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International Symposium
on Built Environment and Urban Design



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The Regional Sub-Urban Housing Challenge

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With Workshops on Housing for Urban Planners and Researchers

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1 Abstracts of Session I: Between Rules and Practices of Utilizing Space for Sub-Urban Housing in Regional Context with Stefan Siedentop, ILS, Germany

1.1 Suburbanisation, Suburbanism and Housing – What is the problem, how is it discussed, and what needs to be done?

Markus Hesse, University of Luxembourg, Luxembourg

This paper seeks to situate the subject matter in current debates about urbanisation, spatial patterns and related policy responses with a focus on developments in Western Europe and the industrialised world. In my short overview, I will address the three questions above, in order to give some inspiration for further debate at the conference. My intervention is guided by a mélange of my own research (as summarised in Hesse & Siedentop 2018), and also two recent publications that seem to quite fittingly represent the spectrum of suburban studies (Keil 2017, OECD 2018).

In this context: What is the problem, how is it discussed, and what needs to be done?

1) At first glance, the problem seems to be consistent with how it has been observed for some time: suburbanisation means poorly co-ordinated urban expansion in areas that lack centrality, density and infrastructure, which causes negative side-effects in terms of land consumption, transport generation and the like. However, the more urbanisation extends into the periphery, the more complex the urban-regional pattern is becoming as a result. This includes the urbanisation of suburbs, in turn the suburbanisation of core urban areas, and also suburban decline. Closer inspection also reveals that all of this is driven by an interplay of intended and unintended policy measures and practices at various spatial scales – urban and non-urban governance.

2) In recent discourses, perception of the problem has changed, although there are still rather polarised musings on what suburbs have to offer to city and region. On the one hand, suburbanisation is still problematised ("sprawl"), particularly when analysed in comparison with the central city. On the other hand, suburban development patterns are increasingly acknowledged as being an actually existing part of today's urban built environment, to be assessed in its own right rather than primarily in comparison.

3) What needs to be done? Among many other issues, housing provides a variety of strategies and options for suburban renewal in city regions. Particularly the not-so-recent housing crisis in central cities offers potential to further integrate fringe and core areas – which could be seen as constituent parts of one city-regional housing market. Within suburbia, the search for a balanced practice of densification could become the main challenge to be met in the near future.

In conclusion, first, suburbanisation is still going on and far from dead, as once predicted. In fact, it seems to be almost ubiquitous. Second, it is subject to both spatial and temporal differentiation and variation; its spread and coming of age make it a relevant subject of research and practice. Third, suburbia has left the discursive ghetto of being blamed as non-urban. This is also the result of a research focus on people, society and community, associated with the idea of 'suburbanisms'. The challenge of making suburbs sustainable remains on the agenda, and the overarching question here is where to look out for proper answers: in cities, in suburbs, or in societies and politics?

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1.2 How has the Suburbanization of Poverty affected Housing Policy in Suburban Jurisdictions in the US and Germany?

Sheila Martin, Liza Morehead, and Ryan Winterberg-Lipp, Portland State University, USA

As demand for housing has increased in the areas close to downtown Portland, lower income households have faced rising rents and housing prices. Many households have retreated to areas farther from downtown, including in suburban jurisdictions, in search of more affordable housing. This paper examines this dynamic by examining the following:

- Which jurisdictions have faced the largest increase in low-income residents?
- What are the characteristics of those communities that are attractive to these residents?
- How has the percentage of residents who are cost burdened changed in these jurisdictions?
- How have these jurisdictions responded to the shift in resident demographics? How has their housing policy changed as this need has been recognized? What political processes have led to these changes (or not), and from where have these jurisdictions taken ideas for new housing policy?

This paper will also draw upon data being developed about the suburbanization of poverty in German cities (Rynerson and Jurjevich) and will draw comparisons between the population dynamics and potential policy responses.

Suburbanization of poverty is not a new phenomenon in the United States. In 1997, Myron Orfield, in his celebrated book, *Metropolitics*, argued that declining inner ring suburbs had much in common with high poverty areas of central cities, and advocated for the development of strategic alliances between inner ring suburbs and cities to fight for more equal distribution of affordable housing and revenue sharing. Similarly, in their book, *Confronting Suburban Decline* (2000), Lucy and Philips described the rapid decline of post-World War II suburbs that had resulted from a number of national and global economic forces, including employment decentralization, the loss of manufacturing jobs, and industrial restructuring.

But today's conversation in strong-market cities and regions is very different from the conversations about city-suburban alliances discussed by Orfield. The gentrification of inner cities has forced relocation of communities of color and lower income residents as well as their businesses. Well-heeled inner-city residents are much different than the inner cities described by Orfield in 1997. Rather than forming alliances with inner-ring suburbs, many urban residential neighborhoods rebel against efforts to densify urban residential areas—policies that would provide a greater supply of housing and, one would hope, soften the price pressure on inner-city housing. At the same time, they argue that suburban jurisdictions should be changing their policies so as to provide additional market rate and subsidized affordable housing. Meanwhile, advocates for low-income communities argue that gentrification has removed low income communities from so-called “high opportunity neighborhoods” – places with good schools, parks, transit, and other assets that contribute to a high quality of life.

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We examine these dynamics and present a range of policy responses by urban and suburban jurisdictions, attempting to draw comparisons between the policy responses in Germany and those in US strong market cities.

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1.3 Strategies for Sustainable Sub-Urban Development in the Osaka/ Kansai Area, Japan

Yukihiro Kadono, Kwansai Gakuin University, Japan

The expansion of railway system has enhanced the development of the suburban area in Japan. At the Osaka/ Kansai Area, private railway companies have constructed the railway network. These companies and developers have supplied residential areas around the suburban stations. This trend has become visible in the beginning of 20th century. After 1960s, large-scaled areas located further from the stations have started to develop as residential areas. This movement has occurred in response to the rapid population growth at the city regions. The population inflow of homogenous households into these areas occurred within short period of time and induced the suburbanization. As a result, aged-ratio of these suburbs especially which has been supplied after 1960s, has rapidly increased and caused difficulties for the sustainable development.

The total population of Japan has started decreasing and the aged-ratio has been rising. To revitalize the aged and superannuated suburban areas, it is necessary to implement 3 types of countermeasures simultaneously. The countermeasures are:

1. To examine methods and measures for renovating each individual suburbia.
2. To reconfigure the suburbia as a part of mega city region and aggregate compactly.
3. To convert the land use and the facilities in suburbia from single-purpose residential area to multiple-purpose urbanized area.

The typical cases of the first measure are renewal projects of public housing at Senri New Town and Senboku New Town developed by public sectors. The municipalities are reconstructing a part of public housing in Senri New Town into high-rise housing, results in creating the redundant spaces. These extra spaces have been vended to developers, and these companies have started constructing condominiums. The modification of the apartments in Senboku New Town, adjusts its facilities to mitigate the difficulties of young households. This

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alteration also aims at promoting new young residences' occupancy. In addition, these renewal projects include an establishment of community place for elderlies and framework construction of the watching over services.

As the second measure, the government adopted a program called "Location Normalization Plan". In this program, individual municipalities specify the "Area for Residential Inducement" within the "Area Designated for Urbanization" to aggregate residential area compactly. It however, takes time for zoning and inducing. In addition, lately, railway companies have devised two main counterplans. One is to provide new residences around stations to enhance the relocation along the railway. Another is revenue source diversification by developing life-support business, such as housing improvement, provision of elderly welfare and child care supports. They develop high-rise condominiums and high-ranked commercial/life-support facilities, around the suburban stations to attract people from hinterlands and to improve the branding image.

Last measure is primarily required in the detached housing areas. People living in these areas have higher demands on such life-support services and public welfare housing for the elderly. Meanwhile, most of the residents allow only constructing low-rise detached houses. The reorganization of facilities in suburbia is necessary for promoting young household inflow and increasing sustainability of the area, even though they refuse for multiple-purpose land use. The examples of the required facilities are: offices suitable for present working-style and residences/life-support services for varied types of families.

Second and third measures have only just started from few municipalities and railway companies. Therefore, today's topic is based on these cases of Osaka/Kansai area.

1.4 When Growth Control meets No-Growth Local Policies. The Housing Challenge in the Case of Rabat and Lyon

Maryame Amarouche, Université de Lyon, France

This paper shows how policies to control urban growth are confronted with local interests in favour of slow or no-growth. It is based on the comparison of two metropolitan regions, one within the global North, around Lyon (France) and the other within the global South, around Rabat (Morocco). With a will to enrich the empirical knowledge of urbanization processes and following post-colonial studies to go beyond "established sites of theory building" (Schmid et al. 2018) we compare these two different cases along with both the city centre and periphery points of view. These two cases embody two different national approaches to urban growth. First, in France, over the last four decades, policies have targeted urban sprawl as the enemy of sustainable urban development (Emelianoff 2007). These policies are on the municipal level where land-use regulations are conceived and decided. Regarding the urbanisation of new areas, strong incentives and regulations have been adopted to encourage densification and "urban renewal" (Raulin 2012; Renard 2011; Denizeau 2011). Whereas, the Moroccan urban sprawl debate has recently appeared thanks to urban developers and the Agricultural Ministry. However, legislation and local urban master-plans are unable to control this phenomenon (Harroud 2017). This is reinforced by informal settlements and constructions allowed as "dérogation" to zoning rules. Here we present these two approaches and then analyse how they influence suburbanisation and urban extensions.

Secondly, the paper will present field-work results from 40 semi-structured interviews with councillors, public urban planners, architects, metropolitan representatives and planners and national stakeholders. The French school of urban geopolitics (Subra 2012, 2007; Souza 2017) shows suburbs as more than just "expansion areas". But how powerful are their local repre-

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sentatives and institutions, and how do they influence metropolitan design? In both cases focusing on these stakeholders helps to show how both public and private housing production have been influenced by local actors interested in controlling expansion and selecting populations to preserve social status quo (Rousseau 2015).

Firstly, West-Lyon suburban municipalities attracted upper middle classes interested in large individual houses surrounded by attractive landscapes. These municipalities developed strict extension control, with a strong focus on farmland preservation. Yet, because of their proximity to Lyon city-center - around 20 km- and the metropolitan region's housing shortage, current metropolitan plans are forcing them to produce new housing. We will highlight their strategies to show how they balance these two obligations and expose their impacts.

In Rabat, the development of suburban municipalities is more city capital controlled. Our analysis shows that housing production is shared between the four most important suburban municipalities employing social criteria. Three of them are the main suppliers of Rabat land stock for social housing. This protects the municipality of El Menzeh, which like West-Lyon is well known for its quality of life and which has mostly developed around gated communities and large individual houses, with only few informal settlements.

Studying housing production and metropolitan governance through growth control policies helps to analyse the impacts of sectorial policies and to question the production of a more sustainable and just city.

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2 Abstracts of Session II: Analysing Housing Demand and Supply with Stefan Fina, ILS/ RWTH Aachen University, Germany

2.1 Changing housing and planning policies over time in England – Challenges on Housing Data Aggregation and Analysis

Andreas Schulte-Baig, University of Manchester, Great Britain

Housing provision is a key concern in the UK. This paper focuses on the situation in England as the planning and housing systems in other parts of the UK are different. Unlike many other countries, England does not have a regulatory zoning system and instead regulates development by a discretionary system of planning applications. Still, there are increasing pressures for local authorities to plan for housing provision.

The paper starts by providing a historic overview of England's housing system, including discussing the predominant mode of housing provision over time. Following this overview three recent phases of strategic planning for housing are discussed in more detail.

The first phase provides an overview of New Labour's approach starting in 1997. This saw on the one hand the introduction of a large scale housing regeneration/demolition pro-

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gramme in areas of low housing demand/vacancy called Housing Market Renewal. On the other hand the urban renaissance agenda aimed to contain urban sprawl and encourage reuse of previously developed land for housing using a national target of 60%, while also increasing density. This was embedded in housing targets which were part of newly established regional spatial strategies. There were also plans to use functional housing market boundaries for strategic planning, with work conducted on this matter for the National Housing Planning Advisory Unit.

Following this phase, the new government in 2010 abolished national targets and regional planning and moved responsibility for planning towards local authorities. Already introduced under the previous government, local authorities were required to produce Strategic Housing Market Assessments and Strategic Housing Land Availability Assessments. These latter documents would identify potential sites for housing development.

Growing concern in government about a lack of new house building led to a new phase of housing policy. 2017 saw the introduction of a requirement for local authorities to produce brownfield registers, and to update these annually including an option for "permission in principle", a new form of planning consent. There is also growing interest in some local authorities to become more pro-active in housing provision, instead of relying on the private sector and volume developers to provide housing.

A final section of the paper will present the current practice of using population and household projections to identify future housing need in England and also provide an overview of data available to monitor the housing sector.

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2.2 Data Availability as a Challenge for Analysing Suburban Interrelations in Metropolitan Context

Tomohiko Yoshida, Ritsumeikan University, Japan

It is often said that two-thirds of Japan's national land area consists of mountains, and the habitable area covers only 34% of the total area. The habitable and plain land is located mainly along the shoreline. As a result, urban spaces are geographically limited and population density is particularly high, compared with countries in Europe and North America, for example. This geographical limitation is considered to be one of the reasons why regulations to control rapid urbanization are comparatively loose in Japan. Resultantly, the country's urban areas have expanded in the absence of effective methods for controlling the strong demand for the development and improvement of living spaces in cities and towns. In particular, the suburban areas of metropolises developed rapidly due to the period of high economic growth that commenced at the start of the 1960s. This presentation aims to analyze such patterns as well the locations of suburban developments, focusing mainly on detached houses in Japanese metropolises. A discussion of the problems with the existing model will provide the basis for a suggested urban policy that would enable Japanese cities (as well as overpopulated cities in European countries, such as Germany) to become more compact.

In this presentation, the map of "Zombie Subdivisions in Kansai Metropolitan Area" will be shown to explain about such a rapid urbanization and loose urban regulations in Japan. The discussions in this session will promote and contribute for the deeper studies on "Shrinking

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Cities of Japan" in the international research perspective and hopefully, it will give some hints for "bad" suburbs.

2.3 The Regional Sub-Urban Housing Challenge from the Perspective of Resource Efficiency

Andreas Blum, Leibniz Institute of Ecological Urban and Regional Development, Germany

Housing and construction have a significant impact on the consumption of resources of any society. At the same time, on all policy levels strategy documents towards sustainable development highlight the importance of improvements in resource efficiency. Against this background, the presented research investigated the impact of demographic trends and changing user preferences on resource consumption within the housing sector in terms of construction materials, land and energy. Resource consumption induced by different types of housing (in particular detached homes vs. apartment buildings) and options for action are concretized under different development scenarios drawn on the basis of two medium sized German case study municipalities showing declining and stable population development. A particular focus of the research is on "single-family homes" that make up about 65% of the residential building stock in Germany and represent the most resource intensive type of dwelling. With the aging "baby boomer generation" increasingly moving out of these homes a particular new challenge may arise in the near future, not only in terms of (sub-)urban development but also in terms of urban resource efficiency.

The approach to mapping resource consumption within a "demographic resource model construction and housing" included a database of buildings and synthetic building types derived from this as well as a database on infrastructures. Estimates of changing demand due to demographic developments and changing household structures were provided by an extended version of the online calculation tool for housing demand. Both, the databases as well as the calculation tool are hosted by the Leibniz Institute of Ecological Urban and Regional Development (IOER).

Overall, the research results indicate that municipalities – especially those outside prosperous regions – will have to adapt to vacant housing stocks in the longer term. Assuming unchanged context conditions, preferences and demand for existing or new residential buildings, the model calculations indicate an increasing proportion of vacant housing from 2030 onwards for both, apartment buildings as well as detached homes. As an example, even for the case study town with a basically stable population, a vacancy rate of up to 10% for single family homes is projected, as demand for such housing is insufficient to deal with the increasing number of vacant buildings.

From a resource perspective, this means, that the consumption of resources within the housing sector remains either stable or may even increase despite a falling population. This is true, in particular, when we consider the resource consumption per resident as an estimate of urban resource efficiency. However, with respect to alternative development scenarios, our results show, that under the condition of a stable or growing population a shift of housing supply from single-family (detached) homes towards a higher share of multi-unit residential buildings can contribute to an increase in resource efficiency. An interesting option under the condition of a declining population is the conversion of a potentially growing number of vacant single-family homes into smaller multi-unit/multi-purpose residential buildings since it can help to avoid vacancy and keep resources in use.

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3 Abstracts of Session III: Housing and Planning in Sustainable Post-Suburban Contexts with Stefano Cozzolino, ILS, Germany

3.1 Spatial Transformations in Urban Areas during the past 50 Years

Isabelle Loiris, Ghent University, Belgium

This research examines the dynamics of spatial transformations in highly urbanized areas and in particular the urban agglomeration of Ghent (Belgium). To this end we go back to 50 years in time (1963-2013). The hypothesis is assumed that three major spatial transformations take place during this period: the population increase leads to sub-urbanization or the spreading of functions around the city centre until the 1980s and is followed by a period of compaction processes in which remaining open areas are filled within the suburban area. It is mainly about new construction. This condensed nebula - which presents itself as a city edge - finally, together with the city core, transforms both in nature and in use of the existing built-up tissue. This mainly concerns renovation and reuse. The dynamics of these processes can be reconstructed on the basis of building and allotment permits.

Based on this, neighbourhoods can be distinguished with low or high dynamics regarding transformations. Finally, it will be investigated where transformations will occur in the future. Socio-economic characteristics of starters on the residential market can be an indication of expected transformations in the future in other neighbourhoods. The article introduces the concept of Napoleon plots to carry out statistical and spatial analysis. Dynamics and patterns are mapped.

3.2 Sprawl and Suburban Development in Italy: Plural Causes and Possible Strategies

Stefano Moroni, Politecnico di Milano, Italy

For many years the phenomenon known as urban sprawl (namely, that type of suburban development that is mainly of a low-density residential nature) has taken a lot of flak from all sides. The proliferation of sprawl has been widely blamed on individualistic behaviour and on the predominance of a car-based mobility, and not least on the deemed laissez-faire attitude of local policy-making and lack of planning.

This paper offers a different perspective: it acknowledges that sprawl is indeed linked to public policies, and that we need to understand the specific institutional frameworks that allow it to happen. Admittedly, this means we must also acknowledge how sprawl varies significantly from country to country, and hence realise the relative different ways to address the issue (and different ways of regenerating and revitalising those areas most affected by sprawl).

This paper takes a close-up view of all these factors, with particular focus on how sprawl manifests itself in Italy.

3.3 Brownfield Development in the Face of Pressurized Urban Housing Markets – The Use of Scenarios in a Complex and Politicized Environment

Edwin Buitelaar, Utrecht University, The Netherlands

Many cities are magnets of prosperity nowadays. In those cities, housing demand is large and rising. Since housing supply is inelastic, housing prices are rising to the extent that

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great affordability problems occur. Although there is consensus about the need to raise production so as to raise supply, there is often a lot of debate about its location: within the existing city, on underused or derelict sites, or on greenfield land outside existing city boundaries?

The discussion focuses both on feasibility – physically and financially – and desirability. This is also the case in the Netherlands, the case study in this paper. The question we address here is if and how it is possible for researchers on the science-policy interface to support these debates facilitate evidence-based decision making, regarding, in this case, the space for brownfield development.

In doing so, we face two major problems: 1) the complexity of the object at hand, that is, of urban systems, and; 2) the politicised nature of the debate. In trying to shed light on the issue, we link two bodies of literature. The first is the literature that links planning and complexity, with its focus on non-linear relations, uncertainty, the problems of predictability and the need for adaptivity. The second body looks at the role of science in politics and policy-making. The focus is particularly on Pielke's *The Honest Broker* (2007).

By applying a scenario approach in which we reveal the important policy alternatives, we show how researchers can perform a role of 'honest broker'. By making use of land-use modelling, we emphasise the importance of taking account of uncertainty, regional differences and of making research assumptions and decisions explicit.

3.4 Enriching Suburban Environment through the Means of Landscape Infrastructure Design

Paola Sturla, Politecnico di Milano, Italy

During the past thirty decades, the "extended urbanization process" (Brenner and Schmid 2015) in both Europe and the United States, led to progressive urbanization or metropolization (Indovina 2011) of territories. In the meanwhile, the rapidly changing economic, social and environmental conditions made the aging built stock unsustainable, difficult to maintain and to adapt to different future needs and uses.

The European urban planning debate with regards to suburbanization is usually lead by planners and architects, focusing the attention of their studies on one side on a-spatial policies and rules, on the other side on the physical aspects of buildings. In the Northern-American reflexions instead, the debate on suburban and (post)suburban contexts is lead by landscape architects and landscape planners. This pedantic remark uncovers an approach based on designed interventions, in which the relationships with natural systems and the user's experience/perception of space are at the core of the planning and design process. Up to certain extent, this approach produced scarce practical results, as the mimetic attitude of the New Urbanism in planning for monofunctional enclaves, as corporate campuses or production districts. However, it is a fertile research field because of the coeval consideration of various dimensions of the territory, without endorsing the human-centric, modernistic vision of the world based on the spare separation between nature and built environment.

More specifically, three features characterize the landscape approach to the urban and suburban realm:

i) By considering natural systems and the human action as elements of the project, landscape acknowledges a level of indeterminacy, allowing for self-organizing systems to emerge and evolve within the built environment.

ii) By considering infrastructure as the mean for organizing space in the post-metropolitan territory, the landscape provides a link between regional scale strategies and

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policies, and the local scale of urban and architectural design projects through the typology of the TOD, Transit Oriented Development.

iii) By considering the human action in space and its perception as a key aspect of planning and design, landscape considers the visual and environmental qualities of places in parallel with function-oriented performances.

This contribution aims to propose landscape infrastructure as a lens to interpret and understand the (post)suburban development, as well as a tool to develop opportunities for better futures. This work is part of the author's doctoral research "Critique of the Pure Simulation.", under development at Politecnico di Milano.

The relationship of landscape design and infrastructure has a long history. Known in the Architecture, Engineering, and Construction (AEC) industry as "landscape infrastructure design" this branch of landscape architecture refers to a specific segment of the interdisciplinary infrastructure design process. This discipline integrates the physical objects that support the "extended urbanization process" (Brenner and Schmid 2015) as railways, stations, airfields, ports and their TODs in their context. Landscape architect and planner Frederick Law Olmsted originally introduced this approach in the United States, by designing urban landscape infrastructures as Central Park or the Emerald Necklace in Boston, as well as Levittown, the first suburban development. Madrid Rio project by West 8 and MRIO Arquitectos (2012) is a more recent precedent for this typology. Some features characterize these designs: on the one hand, they cope with sectorial standards and spatial requirements on sight distances, clothoids geometries, universal accessibility, safety, and security. On the other side, being the interfaces between the city and the infrastructure, they constitute the public realm and are an environment where users transit and spend time daily. For this reason, their spatial quality is crucial for the livability of the city, with impact on people's behaviors and health.

The central assumption of this research is that these spaces are complex systems where the description of emergent characteristics, as defined by Complexity Science, happens at three levels. At first, features emerge in the interaction of physical objects with natural systems. Secondly, they arise in the networked design process, which involves a multitude of professionals and stakeholders. Thirdly, they emerge in the aesthetic experience of the landscape itself. The word landscape comes from the German *Landschaft*, which means to perceive a place being inside it. This individual act of perception constitutes the aesthetic experience of a place. In landscape theory this is acknowledged as a necessary condition to have a landscape: there is no landscape without a human experiencing it. According to Jorgen Dehs, "landscape means a flowing variety that is held together by the spectator's glance." Dehs suggests conceiving the "sense" of a landscape through a concept of "identity in translation," (Dehs 2001 in Eliasson et al. 2001) the relationship between its physical characteristics and the unique, individual perception of it.

During the XX Century, the development in the field of Complexity Science influenced the work of academics and practitioners in the area of landscape design and urban planning. The reason for this interest is the potential offered by the theory of complexity in dealing with unstructured problems, which characterize "the urban" (Lefebvre 1968) as extensively discussed in the urban planning academic debate. This approach led to extensive use of computer simulations applied to the urban realm. However, according to Juval Portugali, the shift from the original qualitative essence of the first simulation models to the quantitative recent data-based ones generated a paradox, the claim that cities are complex systems, treated as very simple systems (Portugali et al., 2012, page 53). In his essay "Complexity Theories of Cities have come of age." (2012) Portugali highlights the lack of interdisciplinary contamination between the Complexity Theory of Cities (CTC) and Cognitive Science.

Because of its qualitative essence, and its acknowledgment of complex systems, related to both nature and the action of humans in the planned places, the landscape discipline

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studies the spatial qualities of places in relationship with user's (inhabitants) experience, and could be the link between the fields of Complexity Theory of Cities and Cognitive Science. Therefore, landscape infrastructure design could be a lens for interpreting and intervene in the contemporary (post)suburban housing context, considering infrastructure and its surrounding as a place-making opportunity.

In conclusion, the proposed approach could be of benefit for both planners and Complexity Theory of Cities experts. From the planning perspective, considering landscape infrastructures as the backbone of suburban and post-suburban developments could shift the attention from the built objects to the open spaces, opening a palette of adaptable interventions aimed at ameliorating the user's experience of such spaces. From the point of view of CTC experts, the suburban and post-suburban environment could constitute a real-world case study to test models, where the qualitative essence of landscape drives the understanding of the suburban and post-suburban environment.

4 Abstracts of Session IV: Role of Housing for Design after Decline in Re-Urbanising and Post-Suburban Contexts with Hendrik Jansen, Berlin Housing Company, Germany

4.1 Plural Urbanism, Suburban Settings and the Housing Issue

Brent D. Ryan, MIT Urban Planning, USA

4.2 'Towers-in-the-Park': New Suburbs in the City Hub

Nurit Alfasi, Ben-Gurion University of the Negev, Israel

'Towers-in-the-park' is a term coined at the beginning of the 20th Century to describe modern high-rise residential planning. The term, associated with the legacy of the famous French planner Le-Corbusier, is used here to describe the type of luxury apartment development which is extremely popular in the US, Europe and also in Israel, where the study takes place. Offering prestige communal living for the middle or upper-middle classes, 'towers-in-the-park' neighborhoods create detached and socially segregated living areas. With low population density, stemming from the dispersed urban structure, and tendency toward private transportation, these neighborhoods provide a suburban atmosphere in the hub of the metropolitan areas. The study examines the effect of this prevalent type of development on existing cities, focusing on the social and the economic implications and on urban design, transportation systems and municipal services.

'Towers-in-the-park' forms a major type of urban development in Israel for more than two decades. Nevertheless, their social, economic and environmental implications were never thoroughly examined. Particularly, in the face of a continuous housing crisis, local and governmental planning agencies promote the construction of new neighborhoods of this type at central as well as peripheral locations. Our study found more than twenty new 'towers-in-the-park' neighborhoods built in Tel Aviv metropolitan area in the last twenty years. Such neighborhoods are usually planned, constructed and populated by a single developer, having very similar features: the buildings are ranging 8-25 stories, usually located away from streets and sidewalks, surrounded by lawns and parking, containing remarkable entrance lobbies and secured access; the neighborhoods are spacious, including significant open

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spaces and landscaping development; commercial and community centers are usually isolated from the apartment buildings.

The study includes a comprehensive analysis of the socio-economic features of inhabitants in 'towers-in-the-park' neighborhoods, in comparison to the profile of residents in the nearest city/town. In addition, in-depth analysis of urban design and municipal services was conducted in six new 'towers-in-the-park' neighborhoods, in comparison to six veteran neighborhoods in a nearby city or town. Finally, a phone survey of 600 residents, 50 residents in each of the examined neighborhoods was conducted, in order to learn on residents' feelings regarding their neighborhoods, the social relations conducted there, and the relationships with nearby city or town.

The findings reveal a harsh social segregation created by this type of development: residents in the new neighborhoods are significantly younger, have more children, are richer, more educated and more car oriented than inhabitants in the nearby city or town. While veteran neighborhoods are kept in a poor condition, new neighborhoods enjoy good shape and sound maintenance of apartment buildings. And, despite their self-representation as 'communal' living areas, private and public spaces in 'Towers in a Park' neighborhoods produce less of a communal lifestyle than portrayed in the advertisements.

Based on the research, we maintain that 'towers-in-the-park' form detached suburbs, even when they are located in the hub of the metropolitan area. The paper further discusses this aspect of urban living and concludes with recommendation regarding planning and development of new neighborhoods.

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4.3 Marketization, Neoliberal Housing Policies and the Housing Design. The Case of the Tokyo Metropolitan Area

Shun Yoshie, Waseda University, Japan

Housing supply after the war was the most important issue common to developed countries, and at this time rapid urbanization has progressed with the mass supply of buildings in many countries. In Japan, this urbanization continued throughout the period of high economic growth until the 1970s, and the urban space was spread rapidly forming a world's biggest metropolitan area. The mass supply of "2DK" living space based on "standard design" which was advanced at this time is now criticized as well known.

However, spatial transformation in current Japan is entering a different phase from urbanization in the 1960s and 70s. With the shift "from quantity to quality" of housing supply and the diversification of lifestyles, the "second wave of urbanization" is progressing. There, values including images and hobbies that cannot be explained not from traditional functional view are becoming more and more important by design and advertisement.

The second wave of urbanization progressed under the policy changes to the neoliberalism, during the period of bubble economy which started from 1980s. And the suburbs,

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once considered as homogenous residential areas, have undergone rapid diversification including the advance of commercial facilities, while the urban centre have also experienced the dramatic change by the population returning phenomenon.

Factors of this urban regression phenomenon are generally explained from the fall of land price in the downtown area, after the burst of the bubble economy in 1991. However, behind this large-scale population movements, we should not miss that the reorganization of value of living environment was progressed, under the marketization of houses and places lead by private companies.

In order to grasp the actual situation of the "second wave of urbanization", this presentation focuses on the market value of houses and desire of people. Based on the analyze of housing ads from 1980 to 2010, 7 typical types of "housing mode" in Tokyo metropolitan area were found, and it is pointed out that two contrasting types of houses are emerging from the 21st century: a house specializing in indoor values with varieties of common use spaces including library, café, gym and an observation platform only for residents, and a house for enjoying outdoor urban life with small living spaces.

4.4 Work and Mobility in Changing: Future of City Quarters

Nadezda Krasnikova, RWTH Aachen University, Germany

The social structural change in Europe has been causing flexibility in working and living worlds of people and mobility in everyday life.

Urban planning is confronted with a challenge to identify new forms of life, work and mobility and to provide concepts of quality of life and mobility for the sustainable development of existing city quarters. And not only in the national context, but worldwide.

Quarter structures of cities and history of their creation yet are challenging to research. Development of quarters since the 20th century comprises especially contrasting learning fields of organization and design of habitation, work and mobility in urban space and society. Functionally-mixed and compact quarters of city centre alongside car-oriented neighbourhoods of the 1950s to 1970s and the suburban areas have been impacting European cities.

So far there is a lack of studies that comparatively analyse historical spatial concepts and reality of these quarters of cities in view of interaction of habitation, work and mobility. Moreover, research works which study influence of the changing working and living worlds on mobility models and habitation requirements for the different, existing urban structures are missing. As a result, there is a lack of new starting points for sustainable and future-oriented development of cities.

Against this background the present PhD project aims (1) to develop an analytical model of interaction of work, life and mobility in urban space and (2) to design adaptation strategies for the sustainable future-oriented development of existing quarters of the city centre, of the car-oriented neighbourhoods of the 1950s to 1970s and the suburban areas of the city.

This goal is based upon three sets of questions:

1. Spatial and mobility analysis: Which actor-differentiated patterns of everyday mobility influence quarters of the city center, of the car-oriented neighborhoods the 1950s to 1970s and the suburban areas of a city today? What are quantitative and qualitative changes of mobility in this quarters in view of interaction of work and life?

2. Needs analysis: What are the current requirements of the residents for the spatial organization and design of the quarters researched in view of interaction of work, life and mobility? Which potential do this quarters have in this view?

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3. Assessment and action relevance: How can we assess the mobility patterns and structures of the quarters with regard to the general principle of sustainable urban development? What options are there for further development of the existing structures of the quarters in view of changing mobility, work and life requirements?

The research consists methodically of two parts: theory and empirical study. In the theoretical part an analytical model of interaction of work, life and mobility in urban space will be developed. The empirical study has a multiple-case design. 3 types of quarters of a city will be researched: the urban structures of the city centre, the car-oriented neighborhoods the 1950s to 1970s and the suburban areas. Quantitative and qualitative methods of social and spatial research are planned to be used for the case study. In detail they are: spatial and mobility analyses of selected quarters using mapping; statistical evaluation of economics, population and social development data on the selected city; interviews with the residents of the selected quarters; interviews with local experts.

The work is in the first phase, in detail: developing an analytical model, selecting the cases and designing the data collection method. The potential cities for analysis are: Essen in Germany and Jekaterinburg in Russia.

5 Abstracts of Session V: Diversification Perspectives in Mono-Structured Suburban Housing Morphologies with Elisabeth Beusker, RWTH Aachen University, Germany

5.1 Social Housing Stock under Pressure

Gisela Schmitt, RWTH Aachen University, Germany

The discourse in Germany on "housing provision" between state regulation and the free market as well as the public economy as a "third sector" has led in various phases to contradictory demands for "more state" or "more market". The fact that the supply of housing is principally market-driven implies the dual nature of the home as an economic and consumer good. For housing policy, this results in a permanent balancing act between the creation of investment incentives for private investors (in new construction and portfolio development) and the securing of housing supply at affordable prices, appropriate quality in acceptable (inner-city) locations. In view of the current tense market situation in major cities, several voices are calling for a return to tried and tested housing policy instruments such as social housing. In view of the drastic reduction in social and public housing in recent years, the available subsidies will, however, not suffice to provide a replacement - let alone create additional living space - with. In most major cities (see e.g. Berlin, Hamburg, Munich), the planned number of publicly subsidised new apartments per year does usually not even compensate for the reduction of the stock from previous subsidy years. As a result, the newly created publicly subsidised apartments are, in contrast to earlier times, "niche products" - which raises the questions for whom (in what quality, at what price) and where these apartments are to be provided in the city.

This lecture deals with these questions in the context of the traditionally grown peculiarities of social housing in Germany. In the first years after the Second World War, the government opted for property promotion and subsidising private investments in rental housing and home construction, so that already in 1960, the private share of construction activity was at 76%. Unlike in neighbouring European countries, the market share of non-profit organisations was comparatively small from the outset and was concentrated on large cities and the con-

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struction of large housing estates. From the outset, social housing was thus a ppp-model that relied on the cooperation of state housing promotion with private housing companies and individual owners. Since at the same time price and occupancy commitments were from the outset tied to the credit terms of the subsidy, the "social housing" fell back to the free market - a process which some housing experts call "temporary social use". As an indirect positive consequence, the German social housing stock has a comparatively high standard and can often be found decentrally in integrated urban locations, as the private builders paid attention to good standards and good locations in anticipation of the bond-free time.

Due to qualitative requirements such as energy efficiency and accessibility, but also due to the prices of urban properties the new building is considered so expensive that in many cases, it only pays off in the upper price segment. Profitable rents in the conurbations exceed ten euros per square meter in most cases. The delta to the rent granted for social housing must be achieved through subsidies and retraces the increase in market rents.

Even if, in purely numerical terms, new buildings cannot make up for the discontinuation of ties and occupancy rights in the social housing stock and even if rents are only occasionally inexpensive and no longer represent a corrective rent on the market, constructing new social housing) for the moment grants to the cities new social occupancy rights - yet, this alone will not completely solve the housing needs of the cities.

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5.2 Challenges of Restructuring Public Housing Estates in Tokyo Metropolitan Suburban Areas by Urban Renaissance Agency in an Aging Society – Strategies of Urban Renaissance Agency and Struggles of Local Authorities

Tomokazu Arita, University of Tsukuba, Japan

The Japan Public Housing Corporation (abbr. JPHC), the predecessor to the current Urban Renaissance Agency (abbr. UR), took the central role in supplying a large amount of apartments and housing estates for middle-class workers in metropolitan suburban areas in order to cope with the massive population inflow to Tokyo and other metropolitan areas since mid-1950s. At the same time, the public sector has directly supplied public housing for low-income households based on the Public Housing Act.

Today, most UR housing estates built from mid-1950s to the 1960s have become decrepit and obsolete. At the same time, the majority of residents in some of those old housing es-

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tates live in pensioner households. Thus, the role of UR rental housing estates has shifted to the function of a safety net to aid vulnerable groups secure a place of residence.

The Urban Renaissance Agency has taken on the role of a national housing development corporation and has changed its mission according to the changes in national housing policies in Japan. In Japan, the importance of mainstream housing policies following the Second World War has shrunk alongside the growing trend of neo-liberal policies and an aging population since mid-1990s (Honma 2004). Furthermore, the restructuring of large suburban UR public rental housing estates and changes to the missions of the UR have been carried out in accordance with the changes in national housing policies. The UR is planning on downsizing the total unit number of UR public rental housing estates (UR 2007).

Most the large housing estates constructed between mid-1905s to mid-1960s have been under total reconstruction programs, and the total number of new housing units managed by the UR has decreased. At the same time, certain surplus land areas were created from former housing estate land areas. UR sold those surplus land areas to private developers with development conditions aiming at preserving the existing living environment, and this approach has achieved a certain degree of success.

On the other hand, the UR has the policy of using many of the large housing estates constructed since the mid-1960s, as they have not been significantly reconstructed, although they are decrepit and obsolete.

Considering the sustainability of local communities, local authorities with UR housing estates have a strong desire to accommodate more young households to their UR housing estates by enforcing the renewal and reconstruction of the sites. However, the UR governs the initiative to redevelop or renew such UR housing estates. In the case of aged housing estates that have not experienced any significant renewal, residents become older and this leads to an increase in expenditures on public welfare. Therefore, there are significant potential gaps between the UR strategies of restructuring housing estates and the desires of local authorities for the renewal of them.

This paper aims at providing an overview of the UR's challenges in restructuring public housing estates in Tokyo's metropolitan suburban areas within an aging society, using case studies showing facts and problems with the some of the city's suburban UR housing estates.

5.3 Urban Development at Neighborhood-Scale in the 1960s and 70s Public Housing Stock, the Case of Ulaanbaatar, Mongolia

Olivia Kummel, ILS, Germany

When discussing public housing re-development, the issues of energy consumption and energy efficiency continue to be major challenges. Although substantial changes in energy production and consumption are allegedly main drivers in the current environmental scenario, seldom are energy consumption and urban development considered in an integrated approach.

Therefore, the cases of study is the 1960s and 70s public housing stock of Ulaanbaatar, as the city is known as the world's coldest capital, is of specific interest when considering energy consumption and energy efficiency. Mongolia experienced a comparatively young history of urbanization starting with the urban development of Ulaanbaatar in the 1920s. Since then, Ulaanbaatar has always thrived on the tension between sedentary and nomadic lifestyles as Nomadic families from the rural provinces are still pouring into the city (D'Alencon, Kummel and Ershuu 2016). Today, the city's urban structure comprises of a mixture between traditional Nomadic, public housing blocks and market-driven housing estates constructed

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after the political turn in the 1990s. Over twenty per cent of its population lives in these pre-fabricated, mainly pre-cast concrete panel buildings.

To study the urban development in the housing blocks on their street, open spaces and building levels, this research will use an urban morphological method (Kropf 2017) of analysis. The focus lies on a comparative appraisal of the redevelopment/refurbishment of public housing at neighborhood-scale and energy consumption. Analyzing at the scale of the neighborhood will enable to simultaneously address the urban and the neighborhood scales. This study demands a substantial discussion of the urban consequences such changes entail at the scale of the built stock. This leads to the following research question: what is the current role and potential of the 1960s and 70s housing stock in supporting an energy efficient and sustainable urban development in Ulaanbaatar?

The research explores common ground features in the context specific urban design and energy consumption. Furthermore, this will enable to evaluate the sustainable development integration in policy and action at the community level. Drawing on the comparison of different neighborhoods, ways forward are proposed for integrated sustainable urban development at neighborhood scale for each analyzed neighborhood.

5.4 Large Housing Estates and Communities: Inner Diversification and Attractiveness for Younger Generations of Housing Estates in Ostrava-Jih (Czech Republic) after Socialism

Yuno Tanaka, Tokyo Institute of Technology, Japan

Housing estates of prefab panel apartments had been constructed in the latter half of the 20th century in the Czech Republic and about one third of the total population has lived in such apartment housings until today. These housing estates developed under socialism has been often talked with negative images, but they have accumulated their own histories and actual present situation of these residential areas are various.

In this research, the inner diversification and attractiveness for younger generations of housing estates are clarified by the case study of Ostrava-Jih (Zábřeh, Výškovice, Hrabůvka, Dubina and Bělský les areas), one of the largest housing areas in Ostrava city, Czech Republic. The survey is divided into two steps. First, transformation and inner differences of Ostrava-Jih are shown by field survey and interviews. Second, the evaluations about present situation of Ostrava-Jih are clarified by the interviews with fourteen inhabitants.

(1) Transformation and inner differences of Ostrava-Jih:

Ostrava city had developed as an industrial city under socialism and at the same time panel housing estates, mainly Fifejdy, Poruba and Ostrava-Jih areas, had constructed. However, Ostrava city faced deindustrialization and population decline after democratization. The priority matter for the municipality of Ostrava city is to create new job opportunities but the regeneration of prefab panel housing estates is not their first concern.

There are area differences inside of Ostrava-Jih such as development period, apartment types (low-rise to high-rise), and age group rate, etc. Besides, gentrification, conversion of prefab panel apartment to accommodations for low-income people and new developments of playgrounds and large shopping facilities are seen after democratization.

(2) Attractiveness for younger generations:

Firstly, green open space is one of the big attractiveness for the inhabitants. Many interviewees talked about green spaces connected with their good memories with their families. Secondly, accessibility to commercial facilities and public transportation system is also highly evaluated. Transportation system and local centre of each area planned under socialism have performed well until now and after democratization, more commercial facilities were

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built even in the areas where local centre had not been existed before such as upper Zábřeh and Dubina areas. Thirdly, reasonable price for renting or buying an apartment flat is one of the important reasons why house seekers decided to obtain their apartments in Ostrava-Jih. Besides, inhabitants' voluntary actions to make their living environment more attractive are seen. For example, neighbours made a sandbox and a football goal post by themselves for children and this action brought out the municipality's support for maintenance.

In conclusion, the younger inhabitants who started living in Ostrava-Jih after democratization found much attractiveness which was realized both before and after democratization. In addition, the interview shows even the shortage of amenities such as children's playground can be a seed for new attractiveness and strengthen the community attachment by the inhabitants' voluntary action. The transformation of housing estates developed under socialism might not be always going well, but possibilities of better growing can be found even under difficult situation.