER, TOM, *Gentrification oft the City*, in: *The New Blackwell Companion to the City* ed. by GARY BRIDGE/SOPHIE WATSON, Malden (USA)/Oxford (UK), 2011, p. 571-585.

SLAVIK, ANGELIKA, Wer braucht schon ein viertes Zimmer?, in: Süddeutsche Zeitung, 27.03.2013, p. 25.

BRECKNER, INGRID et al, Auswirkungen der Umlandwanderung auf den Hamburger Wohnungsmarkt, ed. by FREIE UND HANSESTADT HAMBURG/BAUBEHÖRDE/AMT FÜR WOHNUNGSWESEN, Hamburg 1998; <https://www.hcu-hamburg.de/research/arbeitsgebiete/prof-dr-ingrid-breckner/forschung>, 07.05.2013.

INTERNATIONALE BAUAUSSTELLUNG (IBA) HAMBURG: <http://www.iba-hamburg.de/en/nc/themes-projects/projekte-a-z.html>, 07.05.2013.

INTERNATIONALE GARTENSCHAU (IGS) HAMBURG: <http://www.igs-hamburg.de>, 07.05.2013.

SOYKA, ANDREA, Arbeit im Kernstadt-Umland-Gefüge, 2006: <http://www.suburbanisierung.de/downloads/Verpflechtungsmuster.pdf>, 07.05.2013.

