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Post-suburban revitalization? Redevelopment of suburban business centres in the Frankfurt/Rhine-Main region

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ABSTRACT

This paper focuses on urban revitalization strategies and regeneration of suburban business parks in the Frankfurt/Rhine-Main region in Germany. Due to the polycentric city region’s strong economic development in the past decades, suburban business centres have been developed outside the traditional city cores. Back offices of large banks, foreign companies’ German headquarters and corporate services are often located here. Because these locations have diverse planning and realization periods they show a differentiated picture in terms of building structure, mix of uses or quality of public space. In order to get an overview of specific characteristics of suburban business locations, the paper analyzes these sites in terms of their quality of place and identifies two specific types. This classification is illustrated with two case studies located in Frankfurt and Eschborn.

Introduction

The centres of the global knowledge economy are no longer only to be found in inner cities; thanks to the increasing importance of ‘soft’ locational factors as well as the flexibility in choice of location and technological improvements, knowledge-intensive service companies are now also appearing in so-called “international business centres” (Jacob Trip 2007, 275) in the suburban hinterland of metropolises. In the process of rescaling urban qualities (Brenner 2004), the suburbs of metropolitan regions are gaining in functional importance. Thus, locations with urban qualities, such as designed public spaces, mixture of uses or high architectural standards are increasingly being developed at the periphery. In past years, research into the revitalization of these locations—especially in the American discourse—has grown considerably and has particularly directed its attention to mixed-use development, the orientation and legibility of the urban structure as well as the quality of public spaces (cf. Dunham-Jones and Williamson 2009a; Talen 2011; De Jong 2014). Here, the debate has largely taken place from the perspective of sustainability and encompassed the topics of smart growth or New Urbanism. Questions regarding the extent to which this research has also gained in importance in the European discourse, how this is manifested in various
programmatic directions and how the revitalization of such sites is being addressed remain open. At the same time, it is apparent that an increasing number of elaborately designed and planned sites have been developed in Europe’s large metropolitan regions over the past years, frequently being marketed for high returns using labels such as ‘Business Park’ or ‘Office Park’.

Considering these underlying conditions, the goal of this paper is to characterize both existing and new suburban business park sites in and near Frankfurt am Main, Germany, with regard to their location and urban characteristics, such as growth dynamics, regulation of urban design, mix of uses or connection to transport networks. The goal of this is to produce implications for the significance of urban design in suburban business parks. The paper poses the following research questions:

- Which modes of revitalization and characteristics of urban design can be identified?
- To what extent do building regulations affect the design of the business parks in the Frankfurt/Rhine-Main region?

What are the differences between existing and newly developed sites in the metropolitan region of Frankfurt/Rhine-Main? The metropolitan region Frankfurt/Rhine-Main is characterized by an outstanding metropolitan function at the European and international level and, as a global city, is home to a number of international business headquarters. In order to identify relevant locations, secondary statistical data on the distribution of locations of
knowledge-intensive service providers will be analyzed. Business park locations in the region will be selected based on indicators such as the share of service providers as well as their location within the urban area. Complemented by aerial photo analysis, 22 locations within the Frankfurt/Rhine-Main region (see Figure 1), which are designated as business parks both functionally as well as in terms of their urban design, will be selected and examined in terms of area size, functional distribution, suburban location and focus on knowledge intensive clusters. By doing so, various locations types can be identified and compared.

This paper looks at two case studies in detail. Gateway Gardens (Frankfurt am Main) (Figures 2 and 3) and Gewerbegebiet Süd (Eschborn) (Figure 4) illustrate differential developments in the office real estate sector and will be contrasted with each other. The office location Eschborn Süd has existed since the 1970s, while Gateway Gardens has been developed since the 2000s. The depiction is based on in-depth analyses of the locations in terms of their local arrangements which deliver insight into the quality of their urban design as well as their functional amenities. These analyses are complemented by guided qualitative interviews with stakeholders, including real estate agents, commercial property owners, site managers, trade associations and municipal and regional planners. In this way, criteria relevant to the revitalization of office parks based on their urban design will be presented in detail.

Urban business parks in (post-)suburbia?

The economic-functional, spatial-structural and cultural process of metropolization is leading not only to a general increase in the significance of metropolitan regions (Brenner 2004) or global cities (Sassen 2001), but also manifests itself in new regional patterns of

Figure 2. Impressions of the status of development in the business park Gateway Gardens. Source: author.
Figure 3. Overview of the division of uses and future plans in the office park Gateway Gardens. Source: author.
interconnection that leave their mark on the suburban areas of these regions. The emergence of new information and communication technologies that took off in the 1990s constitutes a radical transformation of the means of production, distribution and exchange. In addition to digitalization and a digital world of work, the transformation of the economy from a manufacturing based economy to a service-based one is of meaning for the gaining importance of suburban business parks. In addition, flexible working time models (part-time, home office, multi-jobbing) are leading to new spatial requirements, such as accessibility, but simultaneously to a spatial decoupling. In this context, the importance of location factors decreases, so that both temporal and spatial decoupling processes take place. Moreover, the liberalization of the global economy (with the elimination of customs duties, the simplification of restrictions on foreign direct investments, the development of a global monetary system 24/7 and the reduction of transport and communication costs) has led to changes in the demands for suburban business locations. The connection to the international market represents a decision variable for global companies. Against this background, suburban locations that are initially at a disadvantage, however, are often characterized with good infrastructure links and accessibility. As a result of a polycentric metropolitan spatial structure, international business centres or ‘new downtowns’ (Helbrecht and Dirksmeier 2009) no longer just evolve at central locations within inner cities, but are also increasingly visible in suburban areas (Jacob Trip 2007). Likewise, the process of regionalization from formerly monocentric core cities to polycentric urban regions (Kloosterman and Musterd 2001) or mega-city regions (Hall and Pain 2009) leads to a deconcentration of business activities and the rise of polycentric urban regional structures (Burdack and Hesse 2006). Data for Europe show that growth is not linked to a lowered significance of the suburbs, but rather to a
continual redevelopment of the division of labour between city and suburb as well as an increasing differentiation between individual locations (Knapp and Volgmann 2011).

Converted cultural demands on urbanity can be seen in altered city types. Suburbanization and reurbanization occur in increasing tensions between spatial centralization and decentralization simultaneously. Edward Soja (2000) speaks of the 'Postmetropolis' to bring the changing urbanization phenomena. In the concept of 'Third Place' Soja expanded the understanding of the Postmetropolis at the level of lived and experienced environment that consolidates itself in the mind (Soja 1996).

These courses of development bring along new post-suburban policies in which local politics as well as the interests of the private sector are oriented towards the longer-term practical value of a place and the collectively produced and consumed urban qualities of residents and companies, thus no longer acting in the sense of a pure 'growth machine' (Phelps, Wood, and Valler 2010). The retrofitting of suburbia as post-suburbia and the subsequent urbanization of this post-suburbia, which had already been discussed in the anti-sprawl debate of the 1990s, play a key role in this (Dunham-Jones and Williamson 2009a; De Jong 2014). Increasingly exploited land in post-suburban space also showed signs of ageing and could therefore not meet contemporary demands on use.

Here, it must be assumed that the revitalization of these locations also gains new significance thanks to tertiarization into a service- and knowledge-based society. While it was at first assumed that knowledge-intensive service providers prefer central locations within metropolises, new perspectives show that a deconcentration of knowledge-intensive services has taken place since the 1980s, thus strengthening the regional structure of metropolitan areas (Pain 2012). This new development is characterized by the growth of service functions in the suburbs, which not only encompasses back offices, but also headquarters (Phelps et al. 2006). At the same time, the role of knowledge-intensive service providers is gaining in importance for growth and inter-urban competition (Taylor 2004; Hall and Pain 2009).

With the increase in the significance of knowledge-intensive industries, which demonstrate altered spatial demands and shape their own value chains in different ways, a diversification of the locational demands of knowledge workers can be seen. At the same time, demands on office locations have changed over the past decades; as Florida already spoke about in his works (2002), the urban quality of a professional environment, which he describes as ‘quality of place’, is becoming increasingly important to knowledge workers. In addition, Helbrecht and Dirksmeier (2009) show that the dependency of urban design and economic development in knowledge-intensive business is also relevant for German cities.

This development leads to a possible mismatch between supply and demand on the office real estate market and in existing business parks, which frequently exhibit a monofunctional structure and architecture. However, it can be noted that very little is known about the role of urban quality in existing as well as newly developed business parks in the suburban hinterland (Jacob Trip 2007).

**Edge cities in Europe?**

The increasing emancipation of American suburban space was controversially discussed as early as the 1990s. Terms such as ‘technoburbs’ (Fishman 1987), ‘edge cities’ (Garreau 1991) or
‘exurbia’ (Soja 2000) describe these developments. Here, edge cities represent a “location that has five million square feet or more of leasable office space …, 600,000 square feet or more of leasable retail space …, more jobs than bedrooms … [and is] perceived by the population as one place” (Garreau 1991, 6f). The definition underscores the problem of the transferability of the model onto other cultural circles, so that the “that ‘edge city’, despite its loose definition, is now so firmly invested with a sense of the form that its use has obscured points of potential comparison between post-suburban developments and other settings” (Phelps et al. 2006, 40).

The New Urbanism movement criticizes the use of land and sprawl in metropolitan regions and demands turning away from this pattern. The subject of its research is first and foremost suburban space, which is why “the New Suburbanism might be a truer label” (Scully 1994, 221). Judith De Jong also uses the term ‘New Sub/urbanism’ based on the idea that New Urbanism, which recommends architectural centralization, is a hybrid located between urban and suburban planning approaches in the sense of post-suburban ‘edgeless cities’. These cities have spatial, structural and functional repercussions for the core city and its hinterland (De Jong 2014). In line with an appreciation of the historic city and of urbanity, as Jane Jacobs already argued for in 1961, urban planners are not only turning toward the historic qualities of a city, but are also beginning to address post-suburbia while considering sustainability and other environmental concerns. In its Charter of the New Urbanism from 2001, the Congress for the New Urbanism demands the implementation of principles that deal with a mix of uses, accessibility through modern transport systems, walkability, the development of open spaces and the design of public spaces, and additionally demand that architecture be adapted to its surroundings in terms of both design and function (Congress for the New Urbanism 2013).

The revitalization of edge cities is frequently illustrated using practical examples such as Irvine, California, or Tyson’s Corner near Washington, DC, which are considered pioneers in this development (Dunham-Jones and Williamson 2009b). Revitalization principles are one part of the literature that deals more closely with strategic approaches (Booth, Leonard, and Pawlukiewicz 2002). Strong linkages can be seen in the contents of these principles and the ideas and demands of the anti-sprawl movement, which address not only the connectivity and pedestrian-friendliness of a neighbourhood, but also elements of planning strategy such as the development of a vision, the creation of public-private partnerships and management aspects (‘understand your position in the market’; Booth, Leonard, and Pawlukiewicz 2002).

The European context is characterized by a different embeddedness (Phelps, Wood, and Valler 2010) of the debate concerning suburban service locations, and for this reason, a different path of development can be found. A variation of European-style edge cities is apparent (Bontje and Burdack 2005), although a number of developments are also evident within Europe and this cannot necessarily be generalized (Pumain 2004). In the sense of a polycentric structure, shifts to locations in the traditional centre do not take place, but rather substitutions and cross-linkages as well as functional differentiations (Kloosterman and Musterd 2001; Phelps and Vento 2015). While similarities to American edge cities are visible in terms of functional complexity, quantitative size in development and the number of jobs (Phelps and Parsons 2003; Bontje and Burdack 2005), European edge cities are especially characterized by stronger infrastructural and functional connections to the core area, which are a result of the greater role of public transport in Europe (Phelps and Vento 2015).

Interest in research into the revitalization of these locations is also growing in Europe, although the discussion has not yet settled into the political discourse on the continent, nor have stakeholders perceived its potential value (Carmona, De Magalhães, and Edwards 2002;
Jacob Trip 2007; Kloosterman and Trip 2011). Here, Marique and Reiter (2014, 149) conclude that “beyond the traditional polarisation of the debates on energy efficiency of our build environment between the ‘compact city’ and the ‘sprawled city’, a new pragmatic paradigm, focused on the sustainable transition of suburban areas … can make suburban areas evolve toward greater sustainability”.

In Germany, the architectural, spatial and planning dimensions of suburban areas have been increasingly discussed since the turn of the twenty-first century, triggered in particular by Thomas Sieverts’s (1997) book ‘Zwischenstadt’ (lit. ‘Between-City’). In 2004, a study of the Rhine-Main area was conducted (Bölling and Sieverts 2004) since the region shows all the signs of a so-called Zwischenstadt: processes of growth and shrinkage as well as spatial differentiation and reconcentration, which has created a mosaic of old village centres, new residential projects and old and new industrial areas (Hesse 2010).

The revitalization of office and commercial areas has become particularly relevant since 2008 owing to the consequences of the global financial and real estate crisis. Spatially divergent developments on the office market are also an issue, since central inner-city locations in particular have been predicted to grow while peripheral locations in suburban office areas outside of the core only offer minimal growth potential, focused mostly on high-value objects (Bundesministerium für Verkehr, Bau und Stadtentwicklung (BMVBS) 2013). Apart from the ageing built stock, the advantages and disadvantages of such a deconcentration as well as urban design and architecture are being addressed (Wüstenrot Stiftung 2013; Berndgen-Kaiser et al. 2014; Marique and Reiter 2014).

In contrast to American service centres, such dimensions of an edge city have only infrequently appeared in Germany, especially since the definition of an edge city requires a connection with shopping centres. Because of the functional dominance of existing city centres as well as the open space protection stipulated by German planning practice, a mosaic of settlement structures with various growth and shrinkage dynamics has taken shape in Germany (Siedentop et al. 2003). However, parallels can be ascertained in the discourse surrounding the urban revitalization of suburban commercial areas, which pick up on American New Urbanism discourses as well as on monofunctional structures or on poorly developed accessibility for public transport (Basten 2005). However, a more holistic observation and a continuing discussion on the revitalization of such locations in the sense of a refitting, meaning the revitalization of buildings, public spaces and accumulation of additional uses as well as the consideration of quality of place, are missing. However, it is precisely this discussion that is important owing to the locations’ often strong functional infrastructure as locations of internationally active companies. It should be assumed that such companies have high demands on the design of such areas, for example, in terms of their architecture, the design of their open spaces or the accessibility of buildings. The design of public spaces, their functional connection to the urban area or the adaption of architecture appears to be of rather low significance within the discussion, possibly due to existing real estate speculation in today’s entrepreneurial urban planning (Harvey 1985; Kloosterman and Trip 2011).

(Re-)Design and the indicators for ‘quality of place’ of suburban service centres

A few research studies from Europe have focused on the revitalization and (re-) design of suburban service centres and, in so doing, have identified various relevant design elements
(among others, Bremer 2001; Jacob Trip 2007; Dogma 2015). In particular the following elements are significant for a design-based redevelopment of European business edge cities:

- Built structure and granularity: The arrangement of buildings on the surface has a considerable impact on the urban-spatial expression of a location. Apart from subordinated elements that construct space, it is the building that sets and effectively determines the arrangement of streets and open spaces.
- Parcelling: Since the manifestation of the buildings is strongly dependent on the dimensions and sizes of the available building plots, the parcelling of a site has a great influence on the urban-spatial design of a commercial area. Parcelling helps determine the degree of granularity to which an area can be developed, the scale to which the built fabric envelops public space and the amount of space that individual buildings are allowed to take up.
- Open spaces: The structure and design of open spaces is, apart from the built structure, parcelling and the development system, an important component of urban design. If existing green corridors are picked up on, ideal locations for recreation and leisure facilities are often created to the benefit not only of employees, but also of residents of the neighbouring areas.
- Architecture: Apart from the urban development plan, which stipulates the granularity of the built fabric with its structure and parcelling, defines the important public (street) spaces using the development system, and whose green and open spaces influence the overall structure of a site, the architectural design of buildings also plays an important role. Architecture has less of a spatially structuring character, but still significantly contributes to the overall impression of an area by defining facades, roof shapes, materials and colours.

The Frankfurt/Rhine-Main region as a global economic hub

In order to investigate this study’s thesis, the ‘quality of place’ (Florida 2002) in suburban service centres will take on central importance.

The present study, which investigates urban and design-related qualities, takes aspects of urban design into close consideration. The international discourse surrounding urban design emphasizes diversity in terms of both architecture and function. In this regard, Durmaz (2015) argues that locations of social interaction as well as walkability and connectivity are outstanding elements of quality of place. For this reason, both aspects of the built environment, such as the type and scope of the building uses or the differentiation of public spaces as well as aspects that rather deal with functional considerations such as the mixture of uses or accessibility, are considered when assessing diversity (see Table 1). In turn, a location typology can be conducted using the indicators that have been developed.

As the leading centre of finance in Germany, the Frankfurt region distinguishes itself as a global city. In addition, as the headquarters of numerous foreign automobile, pharmaceutical and chemical companies, Frankfurt is, after London, Paris and Rotterdam, one of the most important hubs of the metropolitan economy, fulfilling an enormous gateway function with Germany’s largest internal airport (Beaverstock et al. 2006). The Stock Exchange and the clustering of banks as well as stock and financial services strongly attract foreign banks.
and companies. The Frankfurt Stock Exchange has been able to successively take over the trading functions of other German cities and consolidate the majority of market share in regional stock exchanges, thus sustainably strengthening the attractiveness of the location, illustrated, for example, in the settlement of the European Central Bank in the city. As a result, this comparatively small international financial centre with a population of only 716,000 has developed into the most important financial location and to one of the most important banking locations in the world (Growe and Volgmann 2010; Stadt Frankfurt 2015). In addition, neoliberal municipal politics are at play. The planning politics are closely tied to the pressure to develop at the pace needed to remain a global city. With the goal of further developing office space for financial and service companies, an increasing number of institutional investors using hedge funds or real estate investment trusts have been appearing since the 1990s (Ploeger 2004; Heeg 2012).

In this regard, particularly the core city of Frankfurt is undergoing a transformation process in which new projects are developed, many of them representing high standards for the demands of the knowledge economy. The adaptive re-use of former industrial locations or brownfields (the Europaviertel, the developments near the central rail station or the development of the headquarters of the European Central Bank) as well as new waterfront developments (e.g. the Westhafen and Osthafen) are only a few examples of new competing locations for the traditional city core location. These ‘new downtowns’ are gaining international attention not only thanks to their central location but also due to their architecture, urban design, public space and process quality of their development (cf. Helbrecht and Dirksmeier 2009).

This economic significance does not just concentrate itself in the core of Frankfurt, but also produces a number of functional and economic interconnections with the city’s suburban hinterland (Krehl 2015). Here, strong densification in the western and southern parts of the region can be found, while the region’s northeast is a largely rural/suburban residential location (Knippenberger 2015). Particularly since the 1970s an increasing amount of land has been taken up by business services. Since the 1980s, a mostly independent development

Table 1. Selected quality of place indicators.

<table>
<thead>
<tr>
<th></th>
<th>Preferred urban design status</th>
<th>Captured by</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mix of uses</td>
<td>Functional distribution of uses in the area (e.g. area ratio)</td>
</tr>
<tr>
<td></td>
<td>Mixed-use building complexes Vertical and horizontal distribution of uses Diversity of uses in terms of quality and quantity</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Public spaces</td>
<td>Classification (plazas, streets, parks, etc.) Sizing Organization of parking</td>
</tr>
<tr>
<td></td>
<td>Design of public space Vegetation and natural elements Options for appropriation</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Building and land use</td>
<td>Storey heights Building ground floor space and granularity Materials and building age</td>
</tr>
<tr>
<td></td>
<td>Architectural quality and diversity Visual correlations and visual edges Reasonable storey height and land marks</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Street space</td>
<td>Number of public meeting points Whereabouts, furniture for resting Connection between street and ground floor</td>
</tr>
<tr>
<td></td>
<td>Efficient and hierachical road system Reasonable surface Parking space vegetation and design</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Mobility and walkability</td>
<td>Accessibility by public transport and Motorized traffic infrastructure for pedestrians (paths, Traffic lights etc.)</td>
</tr>
<tr>
<td></td>
<td>Accessibility by public transport Underground parking space and central organization Availability of alternative mobility options</td>
<td></td>
</tr>
</tbody>
</table>

Source: author.
Table 2. Overview of the indicators used to categorize different location types.

<table>
<thead>
<tr>
<th>Location</th>
<th>Growths Dynamics</th>
<th>NEWLY DESIGNED LOCATION</th>
<th>TRANSFORMATION LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HIGH</td>
<td>The location has strong growth in regard to new development; demand for office and commercial space is consistently high.</td>
<td>MEDIUM - HIGH The location has moderate growth, demand for office and commercial space varies; apart from fully leased real estate, individual vacancies and open lots exist.</td>
</tr>
<tr>
<td>Land Area</td>
<td>MEDIUM</td>
<td>About 25 to 60 hectares</td>
<td>HIGH About 60 to 120 hectares</td>
</tr>
<tr>
<td>Connection to Transport Network</td>
<td>HIGH</td>
<td>The location can be reached using a number of modes of transport (multimodal; airplane, high-speed or normal-speed train, road network).</td>
<td>The location is well connected to a road network and can be quickly reached by car; public transport is reachable; new mobility systems or a connection to an airport are not present.</td>
</tr>
<tr>
<td>Job Density</td>
<td>HIGH</td>
<td>Average of about 350 jobs per hectare</td>
<td>MEDIUM Average of about 200 jobs per hectare</td>
</tr>
<tr>
<td>Morphology</td>
<td>Mix of Uses (Customer Services, Business Services)</td>
<td>MEDIUM - HIGH</td>
<td>MEDIUM</td>
</tr>
<tr>
<td></td>
<td>The location features a number of different economic sectors and complementary services as well as food services and retail stores.</td>
<td>The location features different economic sectors and partially also complementary services or food services and retail stores.</td>
<td></td>
</tr>
<tr>
<td>Building Age</td>
<td>Homogenous Building age is largely the same, with a maximum of 10 years.</td>
<td>Heterogeneous Building age is largely disparate and differs by more than 10 to 15 years. The buildings are often already many decades old.</td>
<td></td>
</tr>
<tr>
<td>Public Space</td>
<td>HIGH</td>
<td>Public spaces exist as parks and squares with a high quality of design and that allow for sojourn. Streetscapes have a high quality of design and feature vegetation and parking spaces.</td>
<td>LOW Public spaces hardly exist. Streetscapes are functionally designed and display few possibilities for design or sojourn.</td>
</tr>
<tr>
<td>Mix of Sectors</td>
<td>LOW</td>
<td>The location is home to business services with a high degree of international activity, including, for example, financial services, business consultancies, hotels or insurance companies.</td>
<td>HIGH The location is home to business services with national and international activities as well as to retail, food services and hotels. Companies include financial services and IT and communications companies.</td>
</tr>
<tr>
<td>Governance</td>
<td>Regulation of Urban Design</td>
<td>HIGH</td>
<td>LOW</td>
</tr>
<tr>
<td></td>
<td>Urban design instruments and regulations such as design handbooks and bylaws exist for the location and are also implemented and observed.</td>
<td>No urban design instruments or regulations such as design handbooks and bylaws exist; solely a development plan with few limitations exists.</td>
<td></td>
</tr>
<tr>
<td>Level of Management</td>
<td>HIGH</td>
<td>The location is often managed by a development company, partly in Public-Private-Partnership (PPP) Models. Marketing and communication are highly professional.</td>
<td>LOW The location is developed my market driven demand and often coordinated by the city administration. Marketing and communication are at a low level.</td>
</tr>
</tbody>
</table>

within the city’s suburbs has taken place, and functional emancipation and post-suburbia might be considered to have been present as early as then. Here, economic growth has been mainly concentrated on the data processing and software development sectors and, since the early 1990s, on globally oriented service providers (Ploeger 2004). In particular, the Taunus region north of the city has experienced strong growth. The analysis of secondary statistical data shows a functional consolidation of those employed in the service sector as well as of all workers who are subject to social insurance contributions (see Figure 1). This paper also demonstrates a spatial concentration of suburban service locations. The micro-level analysis of selected locations shows both functional and urban-spatial differentiation and specialization of suburban service centres. These often correspond with the different courses of development of the locations as well as with the stakeholders. Functionally specialized locations appear and often display a high-quality urban and architectural character (‘Airport Cities’, ‘Science Cities’). These expand the offering on the office real estate market. Apart from this, the existing service centres also exhibit various dynamics as well as different functional and urban situations. In this way, locations with a rather stagnant character, which can apparently survive on the market without any further urban qualification, can be observed. Locations also exist that are either fully or partially affected from dynamics of change.

Typology of locations

In the micro-level analysis particular characteristics repeatedly appear and allow for grouping and typologization. The resulting typology encompasses multiple levels; in terms of the functional level, differences in growth dynamics, job density, the mixture of sectors as well as the connection to the transport network are apparent. Urban planning factors such as the size of development areas, building age and the configuration of public spaces as well as the instruments that have been implemented to guarantee design integrity can be observed. These criteria largely result from the urban quality characteristics. Functionally specialized locations appear that often manifest a high-quality urban and architectural character and these are especially reflected in the built organization, the architectural quality and the design of open and street spaces. These locations expand the offering on the office real estate market.

The two types of locations can be characterized as follows.

The first group consists of newly designed locations. These mostly exhibit high dynamics of growth and have been developed in the recent or very recent past (within about the past 10–15 years). They follow strict design stipulations such as handbooks and regulating development plans that determine and control the number of floors, cubature, orientation and materiality of buildings. These newly designed locations also have higher demands on the mixture of uses, especially in the area of food service and supply functions. Residential uses have also partially been implemented. The buildings are generally very young; most of them were constructed within a few years of each other and therefore lead to a homogeneous architecture. Public spaces have a high-quality design and therefore also good sojourn qualities. A particular characteristic of these locations is their connection to high-speed mobility networks such as airports, high-speed rail stations and motorways, through which the accessibility to the site can be significantly improved, particularly for internationally active global players. The job density in these newly designed locations is also very high in comparison
to other types of locations (approximately 350 jobs per hectare). The average size of these areas is between 25 and 60 hectares. Typical examples of this type of newly designed location in the Rhine-Main region include Gateway Gardens (Frankfurt am Main), Techpark TZ (Darmstadt) and the Campus Riedberg (Frankfurt am Main).

The second type can be called **transformation locations**. These locations display moderate to high dynamics of growth and change and have continually undergone change since their inception in the 1960s and 1970s. Few measures are used to regulate urban design; for the most part, only development plans with limited constraints exist. These limited measures manifest themselves in the structural as well as typological diversity of the built uses in these locations. Thanks to a comparatively long development process, the architecture of the buildings is heterogeneous and strongly varies in terms of materiality, building style, the number of floors and the orientation of buildings. The mixture of uses is moderate; apart from small-scale food services and retail stores, almost all buildings within these locations are designed for services and office uses. The mix of sectors in such locations is strongly oriented towards business and financial services. Public spaces are underdeveloped and, in many areas, large-scale aboveground parking areas are apparent. Job density in these locations is moderate, with approximately 200 jobs per hectare. However, these locations have the largest land areas of all location types at between 60 and 120 hectares. The granularity of buildings is also very diverse when compared to other location types. The primarily large office towers are often located next to small-scale auxiliary and special buildings that are quite varied in their granularity. Typical examples of this location in the Rhine-Main region include Gewerbegebiet Süd (Eschborn) and Bürostadt Niederrad (Frankfurt am Main) (Table 2).

It can therefore be stated that the types of different locations are also subject to different dynamics and change processes. In order to highlight these dynamics and illustrate current developments within the business parks, two case studies will now be introduced that are characteristic for both the typology and for contemporary developments in suburban service centres in the Frankfurt/Rhine/Main region. Using the aforementioned typology, they are to be assigned to the two groups ‘newly designed locations’ and ‘transformation locations’. The newly designed location encompasses the developments in the service and business park Gateway Gardens, which will be displayed opposite to the dynamics of change in the transformation location Gewerbegebiet Süd in Eschborn. In the course of this juxtaposition, comparisons of the urban design and functional infrastructure of the office parks can be made in order to be able to draw implications about the qualities of place in these locations.

**Case study 1: Gateway Gardens (Frankfurt am Main)**

The office park Gateway Gardens is located south of the inner city of Frankfurt am Main and directly next to Frankfurt International Airport. The site has a land area of approximately 35 hectares and was home to American military barracks between 1945 and 2008. Following the departure of the American army and the release of a development plan in 2008, the site has been prepared and marketed in individual development phases. Here, the proximity to the Airport and the connection to its high-speed rail station as well as direct access to the motorways A3 and A5 have been deciding locational factors that have already attracted a number of global players. Until now logistic companies such as DB Schenker and Lufthansa...
as well as hotels have settled at the site. In the future, the construction of a new commuter rail station will also connect the site to the public regional transport network (planned by 2019) and should create up to 18,000 new jobs over the long term (Entwicklungsgesellschaft Gateway Gardens 2014). In addition, the location also features a bike-sharing system and aspires to implement a long-term cooperation for the development of a commuter shuttle to the airport (Interviewee A, May 2015, Frankfurt am Main).¹

**Morphology**

The project can be classified as a *newly designed location* and displays long-term marketing that is oriented towards economic sustainability in a public-private partnership model, which has set high standards both in terms of urban design and implementation as well as of the realization of individual projects. A particularly special characteristic of this location is the detailed planning of the project. For example, prior to the creation of the development plan in 2008, a design concept containing precise statements about site development and open spaces as well as building cubature, height, materiality and facades was published. This concept is intended to inform the stepwise development of the location and thus result in a high quality of urban design, which should be especially evident in the strict observation of independent rules (Stadtplanungsamt Frankfurt 2016). A design handbook was conceptualized by external architectural offices and addresses in great detail the materiality, cubature and orientation of buildings as well as the transitions between private and public spaces. These design stipulations are the foundation for every development within the area. Apart from the urban structure with its balance of proportions and floor numbers between buildings, this is also especially visible in public spaces. For example, a designed park acts as the centre of the district and is enlivened by gathering places as well as outdoor seating from the neighbouring restaurants and cafés. Over the long term, the area strives to achieve certification through the German Sustainable Building Council (DGNB).

**Location**

The high degree of flexibility offered by a dense transport network supported by a diversity of modes of transport (airplane, train, as well as car) is especially attractive for internationally active service companies such as consultancies, financial services or IT firms, which are also the types of businesses that have primarily settled in the area.

To date, approximately 30% of the parcels have been marketed and developed. The development corporation has intentionally pursued this comparatively modest speed of development in that it only allows investments that fit into the design concept and have been planned over the long term (cf. Interviewee A 2015). Following the completion of an architectural competition to realize the four focal points of the district, these projects are slated for implementation as the next major building blocks in the area (cf. Gateway Gardens Entwicklungsgesellschaft 2014). An amendment of the development plan was already set in motion in 2015 in order to rearrange the development of building plots as well as to reorganize the construction sites. This also gave a legal footing to the redesign of the district’s focal points (Stadt Frankfurt 2015).
Governance

Since 2005, the location has been planned and developed by a consortium of private developers and the City of Frankfurt. This development agency, called Gateway Gardens Entwicklungsgesellschaft, is a private public partnership-model with a 50/50 share between city and private developers and can combine professional know-how from real-estate-developers and the regulatory influence of the city of Frankfurt. This allows a very structured and professional development of the location.

For the sake of comparison, the location Gewerbepark Süd in Eschborn will now be introduced.

Case study 2: Gewerbegebiet Süd (Eschborn)

Gewerbegebiet Süd (Eschborn) (‘business park south’) in the City of Eschborn is located approximately 8 km from the centre of Frankfurt. The industrial area is situated immediately adjacent to the city boundary of Frankfurt and can be seen as an expression of the suburbanization process of the early 1970s. Currently, the district encompasses an area of approximately 120 hectares and employs approximately 19,000 people (Stadt Eschborn/Wirtschaftsförderung 2015). The first companies to settle in the area arrived in 1968 with the aid of the real estate firm Gertler, who marketed the site as an ‘alternative to the commercial location of Frankfurt’ (cf. Website Gertler). Following this initiative, a development plan for Gewerbegebiet Süd (Eschborn) was created in 1971. This has been amended and revised several times, and six appendices to the development plans for the area now exist. The elements meant to guide urban design in these plans are very weakly developed and are mainly limited to set-back lines, the number of floors and zoning categories (GE). Beyond this, no further design guidelines or concepts exist.

Morphology

This lack of building laws and regulations to control urban design manifests itself in the built environment. A strong heterogeneity in terms of architecture as well as building age and material is evident in Gewerbegebiet Süd. New parcels in the district are being continually developed, and new buildings that correspond with contemporary architectural qualities are being erected. As such, significant new developments (i.e. a building for Deutsche Börse AG, Germany’s leading Stock Exchange) exist in certain areas of the district. This new development partially extends into Frankfurt city limits and can thus no longer be explained by commercial tax benefits alone. The utilization rate of leasable space in the individual buildings greatly varies; in some cases, entire buildings with many thousand square metres of commercial space are vacant. No clear planning patterns emerge regarding the orientation of the buildings, lots, materiality and the number of floors in Eschborn. The buildings often come across as having been arbitrarily placed and as unplanned and do not stand in a clear relationship to their surroundings. Public spaces with sojourn qualities do not exist. A few buildings feature private open spaces, but these are not accessible and therefore do not fulfil demands on public spaces. The provision of food service businesses is limited to a few individual establishments that were initially intended to be temporary but have since become stable fixtures. In addition, mobile food trucks that are decentrally distributed
throughout the area apparently serve as social meeting places. Overall, both the buildings and the district display a very poorly developed mixture of uses.

**Location**

Regarding connectivity, the area is equipped with very few public transport stops, and the one available commuter rail connection is located at the edge of the district. Walkability within the area is also poorly developed. The district is clearly oriented towards individual motorized transport, which is apparent in the numerous large-scale aboveground parking lots without any clear design. The comparatively good traffic connections with the motorways A66 and A5 as well as the commuter rail line Eschborn-Süd make the location well accessible from Frankfurt or the Taunus region. Frankfurt International Airport can be reached by car within about 15 minutes.

In this regard, the urban design situation is only adequate in a few isolated parts for the area’s internationally active companies, which require functionality and high quality. The business park has a clear emphasis in services and is the site of well-known companies such as Vodafone Germany, back offices of Deutsche Bank and of Opel AG as well as Ernst & Young. It even houses the headquarters of Germany’s largest Stock Exchange company, Deutsche Börse, which relocated from downtown Frankfurt to Eschborn in the year 2000.

**Governance**

The area can be classified as a transformation location because although existing deficiencies in urban design have yet to be solved, new buildings with a higher urban quality are being constructed. Ultimately, however, it appears as though these buildings can be considered as islands that do not have any impact on the entire ensemble within the business park. Individual buildings are not embedded in the built fabric (see Figure 5).

In general, the location is developed by a market-driven demand and coordinated by the city administration of Eschborn, with limited resources. Therefore, marketing and communication are low level. However, the district has a few administrative and structural characteristics that may hint at other unique features. For example, the City of Eschborn levies very low commercial tax rates in a regional comparison. Eschborn’s tax rate is nearly half of Frankfurt’s rate. For many companies, this appears to be one of the significant reasons for having chosen this location (Interviews between the author and Interviewee B, January 2015, Aschaffenburg; Interviewee A, May 2015, Frankfurt am Main; Interviewee C, May 2015, Frankfurt am Main; and Interviewee D, July 2015, Frankfurt am Main). Nevertheless, it can be noted that the strong urban design deficiencies have apparently only partially resulted in vacancy and stagnation in development and thus in a strong heterogeneity in function and urban design within the office park, which is manifested in the growth and shrinkage trends in the immediate vicinity.

In sum, it can be concluded that the elements of a refitting of suburbia highlighted in the discourse are not yet evident in Gewerbegebiet Süd (Eschborn). In this regard, the newly developed areas should be evaluated rather critically in terms of their growing use of land. Despite the quite regimented planning politics of Germany (at least when compared with American regulations) and the privilege of having open space and land protection, the economic significance of the location appears to take precedence here. Aspects concerning
Figure 5. Overview of the distribution of uses, vacancy rates and building ages in the business park Eschborn Süd. Source: author.
densification, the mixture of uses, adaptive reuse or of the legibility of the urban structure are currently not being addressed at the location, although interviewed stakeholders are aware of the business park’s situation and perceive a need for action here (cf. Interviewee A, 2015; Interviewee D, 2015).

Comparison of the case studies

When both case studies are compared, numerous differences can be determined that have a significant influence on the urban qualities as well as the quality of place in both locations. Both locations differ not only in terms of size, age and access to transport networks. It is also remarkable that the employment density in both locations is quite different (Gateway Gardens: 350 jobs per hectare; Gewerbegebiet Eschborn: 200 jobs per hectare), while the absolute number of jobs is quite similar (approximately 19,000). On the one hand, this can be explained by the more compact built structure of the location, but on the other hand probably also by the larger spatial efficiency in Gateway Gardens as well as by the higher vacancy rate in Eschborn. Furthermore, the structure of the development process of both locations is very different. In the case of Gateway Gardens, a development corporation was created using a public-private partnership model in which both the City of Frankfurt and the developer Gross & Partner are represented as shareholders. This results in a close consultation between public institutions and private developers as well as a high quality of urban planning and design. In the case of Eschborn, an independent development has taken place since the establishment of the business park, which, however, was not coordinated by one central player, but has merely been overseen by the urban planning department of the City of Eschborn. When comparing both locations in the sense of their urban design, it becomes clear that the newly designed locations have a distinctly higher demand on the design of the basic urban structure, on density, the number of floors, scaling and materiality, and that they have also been considerably more elaborately planned and developed. In particular, public spaces and green spaces are better accessible and of a higher quality, and can therefore serve as true meeting places. In addition, these spaces often serve as the centre of the newly designed locations – as is the case in Gateway Gardens – and thus foster orientation and identification (cf. Schütz 2015). These locations are completely absent from transformation locations such as Eschborn. Neither a focal centre nor a clear orientation for elements such as the number of floors, scale or density is recognizable. The placement of buildings and their orientation, among other things, appear haphazard (cf. Schütz 2015).

In Eschborn, only a few instruments for controlling design that have been derived from building law have been implemented. A holistic planning approach is not apparent.

It can therefore be concluded that instruments for controlling design have a key significance for the quality of place in the researched case studies. Despite the existing structural dynamics in locations with older buildings such as Gewerbegebiet Süd in Eschborn, factors inherent to sojourn qualities are not apparent here. It can be assumed that investments are made in the buildings themselves and little interest is given to revitalization by means of refitting, as has already been exercised in other locations such as Gateway Gardens. These newly designed locations address the elements illustrated within the discourse, but do not necessitate a refitting per se since they already exhibit urban as well as functional qualities (see Table 3).
Table 3. Comparison of both case studies Gateway Gardens and Gewerbegebiet Süd in Eschborn based on various characteristics.

<table>
<thead>
<tr>
<th>City</th>
<th>Project</th>
<th>Area</th>
<th>Type of use</th>
<th>Trade tax rate</th>
<th>Surroundings</th>
<th>Infrastructure</th>
<th>Number of employees</th>
<th>Notable ventures</th>
<th>Planning concepts</th>
<th>Planning regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eschborn</td>
<td>Büropark Süd</td>
<td>50 ha*</td>
<td>Service sector, Consulting, IT,</td>
<td>280%*</td>
<td>Suburban, close to city limits of Schwabach, surrounded by agricultural use,</td>
<td>Immediate connection to A66 (Eschborn Dreieck), connection to A66, A5 (Frankfurter Kreuz)*/ urban railway station Eschborn-Süd/ airport 14 km, 14 min ride time</td>
<td>19,000*</td>
<td>Vodafone, Huawei, Deutsche Bank, Ernst &amp; Young, Deutsche Börse</td>
<td>Campus: place for work and education, temporary accommodations, infrastructure: gastronomy, service sector, childcare, fitness centers. New Wave Campus: development of the service sector in three phases</td>
<td>Land use plans 041_98 (1976), 041_110 (1976), 041_119 (1976)*, modification of 041_110 (SO Campus) in progress</td>
</tr>
<tr>
<td>Frankfurt</td>
<td>Gateway Gardens</td>
<td>35 ha</td>
<td>Office and conference buildings/ Hotels, Gastronomy, Retail, Park</td>
<td>460%*</td>
<td>Island position, confined by airport buildings and Frankfurt city forest</td>
<td>Connection to A5, A3, federal highway 43/ Urban railway station in planning/ intercity train station/ airport within 10 min walking distance*</td>
<td>18,000*</td>
<td>Condor, DB Schenker, Imtech, LSG Sky Chefs*</td>
<td>Masterplan and design guidelines (2006–2008), Land use plan B851 (2008) area comprising 57,54 ha, Land use plan B851A in progress, area comprising 47,22 ha*</td>
<td></td>
</tr>
</tbody>
</table>

Sources: author.
Conclusions

The case studies discussed above show that functional and urban-spatial disparities can be ascertained in suburban service centres, and that the analysis of these requires a differentiated approach. A typology of the outward forms of such areas can help sort out their disparities and draw certain commonalities. The polycentric structure of the Frankfurt/Rhine-Main Region ensures that suburban glocalities can arise; in post-suburban service centres, globalization is functionally reflected in the corporate headquarters of internationally active global players, so that they have locally immediate effects on both the employment market and the office real estate market. When considering the local micro level at each location, it is evident that these locations often do not fulfil high-level importance, such as headquarters of multinational firms, but are rather poorly equipped in terms of their quality of place and urban design. This is especially the case for existing older locations such as transformation locations. Apart from this, more and more new centralities with high degrees of design and functional specializations are appearing that provide the locations with international attention as well as unique features, as seen in the example of Gateway Gardens. In a competitive environment, these could continue to aggravate the office real estate market in the Frankfurt region, which is already characterized by high vacancy rates, but at the same time could valuably complement the offering on the market.

Overall, it can be concluded that existing locations such as Gewerbegebiet Eschborn only partially fulfil new competitive requirements as well as the trends in refitting. Other locational factors are often given priority, such as the installation of a broadband connection, connection to transport network infrastructure, representational locations or tax breaks. Here, design measures are only applied to a limited extent. Land development is increasingly controlled by investors and the market is in turn organized at a global level, meaning that interest in local development is generally low. Therefore, within the business parks, a juxtaposition of flourishing new developments and partially vacant buildings with a poor architectural or functional configuration often arises; the business parks themselves are also becoming more polarized. In addition to this, the design of public open spaces and streets is neglected, which also leads to functional deficiencies such as an inadequate connection to public transport and a resulting inadequacy of parking spaces.

Quality of place demands a certain degree of control and structure by a coordinating body. The example of Gateway Gardens shows that applying relatively strong design guidelines and building regulations can achieve a high quality of urban design. A market-led development without any form of control leads to a lower quality of place owing to a profit orientation (see Eschborn). In this case, the interest of stakeholders ends at the property line. In order to be able to reach such a quality within existing business parks, urban planning stipulations, or at least controlled management, is required.

In this sense it can be concluded, that the management and by that the governance of such locations directly influences the morphology of the urban fabric in terms of buildings, materials and public spaces significantly.

In conclusion, a few essential findings resulting from the overall analysis of the various locations and the two case studies can be put forward:

(1) Newly designed locations are planned and developed with a much higher quality of urban design (higher density, compactness, mixture of uses, design guidelines) than transformation locations.
(2) Newly designed locations display a ‘structured diversity’ that is strongly ordered by design principles and development plans, but that generally still offers enough flexibility to attract various sectors and uses to the location.

(3) Transformation locations often lack a clear urban centre as well as a built structure for orientation and identification.

(4) Transformation locations often display ambivalent growth dynamics in terms of new development and vacancies, but they also show trends towards an increasing mixture of uses and densification (among others, through residential uses and supply).

(5) Transformation locations show potential for a mixture of uses and indeed also pursue this, often owing to the pressure of changing dynamics in the residential and office real estate markets.

(6) Both location types discussed here display good to very good conditions for office and service uses in terms of ‘hard’ locational factors (traffic connectivity, digital infrastructure, built stock).

(7) Both location types show a significant relationship between the level of management and the morphological structures and its urban design; the stronger the level of management the stronger the organization of buildings, open spaces and design regulations. In summary, it can indeed be argued that aspects of urban design and planning play a role in the development of newly designed locations. However, these components are not only difficult for a large constellation of actors to implement in existing locations. From an urban planning perspective, it would be desirable if the development of the locations were more often explored for the sake of systematic restructuring, including the promotion of mixed uses. Urban design aspects have just begun to be a relevant issue in the planning of new suburban business locations, and it requires further planning action to promote these issues to become principles also for the transformation of older business locations.

Note
1. All interviewees have been anonymized.

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