

HANDBOOK ON URBAN PRODUCTION

Potentials | Pathways | Measures

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URBANE
PRODUKTION.RUHR

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GEFÖRDERT VOM



Bundesministerium
für Bildung
und Forschung



In the joint project *UrbaneProduktion.Ruhr*, funded by the German Federal Ministry of Education and Research (BMBF), research was carried out from October 2016 to December 2019 into whether and how it is possible to bring production back to the city. First, a theoretical analysis phase took place, exploring Europe-wide examples of the rediscovery of the manufacturing sector through urban development and economic promotion. Afterwards, selected measures were tested in the Ruhr region (Germany). The spatial, structural, political and legal conditions for urban production were first examined in two districts of the City of Bochum. The topic of urban production was introduced, discussed and implemented in the Bochum-Langendreer and Bochum-Wattenscheid living labs, on a trial basis that established contact between a property and relevant actors. The strategy of festivalisation was pursued: For a limited period in 2017, the LutherLAB - the former Luther Church in Langendreer - and in 2019, the WatCraft - a shop on Hochstraße in Wattenscheid - became hubs for workshops, lectures and coworking on the topics of urban production, DIY city-making and small-scale start-ups.

The Institute for Work and Technology of the Westphalian University of Applied Sciences Gelsenkirchen-Bocholt-Recklinghausen (project management), the Office for Urban Planning and Housing and the Economic Development Department of the City of Bochum, Bochum University of Applied Sciences and the non-profit association the Urbanists from Dortmund were involved in the research project.

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Abstract

Under the conditions of globalisation our cities face significant challenges to become more socially equitable, more environmentally sustainable and more productive. Urban manufacturing is able to provide partial answers to the manifold problems of a globalized economy. Urban farming, urban handcraft as well as urban industry contribute to opening up new economic perspectives and new attractiveness in urban districts. There are numerous examples of successful architectural realisations and well-established manufacturing companies in urban areas. Despite the positive examples a variety of measures for a comprehensive and targeted promotion of urban manufacturing in municipalities are possible and needed: in addition to preparatory analyses, a strategic orientation for the development of a productive city and the formation of a corresponding political attitude, support measures for companies and democratic participation of the residents are required. Therefore, a closer interlocking of economic and urban planning represents a key success factor.

Content

Foreword	8
1 Initial situation and transformation needs of urban spaces	10
1.1 Social and economic changes	13
1.2 Holistic strategies	16
1.3 Structure of the handbook	19
2 Urban production	20
2.1 Definition	20
2.1.1 What is production?	20
2.1.2 What makes production urban?	22
2.1.3 Which types of urban production are there?	24
2.2 Potentials	28
2.2.1 Potentials of urban production from a municipal perspective	28
2.2.2 Urban production as a building block of neighbourhood development	29
2.2.3 Urban production environment as an entrepreneurial location advantage	29
2.2.4 Increased employee satisfaction through an urban working environment	30
2.3 Ambivalences	32
3 Toolbox	34
3.1 Strategic implementation	38
3.1.1 Overall urban strategy	38
3.1.2 Integrated economic land concept	40
3.1.3 Spatial typing	42
3.1.4 Company database	46
3.1.5 Commercial vacancy register	48
3.1.6 Mix of uses	50
3.1.7 Leasehold	54
3.2 Company-related support	56
3.2.1 Branding und marketing	56
3.2.2 Sensitisation	58
3.2.3 Acceptance of production in the city	60
3.2.4 Support for start-ups	62
3.2.5 Incubators	66
3.2.6 Centre for Urban Production (ZUP)	68
3.2.7 Prosumptive business models	70

3.2.8	Funding programmes and financing options.....	72
3.2.9	Networks.....	76
3.3	Productive environment.....	78
3.3.1	Mobilisation of owners and neighbourhood.....	78
3.3.2	Cooperation with the housing industry.....	80
3.3.3	Urban logistics.....	82
3.3.4	Agency for Urban Production.....	84
4	Process towards the productive city.....	86
5	Inspiration for Urban Production.....	88
5.1	Urban industry.....	88
5.1.1	Wittenstein bastian GmbH, Fellbach.....	88
5.1.2	Joseph Manner & Comp AG, Wien.....	90
5.2	Urban agriculture.....	92
5.2.1	Hut & Stiel, Wien.....	92
5.2.2	Ferme Abattoir, Brussels.....	94
5.3	Urban manufacture.....	96
5.3.1	Hafenkäserei, Münster.....	96
5.3.2	Laserkatze, Aachen.....	98
5.4	Open workshop: The #Rosenwerk, Dresden.....	100
5.5	Homepreneurs: Community shop SchnickSchnack, Bochum.....	102
5.6	Festival Urban Production: LutherLAB, Bochum.....	104
6	Index.....	106
7	Read more.....	106
8	Sources.....	108
8.1	Literature.....	108
8.2	Websites.....	112
8.3	List of interviews and conversations conducted.....	114

Foreword

Urban production as a building block of sustainable transformation in the city of the future

The city of the future will also be a manufacturing city to a great extent again. A new trend is becoming noticeable: New production sites, for example for creative crafts, and manufacturing are emerging to meet the growing demand for sustainably produced, high-quality products in new niche markets. Open workshops (ie. Makerspaces/FabLabs) offer small businesses and start-ups in particular the opportunity to share production equipment and space. In this way, the local start-up scene can be strengthened and value chains can be established. Repair shops also flourish in neighbourhoods with rather lower income groups and/or declining population and vacant commercial units, where they fulfill an important social function. This also strengthens the threatened traditional district trade, which already had an important supply function for the population in the neighbourhood in the past.

What promises advantages such as cultural diversity and social stability can also lead to conflicts, however, if the traditional division of urban space into areas for housing, consumption, industry, transport and leisure gradually dissolves and uses become more mixed. But what is to be done in concrete terms to strengthen trends in the sense of sustainable urban development, to reduce conflicts and to involve the urban population? Who are the actors and what structures for action are needed? There are no one-size-fits-all answers to these questions. Social-ecological research is called upon to search for solutions and provide suggestions.

Against this background, the Federal Ministry of Education and Research (BMBF) has launched the funding measure 'Sustainable Transformation of Urban Areas' as part of the FONA flagship initiative City of the Future. The funding measure aims to develop integrative strategies that combine ecological and social requirements and aim for a resilient urban structure with a higher quality of life. The guiding vision is a CO₂-neutral city in which resource consumption and noise pollution is reduced and air quality is improved. Urban environments are to be better designed, land and infrastructures used more efficiently and city-compatible production integrated. The aim is also to reduce social divisions, improve opportunities for participation, involve the population more intensively in urban development processes and decisions, and test new forms of interaction, communication and cooperation between the business community and the municipality. The BMBF funds 23 projects that pursue such objectives.

The range of topics is correspondingly broad. Among other things, the projects are dedicated to low-carbon housing, housing for refugees and immigrants, participatory green space development and the loss of function of urban centres. Individual projects examine shrinkage and growth phenomena, questions of vulnerability and risk assessment as well as participation in climate-friendly urban redevelopment. Themes include sector coupling, resilience, heat grids, electrification of transport and logistics infrastructure, and many more.

A special feature is that a relatively large number of projects in the field of action 'Urban Economy in Transition' have successfully applied for funding. This means that a broad thematic spectrum can be covered here as well. It ranges from urban production and value creation processes in neighbourhoods to the sustainable development of older urban commercial areas and the role of municipal economic development agencies as a link between the municipality and the economy and as key actors in sustainable urban redevelopment. They are empirical subjects or research or practice partners in several projects.

This is also where the project UrbanProduction.Ruhr comes in. The aim of the project is to look at the trends in urban production described above in context and to find out which opportunities and potentials for sustainable urban development lie in contemporary urban production in particular. It is particularly ambitious to investigate the question of how structurally weak urban districts can benefit from urban production. The reference to the neighbourhood is very important and the project operates closely to local conditions and with local actors, without neglecting scientific questions, such as urban ecology. In this respect, we wish the project continued success, a successful continuation after the end of the funding and ultimately a positive impact beyond the borders of the project municipalities. This Urban Production Handbook will undoubtedly make an indispensable contribution to this.

Dr. Frank Betker
DLR PT, Social Ecological Research
Project Supervisor



Dr. Frank Betker

1 Initial situation and transformation needs of urban spaces

In particular, the large amount of land required has led to the relocation of larger industrial enterprises to commercial and industrial areas.

Production in towns was omnipresent in the past. The small-scale inner-city concentration of the medieval estate economy can still be seen today in many places in street names such as ‚Gerbergasse‘ (Tanner Street), ‚Schmiedsgasse‘ (Blacksmith Street) or ‚Bleichgasse‘ (Bleach Street). In particular, the great demand for space and the need to reduce pollution caused the relocation of larger industrial enterprises to commercial and industrial areas on the outskirts of the settlement centres. The emerging individual motorisation of the population facilitated this, and the functional separation of work and living propagated in the [Athens Charter](#). Since 1933, it has been a legal paradigm of urban development today. Furthermore, falling transport costs have led to a shift of production to parts of the world where natural resources are cheaper, labour and other factor costs are lower and environmental regulations are less strict.

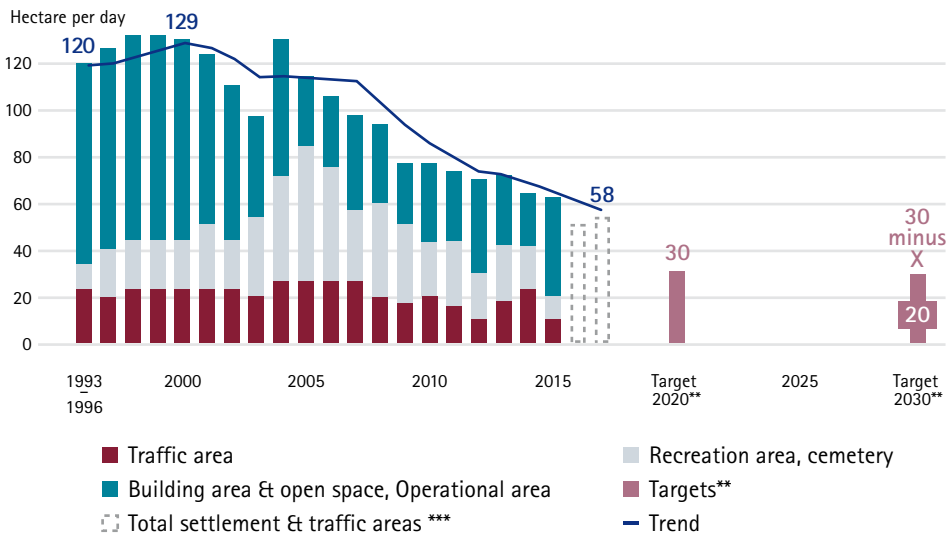
From today’s perspective, however, this shift has not led to a global decrease in environmental pollution. Although the emissions associated with production are rather imperceptible in our urban blueprint economies, they have increased in total. The environmental movements in Germany and the emission protection legislation based on them are primarily oriented towards the protection of public health and the environmental media (soil, water, air) and in this way try to prevent damage to people, animals, plants, soil, water, atmosphere and cultural assets. [A systemic environmental assessment](#) with regard to the question of what a relocation to the periphery or to countries with lower environmental regulations means in global terms in order to protect the residential population [does not take place](#).

There is no systematic environmental accounting of what a relocation of production to the periphery or to countries with lower environmental regulations means in global terms in order to protect the resident population.

Not only a changed global division of labour and relocation of production to countries with favourable factor costs have contributed to the tertiarisation of cities, but since the 1980s urban economic policies worldwide have focused on the development of (knowledge-intensive) services in the course of a general discussion about the post-industrial society (cf. Bell 1976). The „Great Hope of the 21st Century“ (Fourastié 1954), that people would hardly have to slave in factories anymore due to great efficiency gains in the industrial sector and that they would soon be much better off in the context of a service society, has only been fulfilled in partially areas. This is because the declining demand for labour in the industrial sector could not be compensated at all times and in all regions by job offers in the service sector.

Cities, in particular, offer great potential for the sparing use of land as a resource. Higher building densities, compact and functionally mixed structures as well as a well-developed public transport system are just some of the aspects that make up an urban lifestyle and counteract urban sprawl and land consumption. According to the Federal Institute for Research on Building, Urban Affairs and Spatial Development (Bundesinstitut für Bau-, Stadt- und Raumforschung, BBSR), the per capita land consumption for settlement and transport areas is four times lower in the independent cities than in sparsely populated regions (cf. BBSR 2014). Although there has been a downward trend in this regard since 2004, the four-year average land consumption from 2014 to 2017 is still 58 hectares per day, which is still far from the 30 hectare target by 2020 (► Figure 1).

Recognising and using cities as potentials.



► Figure 1
Increase in settlement and transport area

(Source: own presentation according to Federal Environment Agency 2019; values from Federal Statistical Office 2018, Subject-matter series 3 Series 5.1. 2017. Land area by type of actual use from 15.11.2018 supplemented on 03.04.2019; source for individual year 2016 and 2017: own calculations of the Federal Environment Agency).

* The area survey is based on the evaluation of the real estate cadastres of the federal states. Due to conversion work in the cadastres (reclassification of types of use in the course of digitisation), the representation of the increase in area from 2004 onwards is distorted.
 ** Target 2020: „Climate Protection Plan 2050“; Targets 2030: „30 minus x“ Hectares per day: „German Sustainability Strategy, New Edition 2016“; 20 Hectares per day: „Integrated Environmental Programme 2030“
 *** From 2016 onwards, due to the conversion from the automated real estate book (ALB) to the automated real estate cadastre information system (ALKIS), the distinction between „building and open space“ and „farmland without excavation land“ will no longer apply. In addition, serious statistical artefacts occur in 2016 due to regroupings between types of use, so that it is neither sensible to state the breakdown of the change in SV area between transport areas, recreational areas and construction and operational areas, nor to state a numerical value for the change in SV area overall in 2016. From 2016 onwards, the Federal Statistical Office has therefore only published the value for the 4-year average in each case. This also applies to 2017. To compensate for known statistical artefacts, the Federal Statistical Office has made corrections to the 2017 indicator (cf. FS 3 R 5.1 Supplement to the indicator of 03.04.2019).

Strategies for inner development, redensification and land recycling are key factors that must also be taken into account in commercial settlements and are particularly suitable for urban production.

Various developments have helped the topic of urban production to gain attention in recent years: the financial crisis and the resulting shift away from a pure service orientation; the realisation that the promotion of knowledge-based services is not sufficient to manage structural change in a socially just way; digitalisation and the possibilities of lower-emission production; a changed urban development model and the demand for a mix of uses for ecological and social reasons, in order to enable material cycles and a city of short distances, and last but not least a rediscovered social appreciation of handicraft and locally produced products (cf. Brandt et al. 2017a). Promoted by debates on climate protection and occupational safety, CO₂ reduction, 'Fridays for Future' or 'Extinction Rebellion' as well as increasing digitalisation (Industry 4.0) in the media, local production and regional value chains are gaining in importance again. In addition, the relocation of companies or production to 'low-wage countries' is increasingly viewed critically due to wage dumping and environmental impacts (cf. Gärtner et al. 2020). For this reason, many cities are increasingly focusing on this topic in their urban development strategies.

Urban production as an opportunity for regional value creation and resource protection.

Return of production to the city increases economic resilience of municipalities.

The return of production to our settlements can ensure that production becomes cleaner again, also in order to avoid conflicts of use. This means that the imposition of production in close proximity to housing leads to a saving of resources. Further positive ecological effects depend heavily on whether there is actually a shift back or regionalisation of value chains or only the 'refinement' of products in 'glass factories' as entertainment for the hip, enlightened urban population.

However, the state of knowledge on the topic of urban production is still very much based on the evaluation of individual case studies and surveys. A systematic - especially quantitative - assessment of the phenomenon and a corresponding estimation of the ecological, social, urban planning and economic effects has not yet been possible, also because there is still no uniform understanding or common definition. In the context of this handbook, we explicitly refer to material production in spatial proximity to settlements.

1.1 Social and economic changes

Cities not only manifest global environmental changes that lead to concrete ecological dangers, but also social, economic and political challenges as a result of structural change, migration and urban growth. Diverse services, social infrastructures and the prospect of employment attract people to urban neighbourhoods. The positive image of cities is contrasted by real problems that shape living, working and leisure, especially in large cities.

Structural change, migration and urban growth are challenges that Urban Production can address.



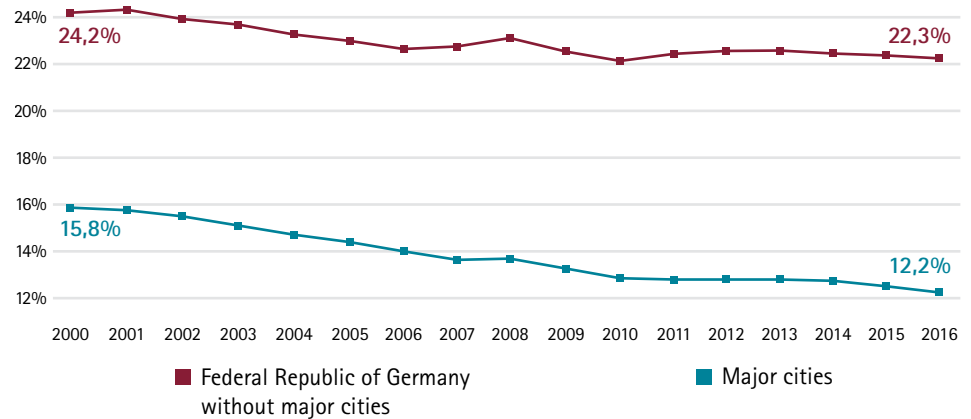
Structural change refers to a change in the economic structure in a certain area (e.g. a region) that is characterised by a shift in industry or sector ratios or their disappearance. Particularly in regions that are geared to a specific industry, the loss of a key industry can have serious consequences. Unemployment and the exodus of well-off population groups lead to a downward spiral in neighbourhoods and regions, which can result in neglect, vacancy and a lack of perspective. Preventive structural policy and the active shaping of change can counteract such impending structural weakness (cf. Dahlbeck/Gärtner 2019).

The deindustrialisation of cities, the accompanying reduction of (low-skilled) jobs in industrial production and the development of new forms of a „knowledge- and culture-based economy“ (Läpple 2016: 25) have led to persistent unemployment, e.g. in cities of the Ruhr area, which mainly affects people with low qualifications. While in 1960 more than 60 % of the workforce there still worked in the manufacturing sector, today it is less than 25 % and thus less than the average for North Rhine-Westphalia. Thus, in addition to a structural policy focus on (knowledge-based) services, the reduction in manufacturing employment in some regions could also be related to the fact that Germany's specific financing model is primarily able to stabilise regions characterised by small and medium-sized enterprises, but functions less well in regions organised on a large scale. For example, data from the Federal Statistical Office show that especially in the federal states of Baden-Württemberg (30.9%), Thuringia (29.7%) and Bavaria (27.4%) there are still a particularly large number of employed persons working in the manufacturing sector (incl. construction) in 2016 (cf. Federal Statistical Office 2017) compared to the rest of Germany (average 24.2%). It is obvious that less production takes place in cities than in peripheral regions due to site annuities and proximity to settlements (► Figure 2) and despite additive production processes, production cannot be relocated back everywhere.

In the course of deindustrialisation, many (low-skilled) jobs in industrial production were cut.

► Figure 2
Development of the share of employed persons in the manufacturing sector (excluding construction) in Germany as a proportion of total employees (2000-2016)

(Source: own representation based on the regional database Germany, available at [https:// www.regional-statistik.de/genesis/online/](https://www.regional-statistik.de/genesis/online/))

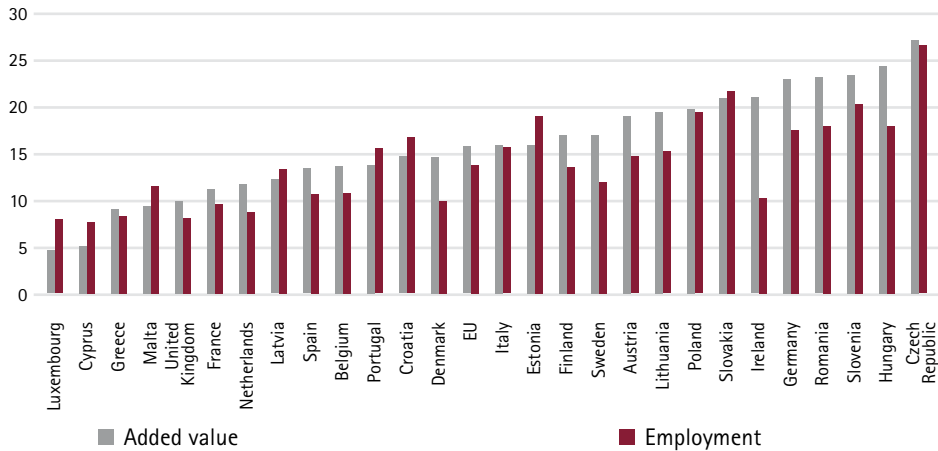


* no data was available for the 12 cities of Aachen, Bergisch Gladbach, Göttingen, Heilbronn, Hildesheim, Moers, Neuss, Paderborn, Recklinghausen, Reutlingen, Saarbrücken and Siegen; they were not taken into account

However, large cities show different sector profiles in a European comparison: For example, the share of manufacturing (excluding construction) in cities in Germany varies between Bremen with 16 % in 2013 (cf. Statistisches Landesamt Bremen 2015) and Berlin with 5.7 % in 2015 (cf. Stadt Berlin 2017), which is understandable due to the different size and function of the cities. Interesting is the difference between London with 3.7 % without construction in 2017 - in 2007 the figures were still 6.3 % (cf. Office for National Statistics 2018) - and Vienna with 6.4 % without construction in 2015 (cf. own calculation based on the Statistical Yearbook of the City of Vienna 2017), Prague with 10.7 % without construction in 2016 (cf. Czech Statistical Office 2017) or Warsaw with 17.3 % without construction in 2017 (cf. Warsaw 2018). This suggests that urban policy has an influence on the sector profile of a city and even metropolises under land pressure can maintain production. However, it should be noted that the figures are partly from different points in time and different sources.

Urban policy influences the sector profile of a city.

While the number of employees in manufacturing in Germany is declining, the share of employees in the manufacturing sector in total employment is relatively high compared to other EU countries (► Figure 3). Only the Czech Republic, Slovakia, Slovenia, Poland, Estonia and Hungary have a higher share of employees in the sector (cf. Rhodes 2018: 8).



► Figure 3
Shares of the secondary sector in value added and employment, EU countries 2015, in %

(Source: own representation according to Veugelers 2017: 35)

Within the manufacturing sector, there is also a shift from material to immaterial services, which is described by the term **intrasectoral structural change** and increasingly prescribes higher qualifications (cf. Haupt 2000: 12). Differentiated qualifications of city dwellers, different lifestyles and social and cultural milieus contribute to an increasing heterogeneity of the urban population, as does the influx of refugees and migrants.

Challenges on the housing and labour markets as well as social and socio-economic divisions within urban society cannot be dealt with in isolation from each other, but must be considered in their embedding in urban problem constellations. Coping strategies within the diversity of urban life and „multifunctional urban contexts“ (Läpple 2016: 24) require linkage, integration and multifunctionality. There is a need to look at the city districts and strengthen the local economy in the city, for which urban production can be a building block.

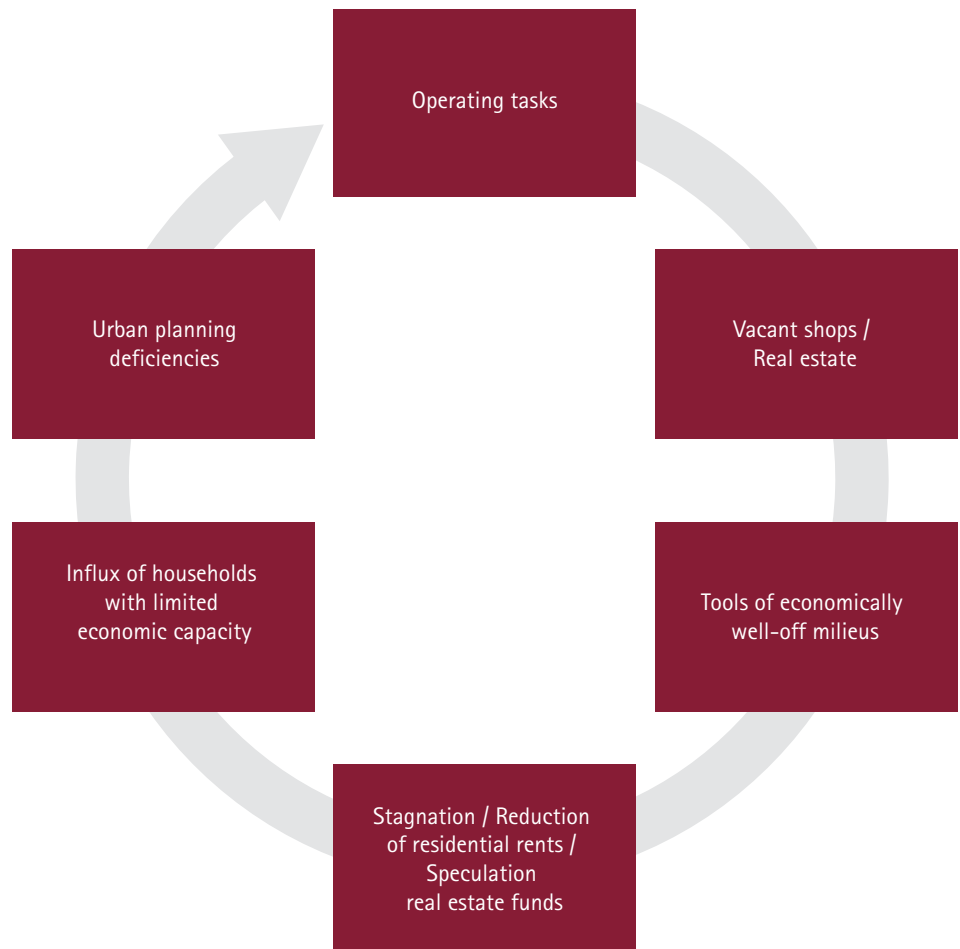
Cities need long-term and holistic problem-solving strategies.

1.2 Holistic strategies

Not only from a social point of view, but also from the economic point of view of small and individual enterprises, winners and losers of current social and spatial developments become apparent. While land prices are skyrocketing in some areas, structurally weak urban districts are considered increasingly unattractive for the local economy.

► Figure 4
Downward spiral in structurally weak neighbourhoods

(Source: own representation according to Flögel/Gärtner 2011 and 2012 and Austermann et al. 2012: 2)



Particularly in streets dominated by retail, trading down processes can be observed due to increasing online retail and the shift of retail to the centres and shopping malls, in which shopping streets become less attractive for retailers and consumers due to vacancies, increasing offers of the low-price sector and arcades, which usually results in further image loss and more vacancies (cf. Junker/Pump-Uhlmann 2019). This downward spiral (► Figure 4)) not only has a negative impact on the local economy, but also on the quality of life and housing in the entire neighbourhood, which in turn promotes segregation.

Increasing demand for space is leading to a tension between overlapping demands. Residential space as well as business and commercial space is becoming more expensive and this leads to the displacement of previous uses. In particular, businesses that generate less turnover per square metre are being replaced by more profitable uses. Due to the high demand for space, this especially affects manufacturing companies (cf. Brandt et al. 2018).

In order to promote sustainable urban development, the EU member states committed themselves in the Leipzig Charter 2007 to a mix of uses in urban neighbourhoods, in contrast to the previously dominant idea of functional separation. A local mix of functions describes the close spatial proximity of living, working, education, supply and leisure as well as a more compact settlement structure. In terms of environmental protection and economic efficiency, this mix should lead to a 'city of short distances' and thus to a more efficient use of resources. Furthermore, it pursues the goal of increasing the quality of life of the residents through the diverse local offers. A particular focus is on disadvantaged urban neighbourhoods, which are to be given new scope for action and support for the local economy and participation through various measures (BMBU 2007). In 2020, the Leipzig Charter will be updated and its principles renewed in order to meet the challenges of „climate change, digitalisation and the social issue of migration“ (Geipel/Schade-Bünsow 2019: 64).

In view of the complexity and multi-layered nature of the current urban challenges, new concepts are needed that can holistically influence living together, doing business and consuming. Urban production can be a key factor in this: The development of the production economy is closely linked to the economic development of a city or region. At the same time, it is relevant for the basic supply of the population and for environmentally and socially compatible consumption.

For more information:
<https://t1p.de/d38h>

The production sector thus has a direct influence on social coexistence and should therefore be consciously shaped as an elementary factor for change. For this reason, the research project has focused on the following questions, which will be answered in this handbook:

- How can economic, cultural and political participation be shaped in disadvantaged neighbourhoods?
- What new forms of land use are compatible with land consumption and land pressure?
- How can a mix of uses contribute to a liveable city and how can conflicts of use be moderated or kept to a minimum?
- Can logistics, transport and mobility be implemented in a city of short distances?
- Are there possibilities - for example through a local circular economy - to avoid or recycle waste and emissions and at the same time stabilise the local economy?



The concept of **circular economy** considers residual material from industry and households not as waste but as a resource, thus questioning the common practice of burning waste, dumping it in landfills or exporting it under the most adverse conditions. In order to conserve and recover resources, products can be reused, repaired, upgraded or returned to the material cycle. Functioning waste recycling and sustainable product development play a major role here (cf. Diez Ladera 2016; Kranert 2017). Through local production, the materials obtained can be recycled locally and thus also strengthen the local economy.

1.3 Structure of the handbook

The aim of the handbook is to provide municipal actors with concrete tools that can be used to keep and locate production in urban areas. Following this introductory chapter on the initial situation and transformational challenges of urban spaces, a brief overview of the essential understandings and contexts of urban production is given (Chapter 2). The research project *UrbaneProduktion.Ruhr* will first explain how production is defined, when production can be considered urban production and which relevant types of urban production companies exist (chapter 2.1). Based on this, the potentials of urban production are outlined, which arise for the municipalities - especially neighbourhood development - as well as for companies and employees (chapter 2.2). The ambivalences that partly confront the potentials are then discussed (chapter 2.3). The toolbox builds on the basis created in this way (Chapter 3). On the one hand, it contains measures that aim to create favourable framework conditions for urban production, primarily at the strategic level (Chapter 3.1). On the other hand, the toolbox contains measures that focus on the direct support of producers and entrepreneurs in urban areas (chapter 3.2) as well as measures that intend to create favourable productive conditions for urban production enterprises (chapter 3.3). Finally, the findings and recommendations presented are reflected upon (Chapter 4). In order to get an impression of the many facets of urban production, various inspirations follow in the form of short company presentations (chapter 5).

2 Urban Production

1.2 Definition

Urban production refers to „the production and processing of material goods in densely populated areas, often using local resources and locally embedded value chains. The companies operate on a self-sufficient basis. The proximity to the living space requires low-emission and resource-efficient production and transport methods in order to avoid conflicts of use with local residents. In many cases, synergy effects arise with creative milieus and services“ (Brandt et al. 2017b).

2.1.1 What is production?

The basic classification of economic activities (WZ) takes place according to tangible goods and services on an industry-by-industry basis. Tangible goods and tangible services are the end result in „hard technologies, [...] services or intangible services are the end result in soft technologies“ (Haupt 2000: 1). According to this, the ‚primary‘ (agriculture, forestry and fisheries) and ‚secondary‘ (manufacturing) sectors belong to the tangible sectors, while the ‚tertiary‘ sector comprises the intangible sectors (cf. ibid.).

Due to the neglect of material industries in urban development in recent years and the current displacement of manufacturing companies further to the outskirts of the city or abroad, they should now be brought to the fore again in the context of sustainable urban development.

► Figure 5 outlines the areas over which the material industries extend. Strictly speaking, we include the following economic sectors (cf. StBA 2008): **Agriculture, forestry and fishing (A)** is seen as a contribution to the supply of the population, e.g. with foodstuffs, with regard to short distances (also to processing plants). **Manufacturing (C)** is the most comprehensive economic sector in terms of material trade. It includes the production of material goods, such as furniture, machines, motor vehicles, processed food, etc., which is why bakeries, breweries, carpenteries, textile processing companies, printers, the pharmaceutical industry, electronics manufacturers, foundries, watchmakers and also musical instrument makers are grouped under this heading. The subgroup **collection, treatment and disposal of waste and recovery (E38)** plays an increasingly important role in urban contexts in terms of the circular economy and recycling, especially under the keywords ‚cradle to cradle‘ and ‚upcycling‘.

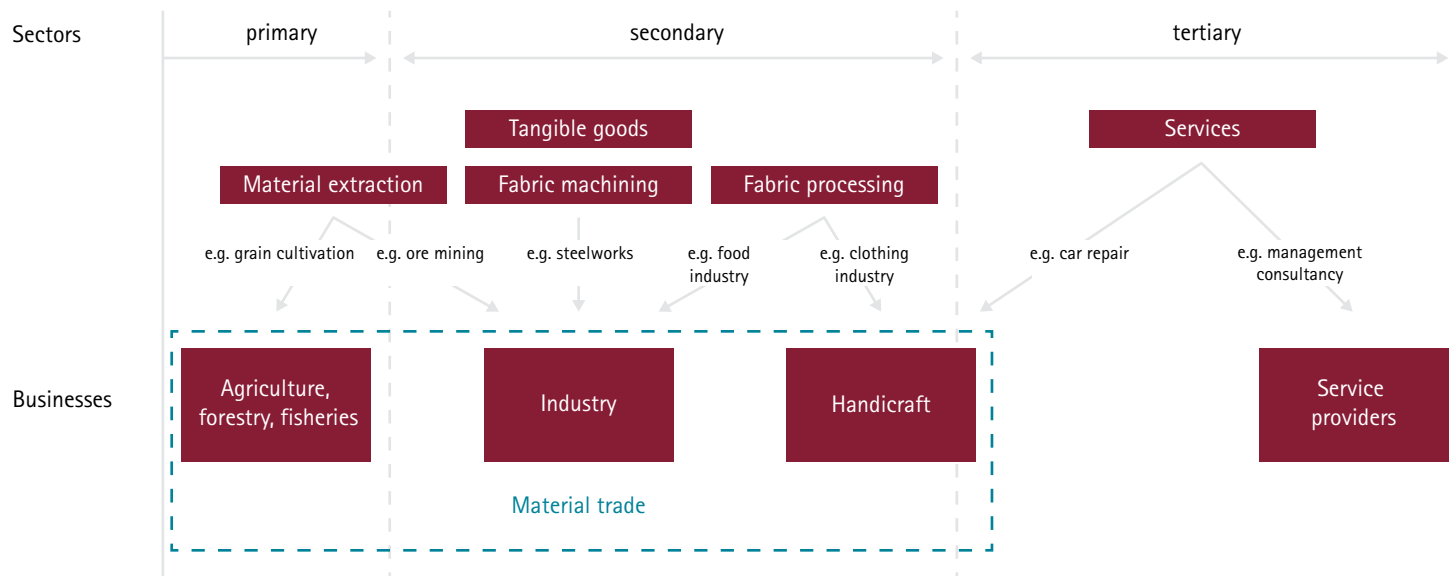
The **construction industry (F)** is still a relevant economic sector in the city, which must be protected from displacement due to its local customer loyalty and for which storage areas as well as

Urban production includes the material sectors of the economy with „hard technologies“: The primary, secondary and repair businesses from the tertiary sector.

See StBA (2008):
<https://t1p.de/f3tw>

► Figure 5
Allocation of the material industry within the economic sectors

(Source: own representation according to Haupt 2000: 7)



loading and unloading zones must be taken into account in new settlements. Other subgroups of the material industry are the maintenance and repair of motor vehicles (G45.2) as well as the repair of data processing equipment and consumer durables (S95), which also play a great role in circular economy urban contexts. Opticians (G47.78.1) are also responsible for the manufacture and repair of spectacles and contact lenses. In addition, we classify self-employed visual artists and restorers (R90.03.3 and R90.03.4) under material trades. Strictly speaking, the mining and quarrying industry (B) is also part of the material industry, but coal mining has no longer taken place in Germany since 2018 and is therefore negligible. Open-cast lignite mining, on the other hand, displaces settlements and is therefore not to be found in urban areas, just like the extraction of stone and earth.

2.1.2 What makes production urban?

The mix of uses called for in the ‚Leipzig Charter on Sustainable European Cities‘ mainly concerns the mix of housing, services and leisure facilities, while manufacturing is largely excluded. The latter continues to be located in commercial and industrial areas if the businesses have not traditionally grown in locations that are now surrounded by residential development, etc. Production is then considered ‚urban‘ here. Production is then described as ‚urban‘ if the business is located in the immediate vicinity of residential use. This is possible under planning law, especially in mixed-use areas, including urban areas. This is also the case in other areas, for example if production facilities are located in commercial or industrial areas and these are in the immediate vicinity of residential use. As an example, the company locations of the material industry in the city of Bochum were analysed, which illustrate the relevance of urban production for the urban economy. When looking at the locations in relation to the real-use mapping in Bochum (► Figure 6) it can be seen that a large proportion of the manufacturing companies (46 %) are located in the industrial and commercial areas. By far the most employees work there in the manufacturing sector (76 %). However, 37 % of the manufacturing enterprises are located within residential areas, where 13 % of the employees in our classification work. 14 % of the companies are located in areas of mixed use (9 % of the employees) and 3 % in other areas (1 % of the employees). Thus, in Bochum, at least 50 % of the businesses in the material trades can be classified as urban production businesses, which employ 22 % of the workforce in Bochum in the material trades (cf. Gärtner et al. 2020).

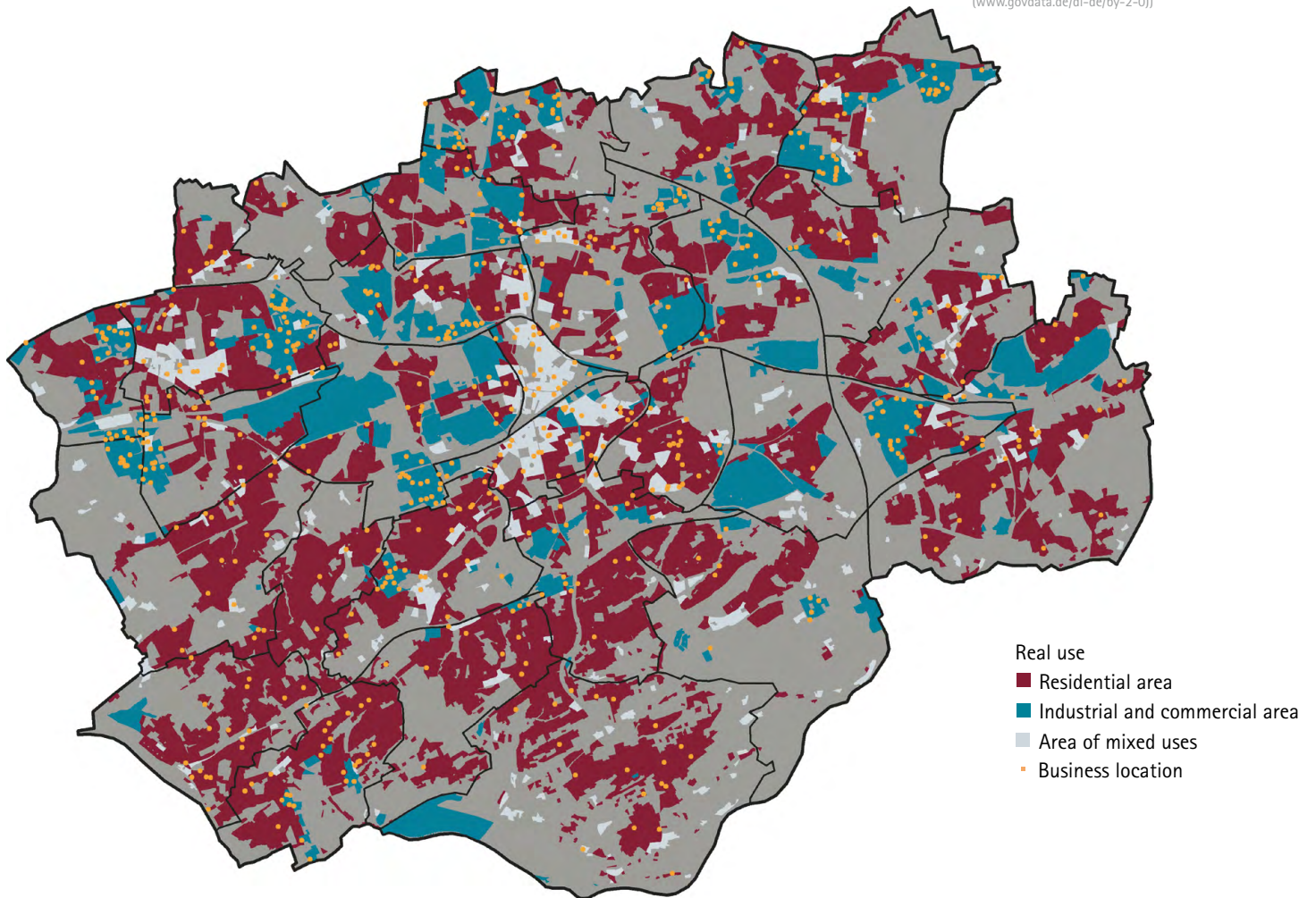
The manufacturing industry is often neglected in the demand for mixed use.

Spatial analysis of the business locations of the material industry using the example of the city of Bochum.

50 % of Bochum's companies in the manufacturing sector belong to the urban production sector.

► Figure 6
Locations of the material trade in
Bochum

(Source: own presentation based on Creditreform 2019,
federal state NRW (2019) Data licence Germany -
Attribution - Version 2.0
(www.govdata.de/dl-de/by-2-0))



Economic efficiency, jobs and synergies of urban industries.



► Figure 7
Types of urban production

(Source: own representation)

Local reference and customer contact as important requirements of urban manufactories.

2.1.3 What types of urban production are there?

We distinguish between Urban Industry, Urban Manufacture & Repair and Urban Agriculture (► Figure 7).

Urban Industry

Urban industry refers to factories that produce large quantities of goods in series production with machines in densely populated areas. They can be traditional businesses that have been on site for several decades (breweries are a common example) or new establishments that benefit from the urban location. Often there are unskilled, semi-skilled as well as highly qualified employees in the enterprises. Both contract and market production takes place, whereby the sales market is often supraregional to global. In most cases, these companies are required to be registered in the commercial register and to be members of the Chamber of Industry and Commerce (IHK) (cf. Haselsteiner et al. 2019: and 7DIHK 2017). New technical and architectural achievements make it possible to save space (e.g. floor factories p. 91), to prevent conflicts of use when disruptive commerce becomes non-disruptive commerce through noise insulation or emission filters, and to create synergies between the factories and the surrounding buildings (e.g. through waste heat utilisation) (cf. Brandt et al. 2017b).

Urban Manufacture

Urban manufactories are small and micro enterprises in the city that produce individual items or small quantities of a product series (there are, however, variations, e.g. in food production) and may also specialise in repairs. This usually involves the modification, refinement or creation of a product, as well as work for the industry (e.g. creation of a mould). These are handicraft activities in which machines are not used at all or only to support manual skills: In the course of digitalisation, CNC machines, 3D printers or computer-controlled bread moulding machines are increasingly being used, especially in the crafts sector. Another characteristic is that the owner of the business is involved in the craftsmanship and has the possibility to influence the technical operation of the business. Other key positions are occupied by skilled workers. Depending on the sector, unskilled workers or unskilled assistants are also involved. Local reference and customer contact play a major role, but chain formation is not uncommon, especially in opticians. In the case of traditional crafts, there is a compulsory registration in the register of crafts and a compulsory membership in the chamber of crafts or guild (cf. DIHK 2017 and Haselsteiner et al. 2019: 7). While manufactories were increasingly displaced by mass industry in the last century, today they are experiencing a new upswing due to the trend towards individualisation, the sustainability movement and local economies. Thus, urban manufactories also include businesses that are not organised in the Chamber of Crafts, but may simply have

registered a trade and sell their products. They are often located in shops or large workshops in mixed areas. Making a product in one's own home and selling it through online channels, markets or local retail (see Inspiration SchnickSchnack, p. 102) also fall into this category (cf. Brandt et al. 2017a).

Urban manufactories are mainly found in mixed-use areas.



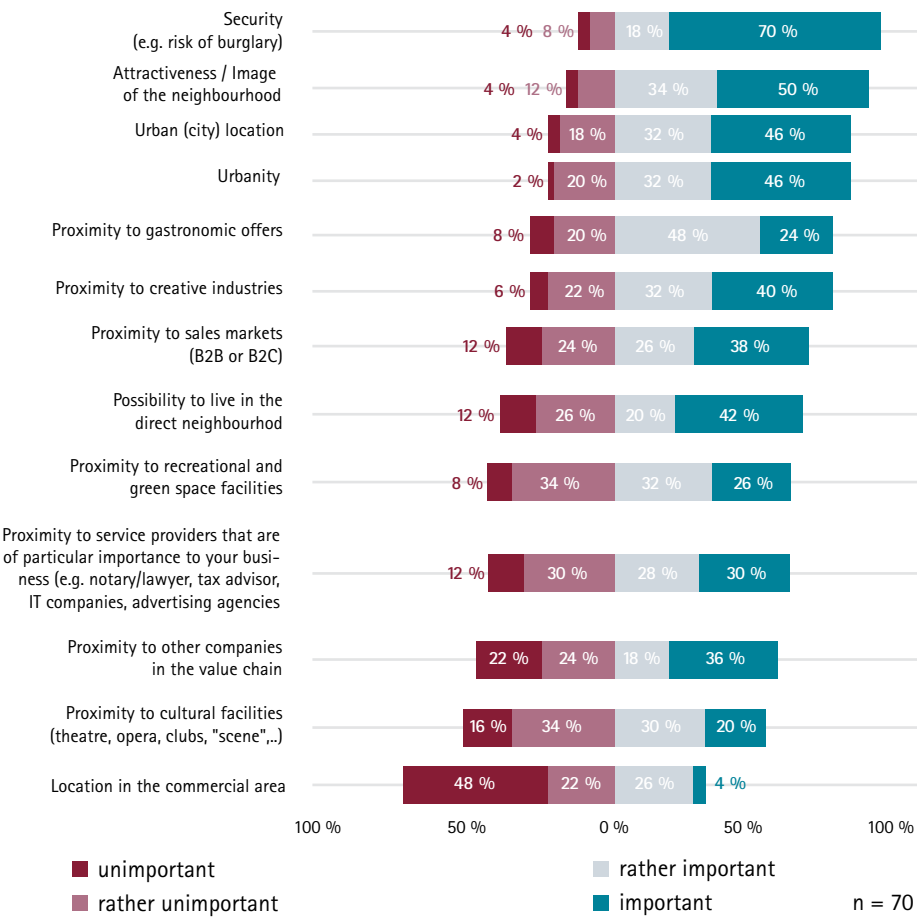
Local economy comprises economic and collective action based on a local value chain, in which products are created and processed in a specific space (e.g. a city) and services are offered. In contrast to globalised product, labour and money flows, the local economy offers the opportunity to use local potentials (e.g. free labour and vacancies as spaces of opportunity), whereby the population can act self-effectively and stabilise the social and economic structure. Reduced transport distances and circular economy approaches (see p. 18) can also have positive environmental effects (cf. Brandt/Gärtner 2019).

As part of a nationwide online survey of urban manufactories on individual **location requirements** carried out by the research project, it was found that respondents were significantly more positive about the development of their own company than about the development of their current location. This underlines the pressure on cities to act. If they do not react to the respective location-related requirements, relocations of companies are to be expected. The companies rate above all the attractiveness or image and an urban location as well as the urbanity of the surroundings as important (► Figure 8). More than two-thirds rate the proximity to gastronomic offerings and the creative industries as rather important to important. Other location requirements include proximity to sales markets and the possibility of living near the business premises. It is therefore not surprising that the location in commercial areas is rated as 'rather unimportant to unimportant' by more than two thirds of the respondents. Since proximity to customers is extremely important for urban manufactories, the visibility of production or the manufactory is an important location component. This justifies the importance of a ground-floor location and the associated possibility of window displays.

Empirical study on the location requirements of urban manufactories.
For more information:
<https://t1p.de/qz69>

► Figure 8
Assessment of the importance of
selected indicators by urban manu-
factures

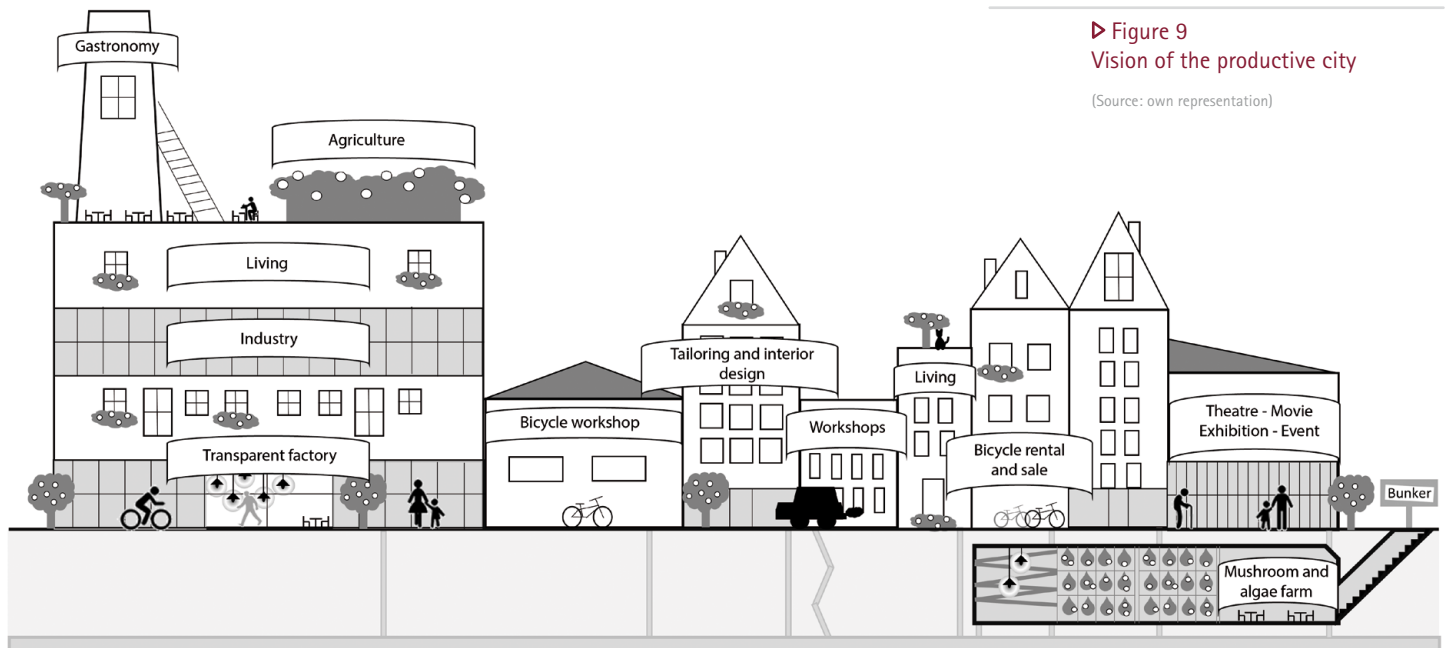
(Source: own representation; data: own survey 2018/19)



Urban agriculture

Professional farming activities, i.e. the production and extraction (primary production) of renewable raw materials on medium to large scales in (or in the immediate vicinity of) urban areas are referred to as urban agriculture. These are self-sufficient and market-oriented, which distinguishes them from small-scale self-sufficient units such as allotments. Farming does not have to take place classically on ground level. It can also take place in, on top of, on or underneath buildings. The sales region is usually local or regional. New sales models, such as solidarity farming, offer close contact with the end consumers. Often there are both unskilled, semi-skilled and skilled employees on the farms (cf. Brandt et al. 2017a).

Urban agriculture contributes to resource protection, short distances and proximity to consumers.



► Figure 9
Vision of the productive city

(Source: own representation)

2.2 Potentials

Urban production as a building block of integrated sustainable urban development.

According to the current state of research and the results of the research project, urban production can make a significant contribution to integrated sustainable urban development and be an important building block for increasing the economic resilience of cities, the social upgrading of neighbourhoods and the quality of life in cities.

If urban production can be integrated into urban development in the sense of the concept described above and anchored in local markets and social neighbourhood structures, **economic, ecological and social effects** can be expected in municipalities. The spatial proximity of production and housing can also lead to social proximity between companies, workers and civil society. For this holistic approach to succeed, active strategy development and implementation by municipal actors is indispensable.

2.2.1 Potentials of urban production from a municipal perspective

Increasing areal productivity by attracting manufacturing companies.

Against the backdrop of increasing pressure to act, also at the municipal level, with regard to climate and environmental protection, urban production is to be regarded as an important building block for achieving sustainability goals. In addition to the aforementioned tendency towards short distances, which the current and present urban planning model of the 'city of short distances' favours, there are other opportunities that are particularly relevant to the environment. Increased production in urban areas offers the potential to convert underutilised areas into intensive use and thereby increase their value (cf. Stiehm 2017: 135), which leads to an increased functional mix and optimises the use of space. The activation of underused spaces, which include vacant shop premises, for example, can contribute to an increase in the attractiveness of the neighbourhood, break up monostructures and help structurally weak neighbourhoods to achieve economic and social upgrading. In addition, there are potentials such as reduced pollutant and noise emissions, an optimisation of the energy supply and a reduced or adapted traffic volume through new mobility concepts (cf. Lentjes 2017: 49 f.; see also Chapter 3.3.3).

Ecological sustainability impacts.

Potentials for the urban labour market, also through the creation of simple jobs.

The manufacturing industry is the economic basis of cities (cf. Cohen/Zysman 1987), as it offers a large number of simple jobs with relatively good wages in addition to the service sector and in contrast to innovation-oriented and knowledge-based industries. The urban labour market has a social integration effect, which is achieved through production jobs especially in regions strongly affected by structural change, such as the Ruhr area, and which can have a positive distributional effect (cf. Rehfeld 2019). Thus, urban production can lead to social and economic participation by creating jobs through the establishment of businesses and keeping jobs in the city through the retention of businesses.

Strengthening the manufacturing sector in urban areas can lead to increased purchasing power and higher business tax revenues, which are among the most important sources of income for municipalities. Furthermore, urban production offers the opportunity to support and create regional value-added cycles. Läßle sees urban economies as having the potential to stabilise the social structure of cities. If local cycles are expanded in a targeted manner, this can also contribute to increasing the resilience of cities to the uncertainties of the world market (cf. Läßle 2013: 140).

Increasing urban resilience by strengthening local economic cycles.

2.2.2 Urban production as a building block of neighbourhood development

The numerous potentials show the enormous range of profiteers, which include not only the companies, but above all the residents of a city. Urban production has many facets that can have just as many influences on the neighbourhood and have a decisive impact on the quality of life in urban areas (cf. Westhoff/Lindner 2019: 918). Urban production can also take the form of open workshops or so-called 'open creative labs', which serve as places of innovation and participation. Production in urban spaces is able to revitalise neighbourhoods by creating opportunities for encounters and exchange. As an impulse generator, urban production can set creative processes in motion and help neighbourhoods to develop an identity. Schössler et al. (cf. 2012: 2) also emphasise that production is currently becoming more visible in the form of new manufactures and that production contributes significantly to the image enhancement of a city. By making production a tangible experience in urban space, it can furthermore contribute to a certain extent to the transfer of knowledge and to people's identification with their surroundings. This in turn could contribute to an increased appreciation of urban products and to more conscious consumption.

Besides the companies, it is mainly the city dwellers who benefit from the increase in production.

2.2.3 Urban production environment as an entrepreneurial location advantage

One of the greatest advantages of a production location in an urban area for companies is the high density of qualified workers (cf. Brandt et al. 2017a; Gärtner et al. 2020; Lentz 2017: 48; Juraschek et al. 2018: 195). If more and more people move their place of residence to the cities, the demand for attractive jobs close to home will inevitably increase. This also gives urban companies a locational advantage in the battle for skilled workers.

Urban locations have a competitive advantage in the battle for skilled workers.

Nearby research institutions and technology centres facilitate access to knowledge and its transfer (cf. Lentz 2017: 48). The proximity to suppliers and service providers resulting from

Urban production leads to multiplier effects.

the urban production location also simplifies communication and cooperation with suppliers. This can be very beneficial for innovative developments in the context of technology-related cooperation and efficiency (cf. *ibid.*). Likewise, existing technology clusters, if any, represent advantages of urban production, because production in urban areas can benefit from enormous multiplier effects and interfaces to other sectors (cf. Mistry 2012: 9). Economic effects can arise, among other things, from the elimination of global transport and falling transaction costs (cf. Lentes 2017: 49).

Due to the trend towards individualised or personalised products, proximity to customers currently represents a great potential of urban space. The spatial proximity makes it possible to involve the customer in the production and development process, whereby the customer can identify with the product and customer loyalty can be strengthened.

The trend towards individualisation and personalisation benefits urban production.

Furthermore, there are options for the synergetic use of material flows and energy carriers, such as the use of waste heat for heating surrounding buildings. This can strengthen the competitiveness of companies by networking the factory and the city (cf. Dombrowski/Riechel 2014: 13; Spath 2014: 61).

Increasing competitiveness through the networking of factory and city.

2.2.4 Increased employee satisfaction through an urban working environment

Employees of urban manufacturing companies tend to benefit from shorter commutes, as the urban location of the company clearly favours the possibility of close proximity between work and home. In contrast, the commutes of employees in companies with a peripheral location are longer. Shorter distances also have a positive influence on the flexibility of working hours (cf. Lentes 2017: 49). This makes it possible to better reconcile work and private life. Urban production locations tend to have a lively environment characterised by diverse uses, in which attractive leisure and consumer offers can be found in large numbers.

Increasing employee satisfaction through urban production locations.

► Figure 10
Potentials of urban production

(Source: own representation)



2.3 Ambivalences

Urban production can lead to higher investment costs in terms of emission and fire protection.

In addition to the potential of urban production, there are challenges and possibly also disadvantages, both for the internal organisation as well as for the neighbourhood and the district.

For the businesses themselves, inner-city locations often mean increased costs. Inner-city site annuities are also reflected in higher leases and rents. In addition, the fact that the location is embedded in a (residential) neighbourhood, which was previously considered an advantage, can force the company to take more cost-intensive emission control measures. In addition, there are higher costs, for example due to the additional infrastructure required for vertical production, which is often necessary for small plots of land. This can make production processes more expensive overall. Only rarely are existing vacant commercial units suitable and directly usable for new urban production such as manufactories or urban agriculture.

Profit prospects can be dampened if there is not enough space at the location to achieve economies of scale, for example for warehousing and the efficient use of production resources. Existing emission protection guidelines and building regulations can impede or even prevent entire production lines; for example, noise protection, which does not allow delivery traffic at certain times; fire protection, which often creates difficulties, especially in the case of changes of use in existing buildings; or requirements for the provision of parking and shunting spaces, which is problematic in inner-city areas.

In turn, the strengthening or establishment of urban production can also have negative effects on the neighbourhood. Depending on the social structure of the residents, production can be perceived as an imposition even if the legal emission limits are complied with, which would affect the image and identification with an address. If logistically intensive industries were to settle in the inner-city area, even the currently envisaged electrification would not solve the rarely addressed problems of fine dust due to abrasion, driving noise due to rolling resistance and overuse of public transport space. Moreover, even if trucks were electrified, there is still a risk of accidents, especially for pedestrians and cyclists, due to the mass moved.

Land competition is increased.

The comparatively extensive land use of material production also competes with other required land uses such as housing, services and social infrastructure. Urban production leads to new jobs in the city. To the extent that these cannot be filled by the local population, more housing is needed at the same time for the new local employees or, in turn, there will be more commuting from outside.

Ultimately - at least this is our assumption - despite the challenges that still have to be answered in terms of planning, law and business management, the greatest advantage of the return of production to the city is that we have the burdens associated with production and consumption „before our eyes, ears and noses“ again and are sensitised accordingly. In the long run, this can only be good for the goal of achieving global sustainability.

3 Toolbox

In order to make the best possible use of the potential of urban production for municipalities, locally based companies, founders and city dwellers, active interventions by municipal actors are indispensable. Through individual measures, recurring events and holistic strategy development processes, conducive framework conditions for urban production are created, which can accompany urban transformation processes. This handbook therefore aims to provide municipalities with the necessary concrete tools in the form of measures and strategies. The toolbox is primarily aimed at urban planners, neighbourhood managers and business promoters. Actors from chambers of industry and commerce (IHK), chambers of crafts (HWK) and science are also part of the target group of the handbook.

Tools in a modular system.

The individual starting position of the municipality must be taken into account in the selection process.

The individual measures must be placed in the respective economic and social context of a city and embedded in a holistic strategy. The recommendations outlined here provide municipalities with a kit of building blocks that offers options for different municipal needs and objectives. However, the handbook is not an instruction manual. It provides inspiration, shows connections and possible tools. Depending on the individual starting points of the municipalities, it is possible to select, adapt, link and coordinate different measures and tools. Some of the tools were tested as examples during the living lab processes carried out by the research project. The measures presented here are not to be regarded as an exhaustive list, but rather show the variety of possible options for action and are intended to encourage people to take new - even unconventional - paths.



The research method of the Living Lab is characterised by its practice-oriented, transdisciplinary and open approach. The projects actively influence social processes (e.g. through interim uses) in order to evoke, accompany and reflect on a targeted transformation (e.g. the establishment of urban manufactories). Such real-world experiments rely on the cooperation between practice (e.g. city administration, associations) and science and integrate their target groups into the design. Due to the cooperative work, the research process is open-ended, which is why the objective is usually reflected upon and readjusted during the project period (cf. Bunse/Meyer 2018; Parodi et. al 2016).

The measures presented are divided into three sub-areas that cannot be sharply separated in reality. The first sub-area, **Strategic Implementation**, contains measures that aim to integrate urban production holistically into the spatial development planning of a municipality. The sub-area of **business-related support** focuses specifically on local businesses and start-ups. The measures described here focus on the creation of a productive atmosphere by, among other things, raising awareness among the population, creating concrete spaces for productive uses and active support and advisory services. In the sub-area of **productive environment**, the focus is on aspects that particularly affect urban neighbourhoods in which production is already located or which would benefit from a settlement of productive enterprises. The measures are aimed at creating suitable infrastructural, urban development and socio-economic conditions for urban production and promote the upgrading of the neighbourhoods by strengthening the local economy.

► Figure 12 provides an overview of the measures in the toolbox and maps the spatial levels and actors that allow for a further classification of the measures in terms of their importance for a holistic promotion of urban production. The order of the measures chosen in the handbook does not mean that they have to be realised in this sequence.

The spatial levels indicate where the respective measure starts. These range from the city as a whole to the district or neighbourhood to the property or plot of land. In many cases, measures can also be implemented at several levels.



Measures are applied at different spatial levels.

► Figure 11
Spatial levels

(Source: own representation)

Promoting urban production as a common goal.

In order for Urban Production to succeed, numerous actors are needed to work together towards the goal of implementing sustainable urban development by supporting and attracting manufacturing companies to the municipality. Politics and administration, including above all the offices of urban planning and development, economic development and building regulations, set the framework conditions. Ideally, the institutional actors pursue a strategy that is accepted and supported by the urban society.

The driving forces of urban production are the local actors.

Politics here means the local political decision-makers, i.e. both the office of the mayor and the city council as the representative of the city's inhabitants. **Civil society** in this manual includes citizens or civic initiatives. The **actor of urban planning** also includes not only the urban planning office, but also other offices of the administration, which can be structured differently depending on the municipality and deal with the strategic development of the city. We assign urban development, building regulations, statistical offices as well as district and neighbourhood management to urban planning. We also subsume start-up promotion, starter centres or impact hubs under the actors of **economic development**. In some cities or regions, these tasks are also the responsibility of the **chambers of commerce and industry**. In some cases, e.g. when local organisational structures are deadlocked, a moderator (e.g. mediation office, scientific support) from outside can be helpful to discuss city-wide strategies regarding urban production with municipal representatives and to initiate the process. In principle, openness to new ideas and products on the part of the actors involved is conducive to strengthening urban production as a building block of sustainable urban development. Cooperation between **clubs or associations** such as adult education centres (VHS), trade unions, consumer centres with economic development or urban planning also contributes to success. Many municipalities operate professional **city marketing**. With the actor of city marketing, we are equally addressing city marketing in the handbook, which is also called upon in the measures mentioned below to take a look at the existing businesses in order to strengthen local or regional products and thus producers. **Science** with colleges, universities and their employees and students can also contribute to new symbioses in the area of research and development or to the promotion of start-ups. Investors and banks also play an important role, especially in start-ups. In addition to municipal actors and associations, **property owners** and the housing industry are also relevant actors in the promotion of urban production. The respective roles of the actors mentioned here are explained in more detail in the context of the respective measure descriptions.

Social acceptance and local co-operation are promoters of urban production.

Involve property owners and the housing industry as further stakeholders.

► Figure 12
Overview of the measures in the
toolbox

(Source: own representation)

Chapter	Measures	Level			Actors										Page
		City	District / Quarter	Real estate / Property	Politics	Urban planning	Economic development	City marketing	IHK/HWK	Science	Owner of the land / building	Businesses	Associations	Civil society	
3.1	Strategic implementation														
3.1.1	Overall urban strategy	■			■	■	■								38
3.1.2	Integrated economic land concept	■			■	■	■								40
3.1.3	Spatial typing	■				■	■			■					42
3.1.4	Company database	■	■				■	■							46
3.1.5	Commercial vacancy register	■	■			■	■								48
3.1.6	Mix of uses		■	■		■									50
3.1.7	Leasehold			■							■				54
3.2	Company-related support														
3.2.1	Branding and marketing	■	■				■	■	■						56
3.2.2	Sensitisation	■					■	■	■	■			■		58
3.2.3	Acceptance of production in the city		■	■		■		■	■			■			60
3.2.4	Support for start-ups	■				■		■	■						62
3.2.5	Incubators		■	■		■	■							■	66
3.2.6	Centre for Urban Production (ZUP)		■	■		■	■	■				■			68
3.2.7	Prosumptive business models			■			■				■	■			70
3.2.8	Funding programmes and financing options	■	■	■		■	■					■			72
3.2.9	Networks	■	■	■			■								76
3.3	Productive environment														
3.3.1	Mobilisation of owners and neighbourhood		■			■								■	78
3.3.2	Cooperation with the housing industry	■	■	■		■									80
3.3.3	Urban logistics	■	■			■	■								82
3.3.4	Agency for Urban Production	■	■			■	■								84

3.1 Strategic implementation

3.1.1 Overall urban strategy

Actors: Politics, urban planning, business development

Goal: Cooperation of municipal actors for the strengthening of urban production as part of sustainable urban development.

City-wide strategy as a basis for action.

Commitment to the productive city.

In order to effectively promote urban production in terms of economic, social and ecological urban development, a city-wide strategy that contains fundamental development guidelines is an ideal basis for action. Prerequisites for the development of such a strategy are „a clear political commitment by the city“ (Läpple 2018: 164 f.) and close cooperation between urban planning, economic development, politics and local businesses. The commitment to the productive city opens up a common framework for action. This goes hand in hand with an understanding of urban development policy guidelines and goals (e.g. economic land development and land consumption) across all levels and departments. The development of a strategic approach, which includes the promotion of production companies in urban areas, as well as a political commitment create the basis for the design of more detailed development concepts. These can include concrete measures at the small-scale level, for example in the form of an integrated business space concept (see p. 40).

Vienna and Berlin are leading the way.

Cities such as Vienna (cf. Stadtentwicklung Wien 2014) and Berlin (cf. Senatsverwaltung für Stadtentwicklung und Wohnen Berlin 2019) show what such a strategy can look like in concrete terms. In these cities, production in urban space is already being pursued as a goal and implemented with the help of a holistically developed municipal strategy.



City



District/Quarter



Real estate/Property

Role model: Vienna City Strategy

In Vienna, there is a general consensus that, in addition to services and retail, a city also needs manufacturing companies to provide jobs and generate income, but also to ensure a stable economic equilibrium. In this context, the City of Vienna has developed various strategic concepts that - based on analyses and basic research in cooperation with scientific institutions - also address the issue of work and production. Since about one third of the total value added in Vienna can be traced back to the manufacturing sector, all relevant actors in Vienna (urban planning, economic agency, municipal council, companies, etc.) were able to agree on protecting and strengthening existing manufacturing companies in the districts and promoting new settlements (cf. Brandt et al. 2017a).

In the Vienna Urban Development Plan (STEP 2025), principles or priority topics of Vienna's urban development were fixed. The strategy paper contains in particular the goal of maintaining industrial production in the city and securing areas for industry and manufacturing (cf. Stadtentwicklung Wien 2014: 77). Based on this, the in-depth specialised concept 'Productive City' was developed, which, in addition to the current framework conditions, also contains measures to guide action, such as production area management.



► Figure 13
Expert Concept Productive City
Vienna

(Source: Stadtentwicklung Wien 2017: 1)

In the city of Vienna, about one third of the total value added can be attributed to the manufacturing sector.



City



District/Quarter



Real estate/Property

3.1.2 Integrated economic land concept

Actors: Politics, urban planning, business development

Goal: Securing land for physical industry against the backdrop of rising land prices and land pressure

Urban development concepts as an instrument for securing and coordinating development goals.

Despite their informal nature, urban development concepts are of great importance in the context of urban development, as they contain objectives of municipal developments as well as align and coordinate different sectoral plans towards one objective (cf. ARL 2003). An overarching urban development concept can create an analytical and conceptual basis for the promotion of urban production. According to a study by the German Institute of Urban Affairs (Difu), current municipal practice offers several examples (Stuttgart, 2016; Munich, 2017; Berlin, 2019) whose concepts have a holistic orientation and also address new urban forms of production as well as interactions with other uses. In order for this informal instrument to have an effect in practice, a political commitment to mixed use and thus also to urban production or a city-wide strategy (see p. 38) is required. If this is ensured, municipal development intentions can be formulated in a politically supported economic land concept and, by embedding it in a city-wide strategy, it is a relevant aspect for consideration in all future planning intentions, in addition to other framework-setting plans (e.g. transport, housing, climate) (cf. Wagner-Endres et al. 2018).

Urban production is a building block of the urban economic structure that needs to be coordinated with other important economic sectors in order to develop suitable strategies and areas. A **modular economic land concept** is conceivable, which in any case comprises an analytical and a conceptual part. The integrated economic land concept:

- serves to steer and coordinate city-wide planning for the development of the urban economy on the basis of a spatial model or framework plan;
- contains modules on different economic sectors or forms, i.e. in terms of content, in addition to the classic commercial building areas of the land use plan (FNP), a further module focuses in particular on city-related trade and production in mixed areas or small-scale commercial locations in residential areas and urban locations;
- uses neighbourhoods as a spatial level for analysis, spatial and content-related location profiling as well as for the preservation of existing mixes in order to prevent displacement tendencies of commercial uses;
- identifies and describes potential areas and plots of land as well as real estate in an optimal long-term manner and differentiates these in terms of their ability to be activated over time (short, medium, long term).

Urban production as part of a modular business space concept.

Within the framework of such an economic land concept, the focus should be on identifying land potential for manufacturing companies in urban areas. Securing this is of enormous importance, especially in view of the existing competing uses and the associated displacement tendencies, such as residential use, but also other competing uses. For example, areas of urban mixed use can be worked out by means of the land use concept, which as an **informal urban development concept** forms the basis for detailed planning. Furthermore, guidelines for land activation, site qualification and avoidance of conflicts of use can be anchored in this informal concept. Building on this, formal safeguarding can take place by using instruments and possibilities, including those of urban development law, such as *building plans* (see p. 50), *urban development contracts* (see p. 51) and also the *concept allocation of land* (see p. 52) or *leasehold* (see p. 54). It is important to determine in advance which areas are suitable for urban production. A spatial typology (see p. 42) can be used for this purpose.

Model: Urban Development Plan Economy 2030 Berlin

The City of Berlin's *Urban Development Plan for the Economy* (StEP Wirtschaft), which was adopted in April 2019, promotes the securing of land for the manufacturing sector. This plan creates the „planning conditions for strategic land provision, rapid land activation and more efficient land use“ (Senate Department for Urban Development and Housing Berlin 2019: 1). The so-called *development concept for the production-oriented area* is an essential component of the StEP. The aim of this concept is to „obtain appropriate land offers for manufacturing and production-related uses that are less profitable on the land market [...]“ (ibid.: 5). Building plans, which exclude non-conforming uses in this context, are seen as a key instrument in achieving this goal (cf. ibid.). The concept also contains cartographic representations in which concrete locations for the production-dominated area are identified and described with a profile. It guides spatial development by defining the permitted uses for the designated areas of the production-rich area. Permitted uses include „all businesses that contribute to the development, manufacture and maintenance of manufacturing products, regardless of their industry affiliation“ (ibid.: 55).

Identify and secure land potential and areas of urban mixed use for manufacturing companies.

Guidelines on the

- Land activation
- Location qualification
- Avoiding conflicts of use



► Figure 14 Urban Development Plan Economy 2030 of the City of Berlin

(Source: Senate Department for Urban Development and Housing Berlin 2019: 1)



City



District/Quarter



Real estate/Property

3.1.3 Spatial typifying

Actors: Urban planning, economic development

Objective: To create a systematic overview of the characteristics of individual reference areas in preparation for further strategic measures.

Cities are in a constant state of change and show numerous differences, especially in small areas, with regard to spatial structures, the utilisation structure and the existing infrastructures in their districts and neighbourhoods. In the context of urban production, the defining characteristics of a district or neighbourhood meet the specific location requirements of urban production companies. In the context of strategically oriented commercial space development, typification at the small-scale level is a suitable basis for making well-founded decisions on the (further) development and qualification of locations. The typification can serve in the systematic conception of a module 'Urban Production' within the framework of a modular commercial space concept (see p. 40), in which it identifies urban sub-areas that are particularly suitable for Urban Production.

Small-scale typification as a basis for the development and qualification of locations for Urban Production.

In general, a **typology** is „always the result of a grouping process in which an object area is divided into groups or types on the basis of one or more characteristics, so that the elements within a type are as similar as possible [...] and the types differ from each other as much as possible“ (Kelle/Kluge 2010: 85). In this case, the grouping into types takes place through the systematic preparation of information in the form of indicators as well as their structured linking in order to depict the spatial prerequisites for urban production as precisely and differentiatedly as possible.

It is true that fine-grained data should be used and **small-scale analyses** should be carried out in order to generate meaningful findings. The neighbourhood level, which has long been part of the action logics of urban planners and city administrations, is often cited as suitable (cf. e.g. Richter 2009: 1 f.; City of Dortmund 2016, City of Düsseldorf 2019). This fine-grained scale makes it possible to recognise small-scale differences and, at the same time, to still have a complete overview of neighbourhoods due to their layout (cf. e.g. Meisel 2014: 8 f.; City of Dortmund 2016; City of Düsseldorf 2019). Meisel 2014: 8; Grimm 2004: 94; Oehler/Drilling 2013: 202; Schonlau/Lindner 2018: 115). Depending on the data situation, other small-scale observation levels used in local government can also be applied as a reference area.

Model: Spatial typing Bochum

As part of the research project *UrbaneProduktion.Ruhr*, a spatially flexible typology was developed using the city of Bochum as an example, which can be transferred to other municipalities. The typology is based on the findings of a survey on the location requirements of urban production (see p. 25) and focuses on urban manufactories. The typology is based on the findings of a survey on urban production (see p. 25) and focuses on urban manufactories, i.e. the location requirements of these mostly small and micro enterprises that produce individual items or products in small quantities and often specialise in repairs. The indicators used in the typology enable an **evaluation of urban sub-areas** with regard to their suitability for urban production. The indicators reflect the following facts:

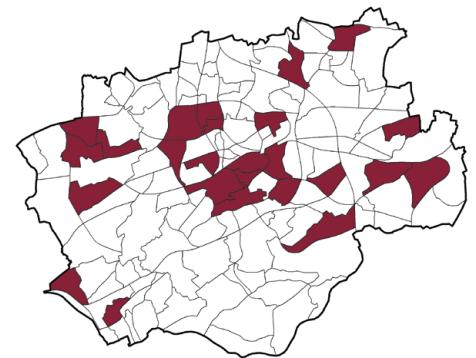
- Mix of uses,
- Settlement density,
- Pedestrian friendliness,
- Public transport connection,
- Connection to the motorway and
- potentially commercially useable areas.

The calculation of the indicators is GIS-based and automated. Methodologically, both more complex aerial photo evaluations and accessibility analyses as well as simpler calculations of ratios and indices are used.

The typology differentiates a total of seven types, three of which in particular have favourable spatial conditions for the settlement of urban manufactories. These types are densely populated, highly mixed areas with a high degree of pedestrian friendliness, good public transport connections and potentially a lot of commercially usable space. These are in particular district centres and the city centre. As an example, ► Figure 15 illustrates the type of *Productive Urban Neighbourhoods* in Bochum, which are mainly district centres. The number and distribution of neighbourhoods in the urban area already gives an indication that they can differ significantly in terms of urban development qualities, socio-demographic characteristics, purchasing power and image. Thus, a further prioritisation of spatial focal points for action is necessary.

Spatially flexible applicable typology for the analysis of the urban area regarding the suitability for Urban Production.

Assessment of urban sub-areas using spatial indicators. For detailed methodology see: <https://t1p.de/5gci>



► Figure 15
Statistical quarters in Bochum of the type *Productive urban neighbourhoods* with favourable spatial conditions for Urban Production

(Source: own representation)

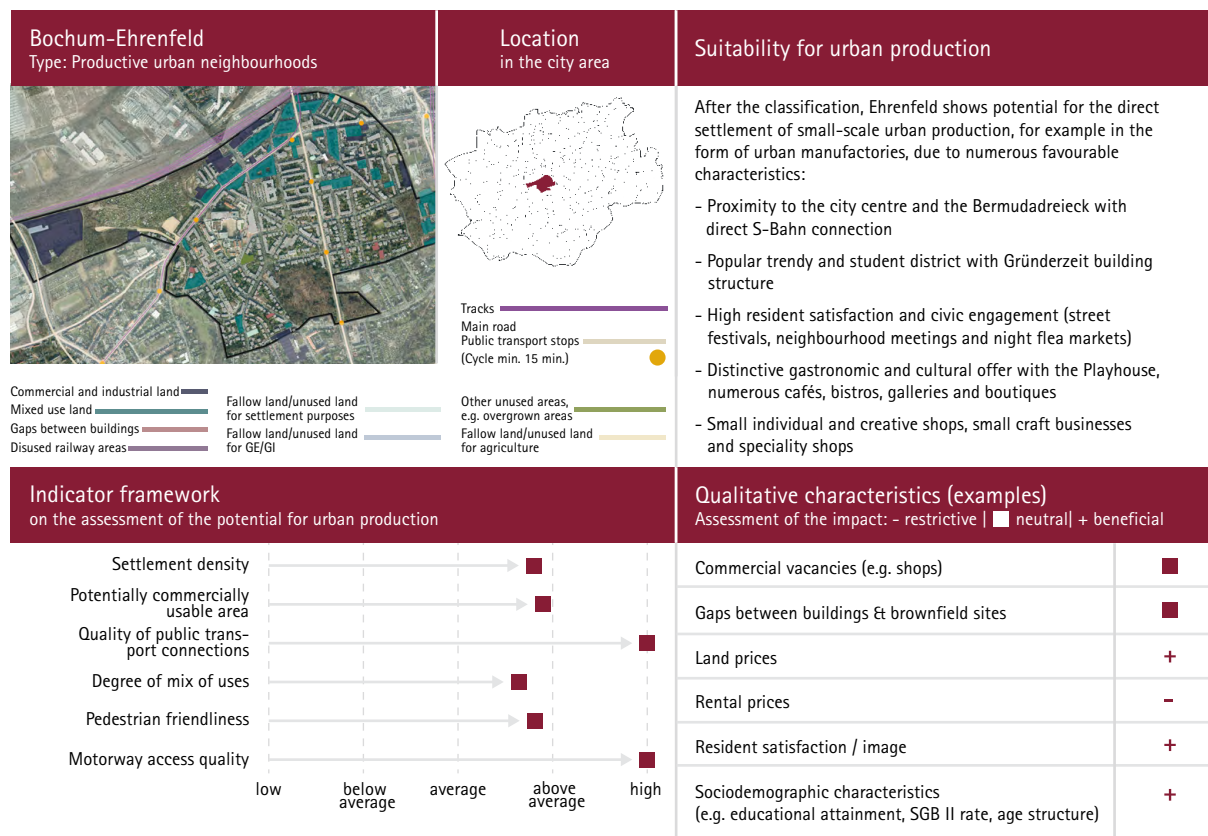
Further types can be distinguished from this, which include commercially dominated areas, purely commercial areas or special commercial locations (e.g. large-scale retail, biomedicine) as well as universities or educational institutions that lend themselves to large-scale forms of production. A further clear demarcation results from locations that are predominantly characterised by residential use, so that these have a lower potential for the settlement of urban production.

The typology enables a comparative evaluation of the spatial conditions for urban production on a city-wide level in order to **spatially identify potential development focal points**. For individual neighbourhoods, profiles are generated with characteristic values, qualitative descriptions and cartographic representations. The following is an example of the profile for the statistical neighbourhood of Bochum-Ehrenfeld, which belongs to the aforementioned type of productive urban neighbourhoods.

Derive fields of action to increase the attractiveness of neighbourhoods.

Statements can be made regarding the attractiveness of small-scale areas, such as neighbourhoods, for urban producing companies and fields of action for increasing attractiveness. The neighbourhoods of the Productive Urban Neighbourhoods type have different local starting situations ranging from creative, socially and economically intact to structurally weak. Consequently, different approaches are necessary, such as prioritising focus areas for urban production and differentiating according to different target corridors to be served with urban production.

Bochum-Ehrenfeld has favourable conditions for the integration of urban production. The municipality can support such structures in order to achieve positive effects in the short and medium term with regard to the local economy and value chains. In urban renewal areas such as Langendreer-Alter Bahnhof or Wattenscheid, on the other hand, the focus can be more on promoting urban production to support long-term social, urban development and economic upgrading processes. Overall, this form of evaluation provides a solid basis as a building block for city-wide urban development and commercial strategies. For the next step, the realisation of urban production in the neighbourhood, detailed analyses must be carried out with regard to focus areas, available properties and land (see e.g. commercial vacancy register p. 48).



► Figure 16
Profile for the Ehrenfeld statistical district in Bochum

(Source: own representation)



City



District/Quarter



Real estate/Property

3.1.4 Company database

Actors: Economic development, IHK, HWK

Goal: Identification of local industries and local value creation as an overview of city-part-related economic potentials

Small-scale differentiated insights with regard to existing business and economic sectors are hardly possible at present.

The most detailed information on companies and economic sectors in the official statistics (e.g. via IT.NRW) is only available at the city level, so that differentiated insights into small areas are hardly possible. Consequently, the development of a small-scale business database is desirable, e.g. in order to identify local industry clusters, exploit potentials of local value chains and possibilities for targeted settlement promotion. For this purpose, an area-wide registration of companies in the material sector is necessary. This can initially be done on the basis of the existing databases of the municipalities and business development agencies, supplemented with data from the Chamber of Industry and Commerce and, if necessary, completed and updated by own surveys.

Database structure

Step-by-step development of a company database for detailed market and location assessment as well as monitoring of changes over time.

A business database can be developed step by step and consist of fundamental basic and structural data in the build-up phase. In the expansion phase, supplementary data, especially structural and location data, can be included and continuously updated, making more detailed market and location assessments and monitoring of changes over time possible.

► Figure 17
Database structure

(Source: own representation)

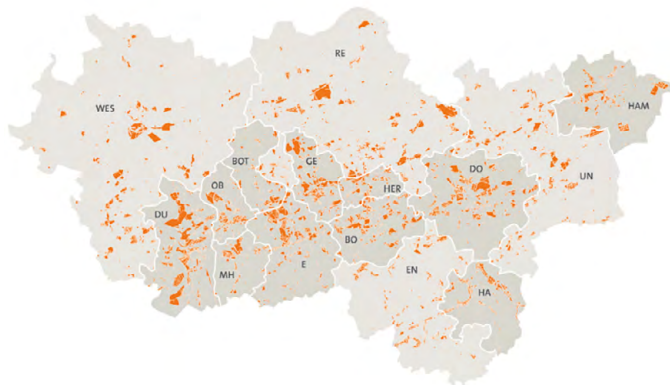
PHASE	BASIC DATA	STRUCTURAL DATA (IN TIME SERIES)	LOCATION DATA
CONSTRUCTION	Name, address, contact	Economic sector(s) (WZ 2008) differentiated by main and secondary activities	Type of land use, de- velopment
EXPANSION	Year of foundation, legal form, number of company loca- tions, etc.	Number of employees diffe- rentiated according to type of employment (e.g. employees subject to social insurance, marginal part-time emp- loyees), turnover	Building law (e.g. cate- gories of the BauNVO, GRZ, GFZ), building type, area in square metres, storey

Model: Atlas of Commercial and Industrial Locations in the Ruhr Metropolis (ruhrAGIS)

The Atlas of Commercial and Industrial Sites in the Ruhr Metropolis, or ruhrAGIS for short, is maintained by Business Metropole Ruhr GmbH (BMR) and has been updated annually since 1998. It contains information on commercial areas of all commercial, industrial and special area locations as well as locations outside core areas with a size of more than 3,000 sqm for the entire Metropole Ruhr (► Figure 18). This geographic information is linked to details of the companies using it or, for example, the economic sectors. The database thus provides a basis for various applications ranging from market research to location and sector analyses to project development (cf. Wirtschaftsförderung metropol Ruhr 2012).

However, the companies in core and mixed areas, which would be necessary for a complete picture and especially with regard to urban production, are not included in the atlas. As can be seen from the example of Bochum (► Figure 6), more than half of the companies are located in mixed areas, which are not yet represented in the BMR database and should be supplemented in order to be able to offer long-term support for companies, value creation networks and land management. In addition, reliable economic trends could be identified by supplementing the structural data on the enterprises.

Consider core and mixed areas as relevant locations for urban production.



► Figure 18
ruhrAGIS areas of the Metropole Ruhr

(Source: Wirtschaftsförderung Metropole Ruhr 2012: 10)



City



District/Quarter



Real estate/Property

3.1.5 Commercial vacancy register

Actors: Urban planning/quarter management, business development

Goal: Activation of vacant and unused spaces for urban production and increasing the productivity of the space, as well as making the location more attractive and creating jobs

A cadastre creates an overview of the number, location and equipment of vacancies.

The concept of urban production has the potential to revitalise structurally weak urban districts whose urban appearance is mostly characterised by commercial vacancies. The creation of a cadastre with the intention of obtaining an up-to-date overview of the exact number, location and equipment of unused or underused properties is extremely useful from several points of view. On the one hand, knowledge about the actual extent can be used to prove the need for action and to sensitise policy-makers. On the other hand, detailed knowledge about the status quo makes it possible to act proactively and to support the settlement process of, among others, urban manufacturing companies. In addition, the processed information can help to assess in which urban development situations the preservation of commercial areas seems sensible and in which cases residential use should be prioritised. A vacancy register is also useful for acquiring funding or subsidies for vacancy activation.

Identify focal points for action and map developments.

Mapping by means of a mobile app or a vacancy tracker.

A cadastre is a fundamental basis for contacting property owners and bringing start-ups together with property owners. In addition to surveying the status quo, the development of the number of unused commercial properties over time can be mapped and **spatial focal points for action** can be identified. A regular and continuous survey is of great importance here. Digital solutions are particularly useful for data collection. For example, information can be mapped using a mobile app based on a geoinformation system. It is also possible to set up a 'notifier' through which owners can register their vacant commercial properties. The Made in Aachen project, for example, proposes an Air B2B in the sense of a community marketplace that provides flexible brokerage of vacant commercial space (cf. Horn et al. 2019: 12). Legal provisions of data protection must be taken into account. Based on the information obtained in this way, spatial analyses can be carried out and commercial properties can be activated and brokered in order to significantly reduce vacancies. In this context, the value of non-monetarily measurable effects, for example in the form of an improved urban appearance, should not be underestimated, in addition to job effects and increased space productivity. If there is cooperation between different actors, the cadastre can function as a tool for communicating spatial needs and offers.

Spatial analyses, activation of vacancies and placement of commercial properties to urban producers.

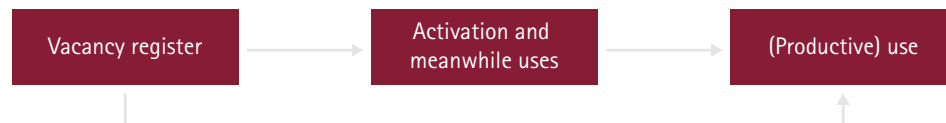


Photo: Thomas Bernholt retrieved from <https://www.osnabrueck.de/zwischenzeit/>

Role model: Vacancy and interim use management of the city of Stuttgart

The Economic Development Department of the City of Stuttgart actively brings together space seekers and property owners and has set up a vacancy and interim use management system for this purpose. On a website, property owners can report vacant spaces and space seekers can find vacant spaces in the city space, among others in the categories of shops and creative centres (cf. Landeshauptstadt Stuttgart o. J.). In this case, however, the economic development agency is dependent on owners actively reporting their vacant commercial spaces.

Vacancy and interim use management as a task of economic development.



► Figure 19
Aims of a vacancy register

(Source: own representation)



City



District/Quarter



Real estate/Property

3.1.6 Mix of uses

Actors: Urban planning

Goal: Securing space for manufacturing industries in urban neighbourhoods, e.g. in area development measures or the sale of communal land

Building on urban development concepts according to § 1 para. 6 no. 11 BauGB, in which, for example, areas of urban mixed use can be secured (see p. 40), the level of binding urban land use planning represents a further control variable. If there is a demand for land for urban production, such 'business-promoting' provisions are important. In the following, we will briefly discuss the building area categories of the German Federal Land Utilisation Ordinance (BauNVO) that are relevant in the context of urban production.

The Mixed Area and the Urban Area

A characteristic feature of the mixed-use area is the qualitatively and quantitatively equal coexistence of non-disturbing commerce and housing (cf. Kuschnerus 2010: 396). According to Brandt et al. (2018: 8), the mixed-use area is therefore relevant for the implementation of urban production. The permissible commercial enterprises include businesses in commercial and office buildings, retail businesses, pubs and restaurants, businesses in the accommodation sector, other commercial enterprises, facilities for religious, cultural, social, health and sporting purposes, horticultural businesses, petrol stations and places of entertainment (cf. Section 6 (2) BauNVO). Which businesses belong to the other commercial enterprises that do not significantly disturb residential areas is determined by means of a typifying consideration (cf. Kuschnerus 2010: 397), for which empirical values and, if necessary, descriptions of businesses are used. Decisive factors include the size of the business, the technical equipment and the design of the work processes (cf. BVerG, judgement of 7 February 1986). In the meantime, it is possible to deviate from the standardised approach, which benefits, among others, processing companies that invest in technical solutions to reduce immissions (cf. Brandt et al. 2017a: 44).

In addition to the mixed-use area, the urban area is also a relevant building area category in the context of promoting urban production. The Urban Area is used for residential purposes as well as for accommodating commercial enterprises and social, cultural and other facilities if these do not significantly interfere with residential use. „In order to maintain the character of the area, two main uses must characterise the area“ (BauGBÄndG Mustererlass 2017: 12). According to two types of main uses are distinguished: „on the one hand, residential housing, on the other [...] non-essentially disruptive commerce, complemented by social, cultural and other facilities“ (BauGBÄndG Mustererlass 2017: 12). According to § 6a para. 1 sentence 2 BauNVO, the mix

Take binding urban land use planning into account as a control variable.

The mixed-use area is relevant for the implementation of urban production.

The Urban Area is also a relevant building area category for Urban Production.

of uses, in contrast to the mixed area, does not have to be equally balanced. At what percentage ratio one can still speak of a balance remains unclear for the time being due to a lack of case law. It is therefore all the more important to make use of the differentiated designation options pursuant to Section 6a (4) BauNVO and to formulate concrete requirements for the mix. By designating areas for commercial uses, the mix ratio in the Urban Area can be controlled, which is particularly important if Urban Production is to be strengthened in neighbourhoods where there is strong pressure on the housing market. For example, on the street side, ground floors can be excluded for residential use (cf. § 6a para. 4 no. 1 BauNVO). Furthermore, it is possible to stipulate that a certain proportion or size of the permissible floor area is to be used for commercial uses (cf. Section 6a (4) No. 4 BauNVO).

In urban areas, the immission guide values for immission points outside buildings are 3 dB(A) higher during the day than in core, village and mixed areas. An increase of 3 dB(A) corresponds to a doubling of the sound energy. The increased immission guide value is intended to enable a mix of uses in dense urban areas and to counteract the displacement of not significantly disturbing but ‚noisier‘ uses such as manufacturing industry to the outskirts of the city (cf. BauGB&G Mustererlass 2017: 12). It should be noted that neither in the urban area nor in the mixed-use area can areas be explicitly secured for the manufacturing industry, as manufacturing industry is not a legal planning term. Nevertheless, the mix ratio can be controlled, even if no distinction can be made between manufacturing and wider tissue with regard to the type of use. In order to promote urban production, there is a need for further approaches and instruments beyond planning law regulation options, e.g. urban development contracts, concept allocation or heritable building rights.

Urban development contracts

In order to promote manufacturing industry despite competition for land, corresponding areas should be secured with the help of urban development contracts concluded between municipalities and private investors (cf. Wagener-Endres/Libbe 2019: 14). Urban development contracts serve to prepare or implement urban development measures by an investor or to promote and secure objectives pursued through urban land use planning (cf. ARL o. J.). They can regulate specific requirements with regard to the location requirements of urban manufacturing companies and specifically reserve areas for manufacturing industry.

Establish mixing ratios in favour of commercial uses.

On the street side, exclude the ground floors for residential use in order to reserve space for other uses.

The Urban Area is intended to counteract the displacement of uses that are not significantly disruptive but are noisier.

Manufacturing industry is not a concept in planning law and thus makes it difficult to secure specific areas for it.

Secure land for urban women producers through urban development contracts.

Allocation of public land according to concept quality.

Concept award

Concept award plays a role above all in the sale of municipal land. When awarding land, especially inner-city land or land close to the city centre, the highest price should not be the only decisive factor, but rather the underlying urban development concept in order to be able to influence the development of the surrounding area despite the sale of the municipal land (cf. Wagner-Endres/Libbe 2019: 14). If the realisation of urban production is planned, the responsible municipal actors should already take this into account when awarding the contract and define corresponding criteria, such as diversity of use and price-reduced rents, in the sense of promoting urban production.

Role model: French Quarter in Tübingen

The French Quarter in Tübingen's Südstadt is a much-cited German example that has realised a mix of uses in the sense of a city of short distances, including manufacturing, in an exemplary manner through new planning. Among the commercial settlements, 50% are services, 20% manufacturing and crafts, 10% retail and 20% other facilities (cf. BBSR 2017).



The central actor in the development of the quarter and during the construction period from 1996-2008 was Andreas Feldtkeller, the then head of the city redevelopment office. Other participants were the initiated building groups (with pre-emptive right of purchase of the plots), architectural offices, property developers, the student union, social associations, church sponsors, companies and company founders.



Photos: UrbaneProduktion.Ruhr

Tübingen has 90,000 inhabitants and offers about 40,000 jobs. There is already a high density and the continuing demand for building land in turn leads to high land prices. Since 1985, the city has allowed almost no development on 'greenfield sites'. Instead, Tübingen relies on a small-scale mix of uses, variable parcelling, public spaces, urban density and achieves these goals through private building communities. This increases identification with the neighbourhood and the willingness to take responsibility for maintaining neighbourhoods (cf. Soehlke 2015). The distribution of tasks is shown in ► Figure 20.

In the French Quarter, around 2,400 people live and around 1,000 work in 150 businesses on a total of 10 ha (cf. BBSR 2017). The success in Tübingen is based, among other things, on the long tradition of building communities, the specialist department with broad-based responsibilities, and the cooperation of architects and project developers with building group experience.

Tübingen already has favourable starting conditions. However, other municipalities can follow the example and build cooperative and productive structures to contribute to a mixed-use and liveable city. Important partners in this process are urban planners, local initiatives, craftswomen, property owners, architects and other people interested in the development. The integration of partners with many years of experience as well as young and creative minds are important.

The city takes over

- steering the overall development (project management and aggressive marketing for the neighbourhood);
- the acquisition of land (e.g. brownfield sites, former military sites);
- the creation of an urban development concept (urban development framework plan, urban development measure, reactivation of old buildings, traffic avoidance);
- the preparation of the development plans for the area (incl. commercial obligation on the ground floor (cf. Schultz 2012: 24);
- In addition, the disposal of contaminated sites and
- the production of infrastructure refinanced by the planning profit.

The plots are then sold. Individual developers, private building communities (e.g. consisting of families, singles and/or small businesses) and property developers can apply for this.

The private building communities as purchasers and developers

- receive land options for their concepts;
- are given structural guidelines by the city, but they have a great deal of creative freedom;
- take on joint tasks such as the design of the inner courtyards and underground car parks and
- bear responsibility for their projects.

This makes them the key actors in development (cf. Soehlke 2015).

The award is made with the help of the concept award (conceptual competition) and not according to the highest bid.

Criteria for selection are:

- the combination of building communities and property developers;
- the contribution to the mix of uses and diversity in the neighbourhood;
- ecology, parcelling, architecture and feasibility (cf. Soehlke 2015).

► Figure 20
Tasks of the city, private building communities and criteria for awarding concepts

(Source: own representation)



City



District/Quarter



Real estate/Property

3.1.7 Leasehold

Actors: Land owners, especially municipalities

Goal: Implementation of urban development goals on land used by third parties, long-term settlement of manufacturing industry through stable ground rent, maintenance of favourable rents for manufacturing industry

High land prices as an obstacle to urban production.

High land prices in growing cities such as Berlin or Hamburg are often cited as an obstacle to the establishment of manufacturing companies in urban areas. In order to make urban production possible, ways must be found to make affordable land available to manufacturing companies and to secure it for the long term. In this context, heritable leasehold is a suitable instrument for municipal actors in all cities to secure affordable land. Leasehold is currently experiencing a renaissance, especially in the course of user-oriented development of buildings and land.

The heritable building right separates the land from the buildings.

Functionality:

The heritable building right separates the land from the buildings. The ground lease owner transfers a plot of land to the ground lease holder for a specific period agreed in the ground lease contract, which is usually 99 years. The leaseholder pays an annual ground rent for the use of the land, which is freely negotiable. The contract can also contain further regulations, for example, regarding the type of use or the content of the management.

Affordable ground rent for manufacturing companies.

Advantages:

If a municipality owns land in urban locations that is suitable for the establishment of production companies, it can conclude a leasehold contract with the companies in which an affordable ground rent is agreed. The company benefits from a certain degree of protection against land speculation and commits itself to the location in the long term. In contrast to selling the land, the municipalities retain room for manoeuvre and secure long-term income. Through the possibility of contractually agreeing regulations on the type of use of the building and on its management, the municipalities can exert influence on its use and thus counteract the displacement of production companies.

Role model: ExRotaprint

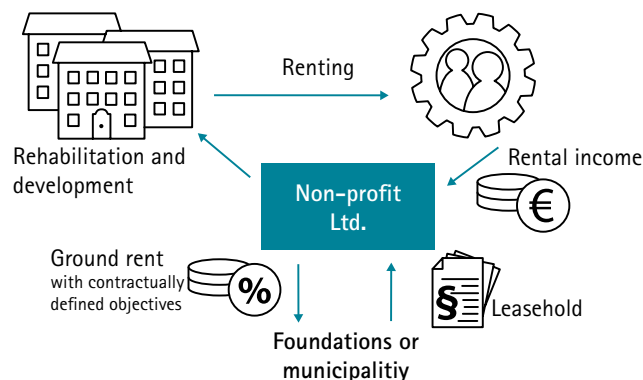
The example of *ExRotaprint* in Berlin shows how heritable building rights can secure affordable rents and thus long-term development prospects. *ExRotaprint* is located on the former production site of the former printing press factory Rotaprint in the district of Wedding and describes itself as a location for work, art and social issues. Urban production is present in the form of manufactories, which include a frame builder, a manufacturer of modular shelving systems and a workshop for screen printing. The ground floor zones are explicitly designated for manufacturing businesses (cf. *ExRotaprint* n.d.). When the property was put up for sale to the highest bidders, the visual artists Daniela Brahm and Les Schliesser developed a concept with the aim of establishing a location of heterogeneous use and favourable rents for all. In order to achieve this goal and to secure the achieved purchase price against speculative profits, a non-profit limited liability company (gGmbH) was founded and use was made of the heritable building right. A leasehold contract was concluded with the trias and *Edith Maryon* foundations, which focus on a new approach to land and are the owners of the land (cf. Brahm/Schliesser 2014: 20). The ground lease agreement contains the following objective: „The site of the former Rotaprint printing press factory is to provide favourable space for social institutions, artists and small businesses in the long term. The mix of uses in particular offers great potential [...] that will radiate into the neighbourhood“ (cf. *ExRotaprint* n.d.). Thus the goals of *ExRotaprint gGmbH* were concretely anchored in the leasehold contract. Not only foundations but also municipalities can make use of ground leases to realise urban policy goals. The combination of committed people, the support of the trias and *Edith Maryon* foundations and the use of the leasehold contract contribute significantly to the success of the project.



Photos: UrbaneProduktion.Ruhr

A merger of producing and other companies and institutions into a non-profit limited liability company is conceivable.

Anchor productive development goals in the leasehold contract.



► Figure 21
Functioning of the leasehold using the example of *ExRotaprint*

(Source: own representation according to Stadt von Unten o. J.)

3.2 Company-related support

3.2.1 Branding and marketing

Actors: City marketing, IHK, HWK, business development

Goal: Marketing and strengthening local demand for urban products

Strengthening urban production through branding, marketing and positive communication.

Image and brand building around the topic of urban production is necessary so that locally and regionally produced products are more strongly integrated into the reality of consumers' lives. The aim of a branding and marketing strategy should be to create trust and strengthen people's regional identity and responsibility. In order to strengthen urban production and increase demand for locally produced goods, it is important that producers, together with community actors, highlight the benefits of the products. Branding and marketing can take place at different spatial levels, from the district to the region, depending on the target group and objectives.

In the following, possible starting points are presented that could be part of a 'Made in campaign', which was initiated, for example, by the Austrian Federal Economic Chamber (WKO) in 2017 as a location campaign for Viennese industry. These give an idea of the concrete measures that can be taken to improve the market share and thus the turnover, but also the level of awareness of locally and regionally produced products. For this, it is first necessary to create an overview of the companies and the respective products produced in the urban area with the help of a company database (see p. 46). This knowledge also forms an essential basis for action for further measures described in this handbook.

Joint internet presence

For more information, see the website of 'Wien Products' of the Vienna Chamber of Commerce: <https://t1p.de/a53c>. This is available in three languages and can thus also be used for tourism.

A joint internet presence of urban producers, which for example locates manufactories in the urban space and contains corresponding company portraits, can be a first step towards a stronger visibility of production. Among other things, the measure aims to bring producers, traders and consumers together and to convey knowledge about production methods and product quality. In addition, the respective cities can use this to distinguish themselves through any existing individual sector focal points and to highlight unique selling points. The offer can be driven and implemented by the economic development agency, the Chamber of Commerce and Industry, the Chamber of Trade and Crafts or the city marketing department. There are, however, also local companies, advertising communities, associations and initiatives that strive to market regional products.



City



District/Quarter



Real estate/Property

Pop-up markets

Small, centrally organised markets, supported by the city marketing, where companies present and sell their products and, if necessary, allow customers to participate in the production process, enable potential customers to come into direct contact with urban products. In particular, companies that produce urban but not inner-city products can be given the opportunity to present themselves to a large audience and to win customers. Depending on the available time and financial resources, the pop-up markets can be organised and carried out monthly or annually by the companies in cooperation with the neighbourhood management, city marketing and local advertising associations.

Product label

A label created specifically for urban products can make it easier for customers to directly recognise locally produced products and thus increase their willingness to buy. The example of the Vienna Chamber of Commerce and Industry, which founded the label 'Wien Products' in 1995 to support selected Viennese companies in their export activities, can serve this purpose (cf. Wien Products o. J.).

Social media

Local producers, upcoming events and other news should be actively promoted via the social media of the companies as well as the economic development agencies in order to achieve the widest possible reach.

Role model: Made in NYC

Under the label Made in NYC, a platform has emerged in New York that includes over 1,200 local companies from all sectors of the manufacturing industry. It was launched by the Pratt Center for Community Development, a university institution. To show the range and diversity of products produced locally in New York, Made in NYC organises pop-up markets, special events and various thematic campaigns. In addition, local manufactures can advertise with the Made in NYC logo to accentuate the local anchoring of production (cf. MINYC o. J.). The advantages are also the acquisition of further knowledge, community and joint marketing. „Our listing on MadeinNYC.org is the #1 way people find our company. The Made in NYC logo and brand has huge marketing value and is a great asset to use on our products“ (Rebecca Scott, cited in MINYC n.d.).



Photo: UrbaneProduktion.Ruhr

Actively promote local products.

Uniform layout for stickers in shop windows and printed information material.

In the city of Vienna, about one third of the total value added can be attributed to the manufacturing sector.



City



District/Quarter



Real estate/Property

3.2.2 Sensitisation

Actors: Economic development, city marketing, IHK, HWK, other associations, societies, consumer centres, science

Goal: Create awareness about the added value of local products and their production processes

Raise awareness of the sustainability impacts of consumption.

Develop and implement formats that are suitable for the target group.

HWKs, IHKs, libraries and adult education centres as cooperation partners.

Educate about the opportunities of a productive city.

In order to promote urban production methods, measures should be taken, especially on the part of economic development and city marketing, which aim firstly to position the topic of urban production more strongly overall, secondly to create awareness of the need for sustainable, future-proof structures and thirdly to impart knowledge about interactions and potentials of urban production. In contrast to branding and marketing (see p. 56), awareness-raising is primarily about conveying additional knowledge about the products and their production. The focus is on raising awareness and creating an awareness of the sustainability-relevant effects of one's own consumption, as **sustainable consumer decisions** bring about the optimisation of the entire value chain (cf. BMU o. J.).

Based on the respective target group, it is important to choose or develop appealing and exciting formats. In this context, opportunities for informal exchange between institutional actors and civil society as well as space for discussion are important. In this way, existing questions can be responded to and uncertainties or even fears can be allayed. In addition to municipal decision-makers, actors in city administrations and interest groups, appropriate measures should also be addressed to universities, colleges, students and citizens. All of these are important actors in the process of establishing urban production. Further cooperation partners can be the chambers of trade and commerce, chambers of industry and commerce, city libraries or adult education centres.

Lectures

Individual lectures or lecture series can point to opportunities of a productive city for sustainable transformative urban change in different contexts and inform decision-makers in the civil society, organisational or political context. These can be organised in the context of start-up events on the part of economic development agencies, e.g. by local social-ecological enterprises presenting themselves.

Workshops

Through interactive workshops given by urban producing entrepreneurs themselves, in which, for example, everyday objects are produced together by hand, people can immerse themselves in the world of production and experience what it means to make things themselves. The haptic handling of the products and their individualisation can lead to a higher appreciation of the products (cf. Butzin/Meyer 2020).

Festivals and fairs

Lectures and workshops can also be part of a festival or a fair of urban production, which can extend over a weekend or a longer period of time. Future workshops or open workshops are conceivable as further building blocks that enable an active exchange on the opportunities of urban production. Among other things, this increases the population's acceptance of production in the city and the reputation of crafts (see Inspiration Festival of Urban Production p. 104).

Role model: WatCraft

The research project [UrbaneProduktion.Ruhr](#) focused in particular on two structurally weak urban districts in which the framework conditions for an open exchange and dialogue as well as an interactive approach to urban production were specifically created to initiate productive processes.

For this purpose, the pop-up shop WatCraft was opened in a vacant shop in the Wattenscheid district of Bochum in February 2019. Events and workshops on the topics of urban production and do-it-yourself took place over several months. In the workshops, furniture and insect hotels were built and spreads and natural cosmetics were produced. In addition, there were practical offers on the topics of 3D printing, screen printing and mushroom cultivation. In addition to the workshops, various theme evenings were held with urban producers, committed citizens and scientists to discuss the opportunities and implementation possibilities of urban production. The aim was and is to discuss the implementation of urban production and its contribution to a liveable city with citizens, local institutions and companies and to create networks and support structures. The response was good. The numerous discussions revealed local structures and thought patterns that are relevant to the promotion of urban production and sustainable transformation.



Photo: UrbaneProduktion.Ruhr



A **pop-up shop** is a short-term and temporary retail outlet that operates temporarily in vacant properties. The offer is usually that of a boutique, but can also resemble a warehouse sale. In addition to the obvious goal of selling goods, the sudden appearance and advertising by word of mouth are intended to increase the perceived value of the goods on offer and encourage customers to buy spontaneously (cf. Reil 2014). By using a vacancy, it and the surrounding area are upgraded in the short term and thus offer added value to the municipality.



City



District/Quarter



Real estate/Property

3.2.3 Acceptance of production in the city

Actors: City planning, city marketing, IHK, HWK, companies

Goal: Acceptance and support of urban producers by making the production process visible

Acceptance by the resident population as the key to avoiding conflicts of use.

The fear of negative influences on the living environment and everyday life has a strong impact on the acceptance of production companies.

Educate residents about the importance of having a variety of uses.

The exchange between the production company and the surrounding area can positively influence the acceptance of the residents.

Advise companies on the increasing importance of acceptance building.

Production in urban areas faces the challenge of existing in harmony with neighbouring uses. In this context, the acceptance of the residential population towards production facilities is a key to avoiding conflicts of use. **Acceptance as a success-critical factor** must always be created anew in urban space (cf. Schössler et al. 2012: 2). It can be observed that in cities where there is a mixture of living and working for historical as well as topographical reasons, the acceptance of the population towards manufacturing companies is comparatively high (cf. Mühl et al. 2019: 66). Acceptance is strongly influenced by people's fear that manufacturing companies could have a negative impact on their living environment and everyday life (cf. Mamonova/Fromhold-Eisebith 2019: 15). However, there are already examples of environmentally friendly and environmentally compatible production methods and architecturally solved construction methods (see Inspiration *WITTENSTEIN bastian GmbH* p. 88). Urban production can also lead to further innovations and developments in terms of resource-efficient and low-emission production, thus creating a competitive advantage over other businesses.

In this context, it is also of central importance to raise the awareness of the residents for their living environment, which is upgraded by the presence of various uses, especially manufacturing companies. Manufactories and factories should not only fit into the urban context structurally, but also interact with their surroundings. This interaction, in the sense of an exchange between the production company and its surroundings, can take place through various measures (e.g. in the form of a public playground on the company premises for the neighbourhood (see Inspiration *WITTENSTEIN bastian GmbH* p. 88), company tours or as transparent production (see *Transparent factories*, p. 61). In this way, companies also contribute to sensitisation (see p. 58).

Economic development agencies and other institutional actors should bring the importance of acceptance building to the attention of urban production companies through transparent corporate communication and integration into the surrounding area and support them in necessary urban planning.

Transparent factories

To strengthen the image of production, there are more and more „modern glass buildings that offer a lot of transparency“ (Stiehm 2017: 70) and insight into the production process. Companies expect this to increase the acceptance of production in the residential environment. From an urban planning perspective, ‚glass‘ manufacturing companies can serve as points of attraction if they fit into the built environment and the reality of people's lives and thus create a certain publicity, especially in ground-floor locations. Well-known examples are VW's Gläserne Manufaktur in Dresden, the *Schmidt bakery* in Karlsruhe (see role model) or the *Hafenkäserei* Münster (see Inspiration p. 96). However, the term is not uniformly defined. While we understand it to mean the insight from the outside into the buildings and the production process, the *Ministry of Food and Rural Areas* in Baden-Württemberg associates it with action days or open days at agricultural and food processing companies (cf. MBW Marketinggesellschaft mbH). The term „transparent production“ is also used for regular public tours of farms (see *Trigema's* transparent factory in Burladingen, *Katjes'* transparent candy factory in Potsdam or *Bayer Bitterfeld GmbH* for a tour of aspirin production). In all cases, however, the aim is to create transparency and thus acceptance.

Role model: transparent factories

In addition to large companies such as VW or Bayer, it is above all small and medium-sized enterprises that are increasingly seeking contact with their customers and want to pass on the idea of do-it-yourself and value creation. Transparent factories that allow insights into production or even invite people to become part of the production process and participate in workshops can create the necessary transparency and acceptance. One example of this is the *Schmidt bakery* in Karlsruhe. A bakery that not only produces bread, but also imparts knowledge. The bakery and sales are located in one room in Karlsruhe's city centre and are only separated by a pane of glass. The bakery places high value on quality, tradition and transparency in order to bring people closer to the production process and show them where the products we eat every day come from and what is in them. Furthermore, it strengthens the image of the craft (cf. Bäckerei Schmidt o. J.; Haberkorn 2017).



Photos: UrbaneProduktion.Ruhr



City



District/Quarter



Real estate/Property

3.2.4 Support for start-ups

Actors: Economic development/start-up promotion, universities, vocational schools, IHK, HWK

Goal: Competent advice, support and empowerment of potential female founders and start-ups for sustainable business models in cities

Promotion of start-ups in the manufacturing sector.

In large urban agglomerations, the start-up intensity is higher than in other parts of the republic.

Start-ups of production companies tend to be more expensive than start-ups in the service sector.

In addition to the relocation of companies back to the urban environment, company start-ups in particular are an essential building block for increasing the share of production in urban areas. In the industrial sector, a higher start-up intensity has been observed in cities in recent years (cf. Gornig/Werwatz 2018: 5). In large agglomerations, such as the Metropole Ruhr, the start-up intensity in the industrial sector is 40% higher than in other parts of the country (cf. ibid.: 1006). However, how many of these start-ups are actually located as production companies in urban and mixed-function districts and can thus be assigned to urban production is unclear due to a lack of data.

In order to strengthen the settlement of production companies in urban areas, economic development agencies and public institutions, but also universities and vocational schools, should actively promote potential founders and start-ups in the manufacturing and production sector. It is important that municipalities recognise and know how to support the **added value of micro and small enterprises**, e.g. through the use of vacancies, creation of local supply or semi-public spaces, for the local economy. In particular, active support from competent and local advisors is needed in the concrete search for a location, in legal and financial issues and in the preparation of the business plan. Since start-ups in the manufacturing sector tend to involve higher investments than start-ups in the service sector, information on existing *funding programmes and financing options* (see p. 72) from experts is also important.

Initial counselling services

Initial counselling services that are as low-threshold as possible offer potential founders the opportunity to discuss their start-up idea with knowledgeable experts and to find out about the necessary steps towards self-employment.

Pre-check

An additional counselling offer can take the form of a pre-check, for example. This can cover a period of two to three days and, in addition to teaching the necessary tools, also include inputs on the strategic further development of the respective business model. An exchange with successful founders and entrepreneurs can also provide new impulses.

Start-up competitions

In addition to simple advisory services, start-up competitions represent another option for start-up promotion to present the respective product idea to a larger audience and to acquire know-how. The focus is primarily on the following aspects: Building networks, optimising product ideas, sounding out their market potential, training soft skills, informing about formalities and finding the ideal production location. The competitions can take place over a longer period of time and include various theme evenings, individual consultation hours and accompanying seminars. Innovative product ideas can, for example, be awarded a prize for urban production and recognised accordingly. The external impact of a start-up competition, which strengthens the social perception of urban production, is not insignificant. In the best case, there are already established municipal or regional support structures that can be linked to.

Exchange and networking with other founders and entrepreneurs.

Build networks, present and optimise product ideas.

Accompaniment

After a successful start-up, there is often a lack of offers to review the business model once again and to improve it if necessary. The first three years in particular are crucial for young companies and can be supported by targeted further advisory and networking offers or production-specific regulars' tables or meet-ups on the part of business development, the Chamber of Industry and Commerce and/or the Chamber of Skilled Crafts. In the case of the latter, the focus should be on low-threshold exchange with other founders and/or female entrepreneurs. With these offers, the companies should be able to survive on the market and develop further.

Special prizes for start-ups in the manufacturing sector.

Pop-up shop

Providing a property with low rental costs at the beginning of the venture can be another support structure. Additional support is provided by *incubators* (see p. 66) that provide machines to produce and test prototypes. Inexpensive display space for products at markets, in a shop or online, can serve as further measures to promote local marketing.

The development in the first three years after the foundation are crucial for success.

Role model: Special prize for Urban Production at the start-up competition Senkrechtstarter in Bochum

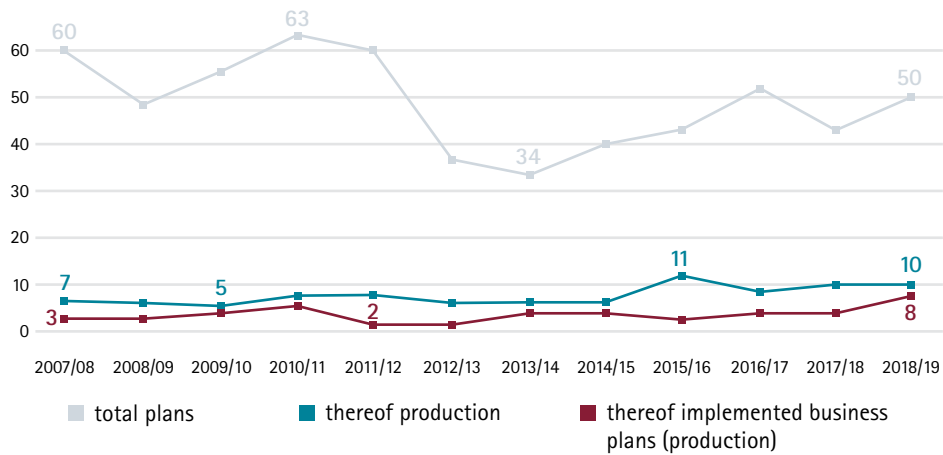
In 2017/18, the research project *UrbaneProduktion.Ruhr*, in cooperation with Bochum economic development, expanded the NRW-wide start-up competition *Senkrechtstarter* to include the special prize *Urbane Produktion*. The GLS Bank has endowed this with prize money of 1,500 euros. The start-up competition has been run by Bochum economic development for more than twelve years, is open to all sectors and includes free advice from a network of experts, in this case also from the research project, among others. The first winner of the *special Urban Production Award*, *ChargAire*, was able to move into premises on site in Bochum thanks to the support of Bochum economic development. Sales of the regionally produced, wireless, customisable chargers made of natural materials began in time for the 2018 Christmas shopping season (cf. Schonlau et al. 2019: 3). In 2019, the 'Special Prize Urban Production' went to *amat habito*, a founder who wants to produce mobile mini houses from local and regional resources. Another prize in the 2019 *Senkrechtstarter* was a stand at the Christmas market for selected days. Such an action can also support founders. ► Figure 22 shows the slightly increasing share of business ideas in the tangible sector in relation to the total number of business plans submitted.



Photo: UrbaneProduktion.Ruhr

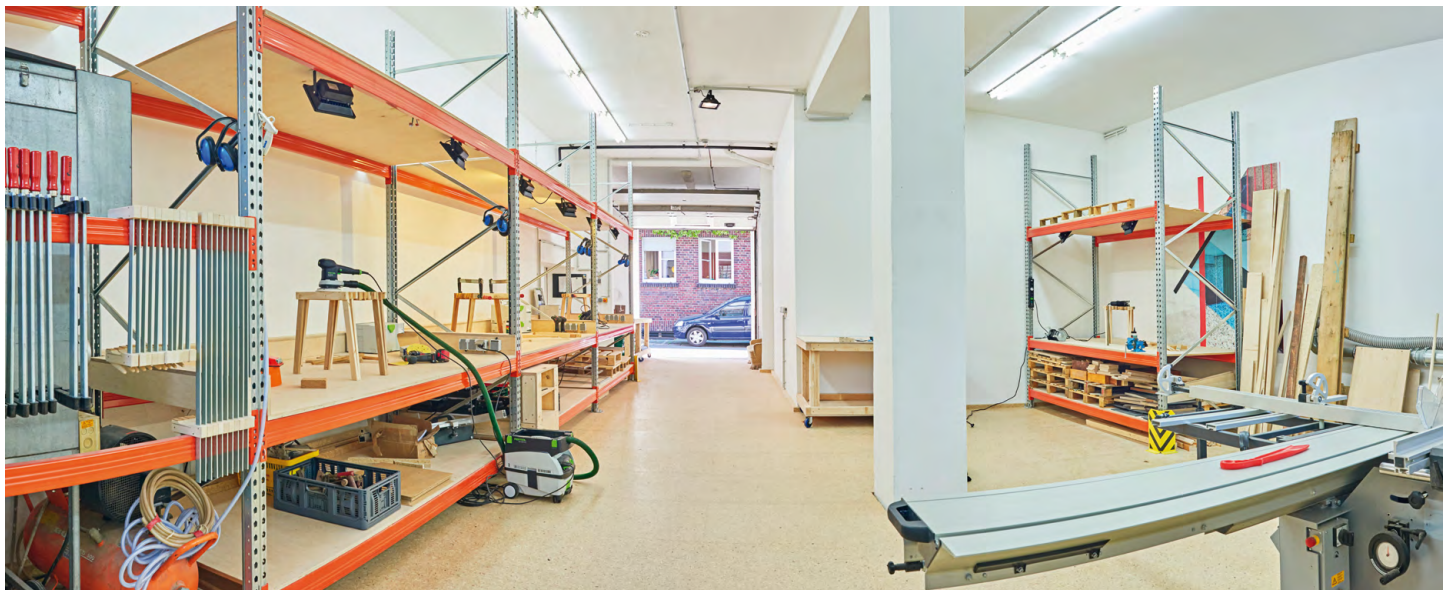


Photo: Bochum Wirtschaftsentwicklung / Grubenglück



► Figure 22
 Number of business plans submitted in the Senkrechstarter start-up competition in Bochum (since the start of the competition in 2007 until 2019)

(Source: own representation;
 Data: Economic Development Bochum)



Photos: Björn Hlckmann / Die Urbanisten e.V.



City



District/Quarter



Real estate/Property

3.2.5 Incubators

Actors: Civil society, urban planning, business development

Goal: Creating spaces of opportunity for material and creative experimentation by potential female founders

Understanding creative individuals, companies and initiatives as potentials.

Provide spaces for producers to develop and test products and business models.

Innovation and participation sites as incubators of urban production.

Impart knowledge about products and production methods.

There is potential for production-related start-ups in urban space, especially among creative individuals, companies and initiatives that test and further develop unconventional and innovative business, operator and financing models. In today's urban development, spatial enterprises in particular are known for successively appropriating places, creating a new mix of uses there and breaking new ground in terms of corporate structure and financing (cf. Flögel/Gärtner 2011 and 2012; Buttenberg/Overmeyer 2014). In order to promote these innovative project ideas and the creative minds behind them and to support development processes, there is a need for spaces of opportunity in which producers can try out and develop and which can be made available free of charge or at low cost by municipalities, business development agencies, universities or even civil society organisations. Makerspaces or FabLabs can function as innovation and participation spaces while being incubators of urban production. These open places can influence creative processes, for example, for product development. Support in the search for space for makerspaces or even the provision of cheap space as well as the mediation of contacts to build up a network are among the necessary support measures on the part of urban planning and economic development.

Libraries of knowledge and production

Libraries are also increasingly being brought into the context of open learning and working spaces. Open workshops could become the libraries of the future and thus be adopted as a voluntary task of the municipality. Since knowledge is digitally retrievable, libraries are currently already looking for future-proof concepts. The expansion to include a library of things as well as a place that provides production machines for learning and use would be one possibility. In connection with the VHS, existing Makerspaces and other practical learning places, workshops can be offered. Visitors can get creative and try things out for themselves. In the past, video editing stations, film workshops, multimedia labs, robotics workshops and the like have already been included in the standard offer of many libraries. Crafting, music-making or knitting opportunities in public libraries that promote collaborative handicrafts, helping each other try out different techniques and materials in a public space dedicated to the community are often linked to libraries (cf. Zukunftswerkstatt 2013). 3D printing and other technical innovations allow the range to be expanded. The lending of objects such as tools or a repair café to a library is also conceivable as a new task of public libraries in the sense of the sharing economy. Here, it

is important to coordinate with already existing offers in the city and not to create competition in the immediate vicinity, but rather to meaningfully complement and network between the locations and actors.

A Makerspace - often called a FabLab (from fabrication laboratory) after the approach developed by the Massachusetts Institute of Technology (MIT) in 2002 and now spreading globally - is an open workshop with the aim of giving private individuals and individual tradespeople access to modern manufacturing processes and high-tech equipment. Typical devices are 3D printers, laser cutters, CNC machines, presses for deep drawing or milling to be able to process different materials and workpieces. FabLabs allow the uncomplicated production of highly individualised one-off items or spare parts that are no longer available (rapid manufacturing). There are overlaps and cooperations with educational institutions such as schools and universities, the open hardware, open source, Do-It-Yourself movement (cf. Fabfoundation o. J.) and repair cafés.

Role model: Open Workshop - House of Own Work (HEi)

The *Haus der Eigenarbeit* is one of the oldest open workshops in Germany. The HEi was initiated in 1987 by the research association *anstiftung* and accompanied scientifically. Four workshops, a café area and offices are located on 540 sqm in a rear building - a five-minute walk from Munich's Ostbahnhof railway station. Offering over 30 courses by 45 instructors, the wood workshop attracts the most people. Ceramics and upholstery courses as well as courses on operating various machines are also very well attended. The HEi adapts to the changing demand of the users and develops accordingly. Although the HEi is a non-profit organisation and prototype development is the most that takes place within these structures, commercial spin-offs have already been successfully realised in the past, which have come about through trying out, developing and working in the open workshop. The HEi generates half of its annual budget itself through income from courses, workshop use, tool hire or donations. The other half is funded by the *Munich Employment and Qualification Programme (MBQ)* of the *Department of Labour and Economic Affairs* and the *Department of Culture* (funding of cultural events in the HEi) of the City of Munich as well as by the *anstiftung* (see I 8).

Further material, support and funding opportunities for initiatives that would like to open an Open Workshop, a Makerspace or a FabLAB are available from the Association of Open Workshops (<https://www.offene-werkstaetten.org/>), from the *anstiftung* (<https://anstiftung.de/selbermachen/offene-werkstaetten>), the Montag Stiftung Urbane Räume (<https://www.montag-stiftungen.de/ueber-uns/montag-stiftung-urbane-raeume>), the Fabfoundation (<https://www.fabfoundation.org/>), the Maker Faire (<https://maker-faire.de/makerspaces/>) or in cooperation with educational institutions e.g. VHS, colleges, universities. In addition, a European pilot project was launched in 2017 to support the 'Maker Movement' and promote exchange (<https://vulca.eu/>).



Photos: UrbaneProduktion.Ruhr



City



District/Quarter



Real estate/Property

3.2.6 Centre for Urban Production (ZUP)

Actors: Businesses, urban planning, business development, HWK, IHK

Goal: Synergies between crafts enterprises; joint solutions against high land prices and land pressure in cities

High land prices and diverse synergy effects suggest merger.

Increased intensity of use due to multi-storey construction.



Photo: UrbaneProduktion.Ruhr

High land prices in central urban locations, but also the diverse synergy effects that mergers of manufacturing companies bring with them, mean that models such as commercial or craftsmen's yards are increasingly becoming the focus of economic land development. As centres of urban production (ZUP), craftsmen's and commercial yards can secure affordable space for manufacturing companies as part of an active real estate policy and contribute to the provision of public services in the city with their central location close to residential areas. The municipalities must identify suitable locations and support project initiatives of the local economy. For each location, it is important to develop its own recipe that can be implemented together with partners. Municipalities and local business partners must, for example, define the ownership structure, develop concepts for a mix of uses and develop a suitable operator model. In principle, different urban planning situations can be used, whereby larger building complexes, for example with inner courtyards, are particularly suitable. A multi-storey construction increases the intensity of use. Although this leads to higher construction costs, these are spread over many traders (cf. Ministry of Economics, Transport and Innovation, Hamburg 2014: 6). New development on a conveniently located brownfield site is just as conceivable as the conversion of existing building structures. When realising urban production centres, it is important to integrate innovative sharing models, such as the joint use of a CNC milling machine or various tools, and networking both with each other and with scientific institutions (Craft 4.0). A mix of sectors is helpful to embed the ZUP in the neighbourhood: For example, in addition to the classic building trade, this could include studios, design manufactories, small-scale production and craft and culture-related services. Since the crafts sector is an important pillar for the cultural and creative industries, jointly used office and communal spaces can generate synergies. Well thought-out structural measures are necessary to ensure noise protection for noisy production methods and to avoid conflicts between residents and businesses. The concept can be expanded to include coworking or open workshops. When implementing a centre for urban production, it is essential to provide a broad range of information and to involve local businesses in order to identify wishes and needs. In addition, the local companies should also be able to implement their own ideas and concepts. A broad participation strategy, e.g. needs assessments, communication and information, must be designed for the development of the Craftsmen's yard. In addition, those responsible should inform local residents about the development processes and involve them in the process in order to ensure embedding in the local civil society structures and to create acceptance for the centre.

Role model: Handwerkerhof Ottensen

Against the background that small and medium-sized crafts enterprises in Altona, as in the whole of Hamburg, can hardly find affordable commercial space, fifteen self-employed people and businesses – including plumbers, a carpentry firm and architects – joined forces in 2012 to plan and build the *Handwerkerhof Ottensen* according to their own ideas. The basic idea was to create a network that would enrich everyday entrepreneurial life in a lively and supportive way, and to be able to offer small craft businesses permanently low rents, even in good city locations. The companies working in the house not only actively accompanied the planning process, but are also responsible for the house themselves. *Handwerkerhof Ottensen* was founded as an association to build a new commercial building on a derelict urban site with the specification of workshops and offices on several floors. The building was constructed with load-bearing walls, i.e. without columns, in order to generate a high degree of flexibility for later uses. One finding was that it is advisable to seek advice from outside project advisors and thus avoid conflicts in advance. The developers themselves are the current tenants. The participation of the *Mietshäuser Syndikat* in the Ltd. protects the crafts enterprises from the displacement pressure that makes it difficult for them to find affordable commercial space in Hamburg. Today, the cooperation within the Handwerkerhof leads to synergies in which complementary businesses process orders together and the merger promotes market presence. There is a communal kitchen in the building and some businesses share workshops and machines (see I 9).

The Mietshäuser Syndikat is an association of numerous self-managed house projects that withdraw (residential) real estate from the property and capital markets and thus make the rental arrangement independent of the market. This is achieved by making the individual house associations as well as the nationwide Ltd. of the syndicate equal shareholders of the respective Haus-Ltd., which makes the sale of the property impossible. The house associations commit themselves to a low rent rate, social goals and mutual support, e.g. through a solidarity contribution (cf. Mietshäuser Syndikat 2019).

Involving and informing local businesses and residents.

Private individuals can also initiate and develop centres of urban production.



Photo: UrbaneProduktion.Ruhr



City



District/Quarter



Real estate/Property

3.2.7 Prosumptive business models

Actors: Economic development/start-up promotion, owners and companies

Goal: Active linking of consumption and production to increase identification with products and thus demand

Many negative external effects of our consumer society exist because we, don't want to know about them' and they often take place far away from our everyday lives and in some cases we cannot know about them, describes Stephan Lessenich (cf. 2016: 67). Making production processes 'visible' is therefore a prerequisite for establishing sustainable production in the long term, creating an appreciation of products and developing more sufficiency-oriented consumption (cf. Stumpf 2018: 178).

Establish sustainable production and increase appreciation.

Producing companies supplement their business models with service offerings and vice versa.

Increased involvement of the customer in the production process.

Changing demand conditions, e.g. due to increasing individualisation, are met with new business models that are often oriented towards new technologies and digitalisation (cf. Ematinger 2018). On one hand, business models geared towards production are being expanded to include service offerings (cf. Welzbacher et al. 2015: 21); on the other hand, trading companies are also restructuring themselves, e.g. with „contract manufacturing of private labels [in which parts for an end product are produced for another manufacturer] until the production of the end products is taken over“ (Zentes 2012: 90). This opens up new stages of the value chain and the pure purpose of buying in the shop recedes into the background: shopping becomes an experience (cf. Pine/ Gilmore 2000). Also in order to hold their own next to online trade, companies are looking for new inspiring and open production sites and locations. They are also placing more emphasis on involving the customer in the production process, e.g. through co-production and prosumption (cf. Butzin/Meyer 2020). Identification with the product as well as with the place of production can thus be strengthened. Prosumptive business models can thus contribute to sensitisation (see p. 58) and acceptance of production (see p. 60).



Prosumption takes place mainly in the areas of energy and food supply, but also in the self-production of clothing, furniture and spare parts. It is favoured by the opening of makerspaces, where consumers can produce products for their own use. In the process, 'hybrid communities' can emerge in which an entrepreneurial production can be built up from the primary desire of self-production (cf. Brinks/Ibert 2015). Some manufactories also offer the possibility of producing individualised products.

Role model: district factory in Essen

What started as a neighbourhood project in a rent-free shop in the Eltingviertel in Essen developed into a concrete business model: production, workshops and renting out the workshop - in the middle of Essen's city centre (cf. Readymade UG n.d.). With the aim of being able to reuse the large amounts of bulky waste that accumulate in the city and are mostly thermally recycled, i.e. incinerated, founder Lena Halbedel and founder Florian Krohm launched the *Stadtteilmfabrik*. After more than a year of development in the rent-free shop, the first product was the Elting stool - a tripod made of scrap wood and produced completely and fairly in the Ruhr region without screws or other additives. The unique pieces are sold in the *Stadtteilmfabrik* shop and will also be distributed through regional partner shops in the future. In addition, there is more space at the new location in the city centre, where residents of the neighbourhood now also learn together how to design and produce new furniture independently. Workshops - thus prosumption - and renting out workplaces are currently the main focus in order to make better use of the new space in Essen's city centre. Individual workshops, for example for special events or company outings, are also offered. In addition, the *Stadtteilmfabrik* focuses on individually created offers for furnishing office and work spaces. The *Stadtteilmfabrik* works with companies such as *Haniel*, *Allbau*, *Vonovia*, but also with young start-ups such as Tagewerk, where workshops are arranged in carpentry workshops, for example. The company's slogan is: „Products that are 100% what you want, because you design them. Sustainable, urban, self-made“ (cf. Stadtteilmfabrik 2019).



Photos: Sally Plöger



City



District/Quarter



Real estate/Property

3.2.8 Funding programmes and financing options

Actors: Economic development/start-up promotion, urban planning, companies

Goal: Acquire start-up financing for entrepreneurs

Use funding to initiate developments.

The German federal states, the German federal government and the EU provide financial support to municipalities, municipal institutions and companies with numerous programmes for the sustainable design of urban infrastructure and the strengthening of the regional economic structure. This funding helps to initiate developments, as there is still a great need for research and development with regard to the realisation of emission-free and resource-efficient production in the urban environment. With regard to the goal of a circular economy, it is also important to develop new forward-looking technologies. ► Figure 23 provides an overview of current, selected funding programmes that municipalities and companies can use to support urban production

There are numerous often topic-specific **research and development funding programmes from the state, federal government and EU**, with which companies (and universities) can finance projects for two to three years, either proportionally or in full. One example is the *Central Innovation Programme for SMEs* (ZIM).

The *ERDF-funded project In|Die RegionRuhr*, which supports small and medium-sized production companies, is also available specifically for the Bochum, Dortmund and Hagen area. Since 01.09.2019, the now third funding phase has begun, so that the offer is available until at least 31.08.2022. One of the most important offers of *In|Die RegionRuhr* is the *InnoScheck.RUHR*, a 100% funded consulting voucher for digitalisation and innovation consulting.

SMEs in the local economy are often denied traditional business financing.

Especially small and medium-sized enterprises (SMEs) in the local economy are often denied the classical ways of business financing (bank loans) due to credit rationing (cf. Hartmann-Wendels et al. 2010) or ‚redlining‘. The term “redlining” is used in particular when a disadvantage occurs on the basis of clear characteristics, e.g. on the basis of the location in a structurally weak district or on the basis of the ethnicity of the borrower. Nevertheless, bank financing is the most frequently chosen type of financing, in which local and regional house banks play a major role (cf. Flögel et al. 2020). Other financing options for start-ups are shown in ► Figure 24. Different instruments are suitable depending on the project, plan and creditworthiness of the entrepreneur.

► Figure 23
Possible current funding measures
to kick-start urban production in
Germany

(Source: own representation)

Funding measures	Beneficiaries of the funding	Period of funding	Source
Joint task, Improvement of the regional economic structure	Companies, municipalities, public institutions	2014 – 2020	(cf. BMWI 2018a)
Climate protection initiative - Climate protection projects in the municipal environment (municipal guidelines)	Saving emissions, increasing of energy efficiency etc. for municipalities, companies, universities, public institutions, federations/associations	31.12.2022	(cf. BMWI 2019)
Smart Cities Model Projects. Grants for Urban development and digitalisation	Local authorities, associations of municipalities, forms of inter-municipal cooperation	probably possible again from 2020	(cf. KfW 2019a)
Grants for integrated neighbourhood concepts and redevelopment managers for neighbourhoods with regard to urban energy refurbishment	Local authorities and their legally dependent own undertakings		(cf. KfW 2019b)
Promotion of digital equipment in Inter-company vocational training centres (ÜBS) and competence centres	Educational institution, public institution, association/union	31.12.2021	(cf. BMWI 2018b)

Role model: Support programme for urban production

The state of Baden-Württemberg is providing 6.7 million euros to develop solutions for emission-free, waste-free, highly efficient and dynamic production (cf. PTKA 2018). This financial incentive is intended to enable the „re-integration of production and urban life“ (ibid.), which is especially relevant for high-density urban areas. With the help of digitalisation processes, real-time information about the value chains can help to avoid the production of faulty batches or surpluses (cf. Baden-Württemberg 2018).

In addition to EU, federal and state funding programmes, municipalities can also support start-ups or companies. In Bochum, there is a team of start-up advisors (cf. WEG Bochum 2019a) who are permanently available to answer questions. In addition, the business plan competition *Senkrechtstarter* has been running for eleven years with the special prize *Urbane Produktion* since 2017 including prize money (cf. WiFö Bochum 2019). Furthermore, in Bochum, Werk X offers a start-up grant for nine months including use of space (cf. WEG Bochum 2019b) and the technology centres offer discounted rents for start-ups (cf. WEG Bochum 2019c).



Photo: Björn Hickmann / Die Urbanisten e.V.



City



District/Quarter



Real estate/Property

3.2.9 Networks

Actors: Economic development (e.g. starter centres, impact hubs), Agency for Urban Production

Goal: Build social capital networks, share resources and knowledge

The added value of networks is often underestimated by companies.

Although the advantages of network structures for the local economy are numerous, the importance of functioning networks is often underestimated by companies (cf. Münch 2015). Networks provide „social capital“ (Jansen 2007: 189) and create a collective good character, whereby group solidarities can emerge, the ability to organise oneself is increased and trust in general social norms is developed. The advantages of networks for companies that relate to individual benefits are easier access to and exchange of information and both power in the sense of structural autonomy and social influence. „One’s own influence, however, is [even] higher when one is surrounded by influential partners“ (Jansen 2007: 190). In addition, networks have a high adaptability.

Networks as forms of cooperative collaboration.

For urban production enterprises, networks offer cooperative forms of collaboration instead of a competitive price mechanism on markets. In addition to economic exchange relationships, other types of relationships can also exist between companies (cf. Wald/Jansen 2007: 93). New local value chains are thus established through local proximity. Strong networks can be certain industry clusters or advertising associations that create new offers on their own and contribute to the upgrading of neighbourhoods (see *Mobilising Owners and Neighbourhoods* p. 78).

In order to build networks and to place and market products, it is helpful for the business development agency to conduct specialised further and advanced training formats. Mentoring programmes are also conceivable, which offer established companies the opportunity to pass on their knowledge to start-ups and to accompany them. The latter, in turn, can lead to opportunities to share premises or machinery. Long-established networks and established structures can make access difficult for new businesses and have a deterrent or exclusionary effect. By networking old-established companies with young women founders, such structures and networks can be opened up, which in turn leads to new synergies.

Open networks for different groups in order to use synergies.

Companies in the migrant economy are particularly relevant in structurally weak neighbourhoods (cf. Brandt et al. 2019: 53), as they contribute to relieving the labour market and stabilising neighbourhoods (cf. Aver 2013: 394). At present, networks from informal family structures or communities of origin are primarily relevant for start-ups in the field of the ethnic economy (cf. David 2017: 8), as measures by economic development agencies often do not reach migrant



businesses (cf. Brandt et al. 2019: 53). This also requires an exchange between the municipal facilities and institutions in order to know about the respective formats and offers and to be able to forward interested parties to the relevant offices or arrange contacts. This can already happen, for example, in the citizens' office or the job centre.

Role model: Impact Hub Ruhr

„Building Communities for Impact“ is the slogan of the global *Impact Hub* network: a business network that has seen itself as a driver for sustainable change in society and business since 2005 and is active in over 100 locations in over 55 countries, with 16,500 members and 1,200 doers (cf. Impact Hub GmbH 2019). One of these places was established in 2017 in Essen at the Haus der Technik by three founders and has since grown steadily. From a relatively small co-working space, the *Impact Hub Ruhr* has developed into a lively community centre and innovation lab. In addition to access to (creative) spaces and an open community, the *Impact Hub Ruhr* offers other resources such as connections and exchange with potential partners and networks, knowledge transfer and education in the fields of social innovation and social entrepreneurship, talent matching and access to investment to be able to implement (business) ideas. Above all, networks between established companies to start-ups and companies in the process of being established should be built. Start-ups in the manufacturing sector thus have a local contact point and can take advantage of numerous offers to improve their own know-how and make contacts. Likewise, established companies can take advantage of the *Impact Hub Ruhr's* offers and services in the areas of innovation, sustainability and the future of work. The global *Impact Hub* Network recommends establishing an Impact Hub in cities that have a medium to high GDP/capita, a positive population development and a focus on sustainability.

For businesses in the migrant economy, networks from informal family structures or communities of origin are of great value.



Photos: ImpactHub Ruhr

3.3 Productive environment

3.3.1 Mobilisation of owners and neighbourhood

Actors: Urban planning/ neighbourhood management, civil society

Goal: Activation of citizens for an active neighbourhood and development of innovative projects

Joint actions to exchange, get to know each other and grow together.

The active shaping of the neighbourhood by its residents is a key to strengthening neighbourhoods and thereby creating lively and liveable neighbourhoods. Neighbourhoods with a strong citizenry are also able to organise larger projects such as a neighbourhood festival. Joint activities enable residents to exchange ideas, get to know each other and grow together. This in turn strengthens **identification with the district** and can promote social participation. In the sense of urban production, local business networks (see networks p.76) or owners' associations/cooperatives can be created that, for example, jointly agree on a rent reduction or plan local actions to make existing vacancies usable again - and above all for urban producers.

Commitment needs meeting places.

Many people, however, do not know to what extent they can contribute to the shaping of their living environment, have been disappointed by bureaucratic hurdles or have found too few or no comrades-in-arms. In order to enable engagement (see sensitisation p. 58), cities need places where people can meet, whether in the pub, in the park, in a temporarily used shop. There, new ideas can emerge and be developed together. People are thus encouraged to get to know their neighbours or to take the step into self-employment. Municipal actors should be easy to reach for citizen-led initiatives, provide them with support and advice, and offer low-threshold services to activate city residents. Neighbourhood-based support programmes such as a neighbourhood disposition fund can also provide impulses for engagement in the neighbourhood.



City



District/Quarter



Real estate/Property

Role model: Ölberg eG in Wuppertal

The Ölberg district of Wuppertal is a very dense neighbourhood close to the city centre, which for a long time was characterised by a poor image, a high vacancy rate and low purchasing power. This situation prompted the local population in particular to found the *Ölberg eG*. The registered cooperative has the main objective of stabilising the district socially and economically and making it fit for the future. Due to favourable rents, manufactures have been able to settle here, activating vacancies. *Ölberg eG* emerged from the registered association *Unternehmer und Unternehmerinnen für die Nordstadt* (Entrepreneurs for the Nordstadt), whose active core consists of local residents and tradespeople. In addition, the biennial Ölbergfest is organised jointly (cf. Brandt et al. 2017a: 132 ff.).



Photos: UrbaneProduktion.Ruhr



City



District/Quarter



Real estate/Property

3.3.2 Cooperation with the housing industry

Actors: Urban planning/Quarter management

Goal: Involve housing companies as property owners in order to promote a mix of uses in their portfolios.

Increasing attractiveness through urban production.

Use the commitment of the housing companies as potential.

The concept of urban production offers numerous potentials with regard to counteracting commercial vacancies and increasing the attractiveness of the living and working environment (see chapter 2.2). Appropriate measures are needed to support the settlement process of manufacturing companies, but also cultural and creative workers. This applies in particular to neighbourhoods that initially appear unattractive from an urban development perspective because, for example, redevelopment work has not been carried out or the image is negative. The target groups mentioned can, for example, be provided with rooms temporarily at a reduced price or free of charge. In this context, cooperation between urban planning or neighbourhood managers and housing companies is conceivable. It is evident that the commitment of the housing industry to neighbourhood development goes beyond its core services and also focuses on city-wide effects (cf. Schaefer et al. 2014: 42). The importance of the non-monetary benefits that come from the companies, for example in the form of social exchange and participation, should not be underestimated.



Photo: UrbaneProduktion.Ruhr

Role model: Residence Support Programme

A cooperative collaboration between the city and housing companies has taken place in Essen's Eltingviertel. For a long time, the Eltingviertel was characterised by a poor condition of the buildings as well as the traffic and open spaces, an inconsistent urban appearance, vacancies and gaps in local supply. In order to initiate an upgrading process, the housing company *Vonovia*, which owns a large part of the housing stock, the city of Essen and *Innovation City Management GmbH* joined forces (cf. Schymiczek 2017). In 2015, Vonovia, together with the cultural office of the city of Essen, launched the residency funding programme for creative start-ups and artists, the *Creative Lab*. One prerequisite was that the participants be active in the neighbourhood as well as the city and convey their work, for example, in the form of workshops or studio talks. Five people from the fields of fashion, design, photography, digital media, painting, sculpture, drawing and video were given the so-called *Atelier VierViertel*, a previously vacant shop, rent-free for one year. In particular, goods from local resources were produced in the studio. In addition, a pop-up gallery with free exhibition space for artists was opened and a small self-managed urban garden was created in the neighbourhood. This example illustrates that housing companies with extensive real estate portfolios can be a relevant actor in neighbourhood development, and that neighbourhood-based funding programmes can support positive development processes and facilitate the settlement of creative and producing businesses (cf. Schonlau et al. 2019: 296).



Photos: UrbaneProduktion.Ruhr



City



District/Quarter



Real estate/Property

3.3.3 Urban logistics

Actors: Urban planning, economic development

Goal: Development of suitable logistics concepts for production in urban areas

Ongoing urbanisation, growth rates in e-commerce and a corresponding increase in courier, express and parcel (CEP) services make it clear that, in addition to individual mobility, supply and delivery transport will also increase (cf. Bundesvereinigung Logistik 2018: 14). The increasing individualisation in manufacturing processes and complex value creation networks mean that transport volumes are decreasing while the number of routes is increasing (cf. Wagner-Endres et al. 2018: 21). With regard to increasing production in urban areas, new transport concepts are necessary in order to make delivery traffic sustainable and trouble-free.

Decreasing transport volumes and increasing number of routes.

The results of the survey of urban manufactories conducted as part of the research project *UrbaneProduktion.Ruhr* also show (see p. 25) that urban production is particularly dependent on sustainable mobility and logistics infrastructures in order to achieve sustainability effects. The so-called 'last mile' is of particular importance in ensuring sustainable delivery traffic. Micro-consolidation centres, so-called *Mirco-hubs*, are one possibility. They serve as interfaces between truck traffic and cargo bikes, which take over the last few metres to the customer (cf. Arndt/Klein 2018: 7). New logistics concepts are able to reduce traffic and the associated emissions and thus support the development of urban production structures. Depending on the needs of companies for the delivery and unloading of goods, the possibility of loading and unloading zones in urban areas must be given special consideration when choosing a location in order to avoid conflicts of use, e.g. due to parked-up cycle paths.

The last mile in particular is important for compatible delivery traffic.

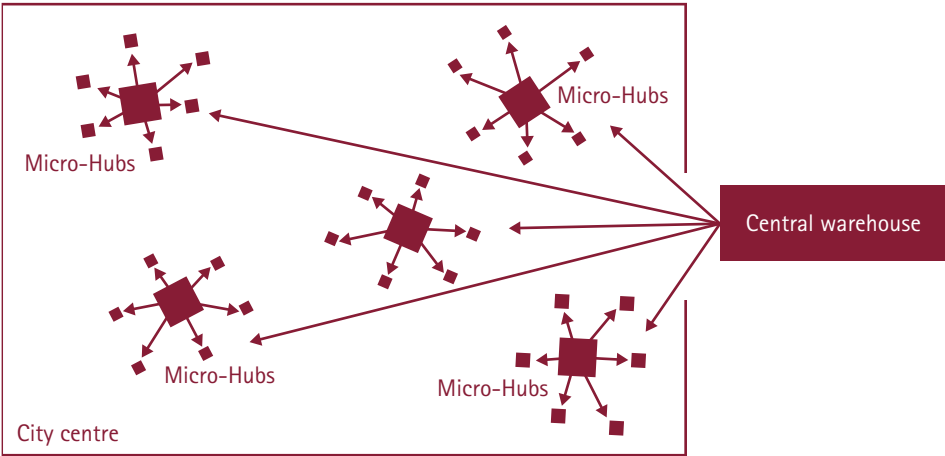
Due to the large number of factors that have to be considered in the development of an inner-city logistics concept, the development of such a strategy can only take place through the participation of all stakeholders. Local businesses, logistics companies, residents, economic developers and the municipal institutions should network for this purpose and find suitable solutions. Small steps and experiments are also important and can be initiated and accompanied by transport scientists.

Role model: Last-Mile-Logistics Hamburg - inner-city delivery logistics

In the study ‚Last-Mile-Logistics Hamburg‘ commissioned by the Ministry of Economic Affairs, Transport and Innovation of the Free and Hanseatic City of Hamburg, various micro-hub concepts were tested and examined together with the CEP logistics company UPS. In addition to appropriate logistics real estate, a corresponding infrastructure for electric mobility, charging stations for electric vehicles and alternative delivery locations are required (cf. Ninnemann et al. 2017: 105, 134, 144). Vacant retail properties, for example, could be considered for this.



Photos: UrbaneProduktion.Ruhr



► Figure 25
Principle of goods distribution with micro-hubs

(Source: own representation according to Ninnemann et al. 2017: 34)



City



District/Quarter



Real estate/Property

3.3.4 Agency for Urban Production

Actors: Economic development, urban planning

Goal: Real estate and land brokerage, support for company settlements up to active intervention in the real estate market.

The practical implementation of this measure can take place in different intensities with regard to the use of resources and personnel. It would be relatively uncomplicated to market and broker premises and spaces for urban production as an additional task with the existing staff of the Economic Development Department. This presupposes that a city-wide overview of the existing supply (including vacant shop premises, halls and special properties, underused properties, gaps between buildings, brownfield sites) is available (see *commercial vacancy register* p. 48). In this context, direct contact with property and space owners is also beneficial in order to be able to act as an intermediary for those seeking space.

Agency for Urban Production at the interface between urban planning and economic development.

The culmination and most stringent form of implementation of this measure can be seen in the establishment of a new organisation with its own staff, which is located as an interface between urban planning and economic development. This organisation can actively carry out tasks such as purchasing or renting vacant and derelict buildings (parts) and land and rent them out cheaply to start-ups/test-outs in the field of material production that are in the start-up/experimentation phase. Depending on the condition of the real estate, repairs are also part of the tasks. Business-related services, such as tax advice, PR and discounted purchases of goods, can also be offered.

Subsidies can be used for the start-up financing of the agency and the sponsorship can be taken over in the medium term by a district cooperative that finances the activities from civic contributions. The motivation to participate financially results from an expected increase in land values as well as from discounted access to the work spaces produced by the agency or its products. In case of an uncertain economic development of a start-up/test-out, individual spaces could be marketed decidedly as interim use.

Role model: Haushalten e.V. & district cooperatives

In Leipzig, the HausHalten e. V. association was founded in 2004, which sees vacancies in unattractive locations and creative space-seekers as an opportunity and brings owners together with users. Endangered old buildings in locations that are important for urban development are converted from vacant to new uses and renovated in cooperation with crafts enterprises from the neighbourhood. In the process, long-term unemployed young people are called upon to carry out smaller jobs and receive professional guidance within the framework of subsidised qualification measures (cf. HausHalten e. V. o. J.).

The district cooperatives *Inwest eG* in Dortmund and *Ölberg eG* in Wuppertal also combine an intervention in the commercial property market with the goals of community-based urban development. For the willingness of the local residents and tradespeople as well as the owners, it is important to stage the foundation in an appropriately cooperative way and to emphasise the relevance for the district. The founding of a district cooperative with an associated agency can therefore only take place on the basis of a clearly articulated demand for cheap 'test-out' spaces for urban production, which is why the formation of a user group in advance is of decisive importance.

,Test-Out' spaces for Urban Production.

4

Process towards the productive city

Return to the production economy.

A joint municipal economic strategy is of great importance.

The productive city as a response to future challenges.

Different municipal starting situations require different approaches.

Due to the increasing competition between locations, business promotion and location development are developing further and further from a settlement promotion policy to a strategic economic development. In the process, certain thematic trends are becoming apparent: After the development of the creative industries and, most recently, all hopes were placed on digital start-up companies, the label 'urban production' is now showing a return to the production economy. However, we advocate that the topic should not be seen as a substitute for, but rather as a complement to, the previously pursued tertiarisation and that it should be thought of in an integrated way in local or regional value chains that encompass both the creative economy and personal services, digital start-up companies, as well as the production economy. Due to the spatial factors that have thus become more significant, a thematic and interdepartmental integration into a joint municipal economic strategy is necessary: Therefore, urban development must open up much more strongly to economic topics and, conversely, economic development to topics of economic neighbourhood development.

The goal is clear: productive and at the same time sustainable urban development that is forward-looking and does not disregard social and economic perspectives. It is seen as an answer to current and future challenges, including the finite nature of global resources, the responsible use of our environment and the creation of liveable cities. In order not to leave municipalities alone in the question of 'how?', the research project *UrbaneProduktion.Ruhr* has taken on the task of presenting practice-oriented measures (and tools) for the path to a productive city in this handbook. There is no one silver bullet. The productive city is to be understood as a process that can be shaped in many ways.

Depending on the initial municipal situation, different approaches are possible. For example, growing cities are often faced with the challenge of displacing manufacturing industry with more profitable uses such as housing. Appropriate measures, including planning law measures, must be taken and development concepts drawn up in order to preserve and strengthen industry. In structurally weak (inner) cities and district centres, urban production can act as a building block for revitalisation. Here, the reactivation of vacant shop premises can take place by means of presumptive business models, network offers and other incubators. All approaches require the joint, committed cooperation of various actors.

Despite these different approaches, a holistic consideration in municipal urban and economic development is a basic prerequisite for strengthening urban production. This means that urban production must be strategically anchored in municipal development strategies and plans (see chapter 3.1), concrete and specific support for manufacturing companies and start-ups must be provided (see chapter 3.2) and municipalities must qualify the spatial environment with regard to the requirements of urban production (see chapter 3.3).

Holistic consideration of urban production in municipal urban and economic development.

Even though the chronological order of the measures can be flexibly arranged, we would like to repeatedly emphasise that a cross-stakeholder commitment and a city-wide strategy based on it form the basis for the implementation of the measures. In this process, urban and economic development must not be perceived as opposing developments or even competitors of municipal development. Rather, their initiatives and measures must appear as mutually dependent and hand-in-hand basic components of the city. If this cooperative collaboration succeeds, a significant dynamic can be expected. Strengthening urban production is thus a joint task that must be approached holistically across different spatial levels, from the city as a whole to the neighbourhood to the individual property.

Urban and economic development as mutually dependent basic components of the city.

There is no doubt that in addition to urban production, other urgent developments and topics are on the agendas of municipalities. This is precisely why it is not about a one-sided focus on urban production, but about a new, meaningful linkage of all relevant fields of action. Urban production should be considered together with developments such as cradle-to-cradle, alternative energy and mobility concepts, concepts for liveable cities and other current fields of action of sustainable transformation in order to actively use synergies.

Meaningful linking of relevant fields of action.

Awareness and commitment to the manufacturing sector are crucial for success. Last but not least, it depends on political support, without which long-term developments are difficult or impossible to initiate and implement. The courage to take active and visionary action is an important driver, as is an open and unbiased culture of discussion. Likewise, an inter-communal exchange of experiences as well as cooperation across communal borders is important in order to expand the currently limited empirical experiences in order to develop further measures to strengthen urban production enterprises based on them.

The way is the goal
—
**productive cities are
forward-looking cities.**

5

Inspiration for Urban Production

5.1 Urban industry

5.1.1 Wittenstein bastian GmbH



Wittenstein bastian GmbH

Product: Metal products
(e.g. gear wheels)

Foundation: 1890

Employees: ca. 110

Address: Lise-Meitner Straße
10
70736 Fellbach

Site Description:

City factory in new housing estate
with commercial part

More information at:

<https://alpha.wittenstein.de/de-de/unternehmen/>

WITTENSTEIN bastian is a reference project for sustainable, urban factory construction. The company has its origins with the founding of the predecessor company in Stuttgart in 1906. Since 1978, it has been based in nearby Fellbach. The new factory building of the metal company was also built in Fellbach in 2011. A combination of technical and structural measures makes low-emission production possible, which is compatible with an urban location and the direct proximity to residential development and office buildings (cf. I 1).

The urban new factory building

The main criterion for choosing the company's new location was the good accessibility (similar commuting routes as to the previous location) and existing infrastructure (e.g. S-Bahn connection, local supply). The factory is a hybrid building that houses production, loading and unloading, production-related offices, administration and energy generation by means of photovoltaics. Modern building and machine technology enable low resource consumption and environmentally friendly production methods. For example, about one third of the energy used is produced on site by heat recovery, the natural gas-powered combined heat and power plant and the photovoltaic system. A rainwater cistern supplies water for the sanitary facilities (cf. *ibid.*).

The factory and the neighbourhood

At the beginning of construction, the neighbourhood expressed fears that the production facility would cause nuisances, especially noise pollution. Therefore, the company set emission limits and defined conditions, e.g. that the exhaust air would not be directed towards residential areas. Furthermore, the entire delivery area was enclosed so that delivery and pick-up could take place inside the building. In addition, a noise barrier was built to protect the residential area. When designing the building and the site, attention was paid to a lot of green space and an open and at the same time visually restrained construction method. Stakeholders, especially local residents, were informed early on and involved, e.g. through round tables. The success of the multifaceted measures can be seen, among other things, in the fact that another factory building based on this model is planned for the expansion area. The settlement was accompanied by the Economic Development Agency as well as the Stuttgart Economic Region and the *Fraunhofer Institute for Industrial Engineering (IAO)*. The latter two primarily provided advisory and scientific support. *WITTENSTEIN bastian* is a practical example of the Morgenstadt, an initiative of eleven Fraunhofer Institutes for research into the sustainable, liveable and transformable city of tomorrow (cf. *ibid.*).

Conclusion

The environmentally compatible and low-emission new factory building of *WIT-TENSTEIN bastian GmbH* is a successful example that shows that a low-conflict mix between production and residential functions is also possible on a larger scale. The early involvement of citizens at eye level was able to prevent scepticism towards the manufacturing industry and the associated conflicts.



Photos: Institute for Work and Technology

5.1.2 Joseph Manner & Comp AG



Joseph Manner & Comp AG

Product: Confectio
Foundation: 1890
Employees: 400
Address: Wilhelminenstraße 6
1170 Vienna

Site Description:

Storey factory in Wilhelminian quarter

More information at:

<http://www.manner.com/de>



Photos: Institute for Work and Technology

Die *Manner AG* founded in 1890 - is a traditional Viennese company. The converted factory in Vienna's 17th district of Ottakring, is an example of vertical urban production, which enables space-saving, low-emission and environmentally compatible manufacturing. Ottakring is a Wilhelminian and working-class district in which residential use dominates, although production, trade and gastronomy play an equally important role.

In the course of the 20th century, *Manner*, like many companies, moved a large part of its production from Vienna to peripheral locations. In 2011, *Manner AG* decided to close the production site in Upper Austria in favour of the sites in Wolkersdorf and Vienna. The decision in favour of Vienna was based on the company's strong connection with the city (St. Stephen's Cathedral in the logo) and the advantages of urban production (including short distances for employees). The decision for the two locations was accompanied by the decision to fundamentally modernise and expand the factory in Vienna (cf. I 3).

Modernisation for vertical production

In redesigning the factory, *Manner* took an example from the large corporation Henkel: the new production structure is not designed as classic line production, but vertically, i.e. from top to bottom. Each floor has its own function, with no pallets being moved between floors, only the products. This makes the workflow more efficient and reduces space consumption by 30 %. To further save space in the limited urban area, for example, an underground car park and a multi-storey car park were built to replace the surface car park. The waste heat that is now generated during production in the 'oven floor' can be used efficiently: in the factory for further production processes, converted by a heat exchanger to cool the production facility or fed into the district heating network for the surrounding residential buildings (cf. *ibid.*).

The factory and the neighbourhood

In the design of the factory and its conversion, great attention was paid to compatibility with the neighbourhood, especially with regard to noise emissions. For example, the façade of the factory serves as sound insulation and the ventilation systems are all directed inwards. Before and during the reconstruction, *Manner* intensively informed the population and issued emergency numbers for possible complaints. However, it became apparent that due to the long tradition of the *Manner* factory in Ottakring, many residents were accustomed to urban production and perceived possible disruptive factors, e.g. delivery traffic, as little of a problem. Direct advantages for the neighbourhood result from the low commuter volume, as many employees

come to work by public transport or bicycle. In addition, residents can rent free parking spaces on the company premises, which has made it possible to reduce the number of parking spaces in the street and to green the street. The factory, with more than 100 jobs, also offers employment potential in the city (cf. *ibid.*).

Conclusion

Manner AG shows that production can function well and be modernised in the city and in the immediate residential environment. The conversion of production to vertical production methods and centralisation in Vienna mean not only efficiency gains and ecological advantages, but also image gains for the company.



Photos: Institute for Work and Technology

In vertical production, the processing steps are not arranged one after the other in the horizontal plane, but vertically in levels one below the other. Thus, the production process in multi-storey factories usually begins on the top level, with the materials being transported down and processed there until they can be removed on the ground floor. In addition to factories, smaller businesses can also be located in multi-storey buildings, for example manufactories or crafts in centres of urban production (see p. 68). This form of production can be integrated well into cities due to the low land consumption, but usually requires more elaborate architectural solutions in view of the statics (cf. Haselsteiner et al. 2019).

5.2 Urban agriculture

5.2.1 Hut & Stiel



Hut & Stiel

Product: Oyster mushrooms
Foundation: 2015
Employees: approx. 6
Address: Naufahrtweg 14a
1220 Vienna

Site Description:

ex: Cellar mushroom cultivation in metropolitan neighbourhood
today: A cellar in the surrounding area for growing, maturing and office in the suburban area on the small city farm, salesroom / showroom in the city centre

More information at:

<http://www.hutundstiel.at/>

Hut & Stiel is a food business specialising in regional circular economy. The sourcing of resources for breeding as well as the sales market for the products are concentrated in Vienna. The goals of sustainable business management are:

- Conserve resources,
- produce a good, healthy food,
- demonstrate that supposed waste can be reused and
- move something in people's minds and motivate them to become active themselves (cf. I 2).

From waste to resource – the circular economy in mushroom cultivation

The coffee grounds, a waste product from Viennese restaurants and offices, are mixed with mushroom mycelium, coffee husks and a little lime. The oyster mushrooms thrive in this nutrient medium and are ready for harvesting after a few weeks. The product is then sold to the Viennese food trade, catering businesses or canteens, and mushrooms that are unsaleable due to visual defects are processed by other food businesses, e.g. into pesto. Once the coffee substrate for mushroom cultivation has been used up, it is composted and recycled as soil (cf. *ibid.*).

Location mixed area

Besides making it easier to market the product, the city with its many dark walls is an ideal location for mushroom growing. The basement of a residential building where *Hut & Stiel* was founded in 2015 had an area of approx. 280 sqm and was located in a Wilhelminian-style perimeter block development in a mixed-use area. The advantages of the location were the low investment costs and the central location for distribution by cargo bike.

Due to a lack of space, a former wine cellar with approx. 350 sqm was already rented in 2017 in Klosterneuburg, 15 km away, to grow the mushrooms, while the existing location was initially retained as a distribution centre. Since the end of 2018, *Hut & Stiel* has rented a further 150 sqm at the community farm *Die kleine Stadtfarm* in Vienna. The founding location has since been abandoned. Coffee grounds are now collected there and the mushroom bags are prepared to be brought to Klosterneuburg for maturing. From October to December 2019, *Hut & Stiel* also used a shop with a café provided by the 9th district in exchange for incidental costs to test the extent to which an additional central distribution location makes sense for the company in the long term (cf. I 7).

Support structures

Hut & Stiel has been producing mushrooms in Vienna since May 2015 in the legal form of a civil law partnership. In 2017, a limited liability company was also founded for legal and tax reasons. Initially, only little institutional support could be relied on, as there are no permits and reference examples for the project so far. The foundation costs were borne primarily with own funds. The search for a location was protracted, as the innovative project of the students at the time met with a lack of understanding and doubts on the part of the landlords. The company has won several prizes so far, which made it possible to refinance part of the start-up costs (cf. I 2; I 7).

Conclusion

Hut & Stiel's mushroom cultivation generates a new value chain in Vienna and thus contributes to the regional circular economy. Both the production and the distribution of oyster mushrooms are as resource-friendly as possible, not least due to the lived idea of the city of short distances.



Photos: Hut & Stiel and UrbaneProduktion.Ruhr

5.2.2 Ferme Abattoir



Ferme Abattoir

Products: Fish, cherry tomatoes and herbs
Foundation: 2018
Employees: 5
Address: Foodmet, Site Abattoir,
Quai de l'industrie 168
Rue Ropsy-Chaudron 24
1070 Brussels

Site Description:

Roof of a market hall (former slaughterhouse)

More information at:

www.bigh.farm



Photo: BIGH Holding SCA

The aquaponics farm *Ferme Abattoir* is the first farm of the *Building Integrated Greenhouses* (BIGH Holding SCA) and has been located on the market hall roof of the Abattoir complex, a traditional slaughterhouse in Brussels-Anderlecht, since 2018. The site is surrounded by a canal and a mixed-use residential area.

Fish and vegetables from the roof - Aquaponics as professional urban agriculture

Aquaponics systems combine fish farming and vegetable-growing in a coherent system. The fish are raised in tanks in whose water nutrients are accumulated by the excretions of the animals. These are then fed to the cultivated plants as fertiliser, and the filtered water can be returned to the fish as 'fresh water'. The plants are grown in hydroponic facilities, in greenhouses without soil or in substrate. For example, in the *Ferme Abattoir*, tomatoes are grown on a mass of compost and other natural materials (cf. BIGH 2019).

The *Ferme Abattoir* has been in operation since 2018. Greenhouses, a large outdoor garden and the fish farm are located on approximately 4,000 square metres of roof space. The company *BIGH* was founded in 2015 and aims to operate urban farms that are largely in line with the principle of the circular economy and zero waste and are thought of and planned symbiotically with the surrounding buildings (e.g. by using waste heat). Independent of subsidies and grants, *BIGH* is financed by private as well as public investors, first and foremost by the architecture firm *Lateral Thinking Factory*, which specialises in the circular economy (cf. *ibid.*).

Ecological and social impact in the city

The position of the farm on the roof of a market hall has several decisive advantages: On the one hand, the space is used for entrepreneurial purposes in the sense of redensification, and on the other hand, it can also be seen as a green space due to the large outdoor garden and is a retreat for insects and other animals. On the other hand, the use of the roof serves as insulation and the waste heat from the refrigerators in the market hall as well as in the slaughterhouse flows into the temperature control of the greenhouses through heat pumps, which enables year-round production.

Through *Ferme Abattoir*, five full-time equivalent jobs have been created so far, which have been given to people from the neighbourhood. The farm cooperates with two local social enterprises that offer vocational training. In addition, *BIGH* works as a lighthouse project for a better perception and appreciation of the stigmatised district of Anderlecht (cf. *ibid.*).

Conclusion

The *Ferme Abattoir* shows that professional agriculture is also possible in the middle of cities and can benefit from the proximity to other uses. It produces about 35 tonnes of fish, 15 tonnes of tomatoes, 120,000 trays of seedlings such as cress and 2,700 pots of herbs every week. These are sold through supermarkets and grocery shops or to restaurants and catering services.

BIGH is looking for more space (over 2,500 sqm each), partners and investors in the major cities of Europe. The aim is to establish a network of urban farms in Europe to promote the principle of the circular economy.



Photos: BIGH Holding SCA

5.3 Urban manufacture

5.3.1 Hafenkäserei



Hafenkäserei

Product: Käse
Foundation: 2014
Employees: ca. 50
Address: Am Mittelhafen 20
48155 Münster

Site Description:

Münsteraner Hafen, urbanes
Szenequartier

More information at:

<https://hafenkaeserei.de> und
<https://www.youtube.com/watch?v=Am2HY9j2nrc&t=2s>



Foto: Hafenkäserei / Dario Ronge

Ann-Paulin Söbbeke continues the family tradition of cheese production in the fourth generation with the founding of the organic show dairy in 2014. Based in Münster's harbour district, the *Hafenkäserei* produces a variety of cheese specialities with heart and handwork.

Urbanity as a location requirement

The founder of the show dairy had the dream of continuing the family tradition of cheese making, but not in the countryside, but in the middle of the city. The city of Münster was enthusiastic about this idea and supported the founder in her project. She received financial support from her family.

The cheese dairy is located on the south side of the harbour, the so-called *B-Side*. On the opposite side, numerous cafés, restaurants and trendy clubs bustle between the office buildings on Kreativkai. For some years now, the harbour area has been developing from a freight transshipment point into a lively urban quarter. The central urban location is an essential building block for the concept of the show dairy (cf. I 4).

Transparent production – transparency as a guiding principle

Not only cheese is produced in the show dairy, but also knowledge. For example, there are regular tours of the cheese dairy to give people an understanding of the production process and to show them where the products we eat every day actually come from. According to founder Ann-Paulin Söbbeke, transparency towards customers is becoming increasingly important. Due to the organic and responsible production, the products offered are inevitably somewhat more expensive than discount goods. Building a certain identity or story around the product is therefore of great importance. The special location in the form of the harbour in an urban environment contributes to this and is a great location advantage due to the proximity to the customer. In addition to the production area, the *Hafenkäserei* also includes a catering area that can be booked for events, among other things. The cheese dairy cooperates with a local organic craft beer brewery from Münster and thus supports local value-added relationships. Like other industries, the cheese dairy is feeling the lack of skilled workers. There are now only four vocational schools in Germany for the training profession of dairy technologist, which makes the search for qualified junior staff more difficult. For the future, the cheese dairy aims to train apprentices itself (cf. *ibid.*).

Conclusion

The *Hafenkäserei* in Münster shows that, depending on the business model, proximity to customers can be one of the decisive factors for success. In the context of the increasingly important transparency in production, a location in a central urban environment offers the opportunity to let the customer participate in the production process. This can create a certain identification with the products and provide direct feedback, which are important determinants for customer loyalty. The increasing popularity of local products shows that business models such as that of the *Hafenkäserei* are forward-looking.



Photos: Hafenkäserei / Dario Ronge



Laserkatze

Products: Laser cutting and engraving of wedding stationery, wall decorations, architectural models, influencer boxes etc.

Foundation: 2016

Employees: 1,5 VZÄ

Address: Thomashofstraße 15
52070 Aachen

Site Description:

Formerly in a shop in the centre of Aachen, now in a production hall in the backyard of a mixed industrial area near the centre in Aachen-Nord.

More information at:

<https://laserkatze.de/>



Foto: Laserkatze

5.3.2 Laserkatze

Lasercutmanufaktur *Laserkatze* was founded in 2016 by the brother and sister team Sophy and Henric Stönnner in Aachen. After producing for the first three years in a small 40 sqm shop in Aachen's Frankenbergviertel, which is considered Aachen's creative quarter, the company was able to expand in March 2019 and is now located in a production hall in a mixed industrial area in Aachen's Nordviertel - a heterogeneous district close to the city centre that has been supported by the *Social City* programme since 2009 (cf. I 5; Stadt Aachen o. J.).

Lasercutting as a modern manufacturing process

The manufacturing process of laser cutting, which originally came from industry, offers the possibility of producing a variety of products from a wide range of materials. With the help of a CO₂ laser cutter, Laserkatze cuts and engraves paper, cardboard, wood, acrylic glass, felt, cork and sometimes even slate - without noise and largely emission-free thanks to a three-stage filter system. Laser cutters require hardly any set-up time and are very flexible: no tools need to be changed for different materials, they can be reconfigured with just a few clicks. The complexity of a motif is also irrelevant for the cutter (cf. I 5).

In addition to design guidance and development as well as already finished design items, *Laserkatze* also offers 'Laser as a Service', i.e. designs created by the customer are cut into a specific material. The products range from wedding stationery, wall decorations and architectural models to 'influencer boxes' or menus. The clientele includes not only private individuals but also numerous business customers (cf. *ibid.*).

Networks as a success factor

A central component of *Laserkatze's* success was and is the central location and the visibility of the shop in addition to existing support structures, such as *FabLab Aachen*, which helped the brother and sister to found the company. Local start-up networks around the *digitalHUB Aachen* and networks in the arts and culture sector also provide new impetus. In addition to an exchange about potential challenges for start-ups, networking with actors from different sectors not only provided inspiration, but also collaboration. Participation in competitions and projects in the Aachen area promoted knowledge and know-how transfers and at the same time led to a wider reach for the company (cf. *ibid.*).

Conclusion

The example of the *Laserkatze* shows that urban production is possible in a small space in the middle of the city with the help of modern production methods such as laser cutting. In addition, the production process offers enormous flexibility and is economically viable. At the same time, the example shows how important knowledge transfer and already existing local networks are for start-ups in general and perhaps especially in the field of technology and crafts.



Photos: Laserkatze

5.4 Open workshop

The #Rosenwerk



Das #Rosenwerk

Products: e.g. repair café, open workshops for wood, textiles, printing, etc.

Foundation: 2015

Employees: 2,5 VZÄ

Address: Jagdweg 1-3
01159 Dresden

Site Description: In a commercial area in Rosenstraße - nestled between Dresden Mitte, Löbtau, Friedrichstadt and Wilsdruffer Vorstadt.

More information at:

<https://konglomerat.org/>



Foto: #Rosenwerk

The #Rosenwerk is a 7,000 square metre industrial complex and cultural space in an industrial area near Dresden city centre, which houses a community workshop run by *Konglomerat e. V.*. According to the mapping, the industrial area in Rosenstraße is located in the Wilsdruffer Vorstadt, but is also assigned to the district of Löbtau or the district of Friedrichsstadt. Thus, the location of the #Rosenwerk can also be described as an „urban blind spot“ (cf. I 10).

Self-efficacy as a principle and do-it-yourself culture at Konglomerat e. V.

The association *Konglomerat e. V.* has existed since 2012 and sees itself as a network and collective of various institutions and makers. The purpose of the non-profit association is to provide organisational and technical support for craft, cultural and social projects from civil society. It aims to promote knowledge transfer and to translate this knowledge into action, which is the common goal of the community workshops. In addition, the association deals with the topics of urban and spatial development, community building, sustainable management and environmental education (cf. *Konglomerat e. V. o. J. a.*).

Since 2015, the association has been based in the #Rosenwerk industrial complex. The vision of the association - a cooperative society that tackles the self-inflicted problems of our society with local and transdisciplinary approaches - is to be tried out and implemented there. The special principle of *Konglomerat e. V.* is self-efficacy, with which the (action) awareness for a climate-friendly and liveable everyday life is to be sharpened through active do-it-yourself (cf. *ibid.*).

The do-it-yourself centre in the #Rosenwerk

Together with other partners, *Konglomerat e. V.* has created a do-it-yourself centre in Dresden at the #Rosenwerk on around 600 sqm. The core of the Selberrmachszentrale is the production and workshop infrastructure provided by the projects *Werk.Stadt.Laden* and *FabLabDD*, both part of *Konglomerat e. V.* (cf. Just 2015).

In the DIY centre there are open workshops for a total of twelve work areas: Textiles, 3D printing, CNC milling, laser cutting, metal and mechanical engineering, wood, plastic recycling and processing, screen printing, digital printing, photo studio and analogue development, electronics as well as a material mediation. Interested parties can implement their own projects there for a small contribution (► Figure 26) (cf. *Konglomerat e. V. o. J. b.*).

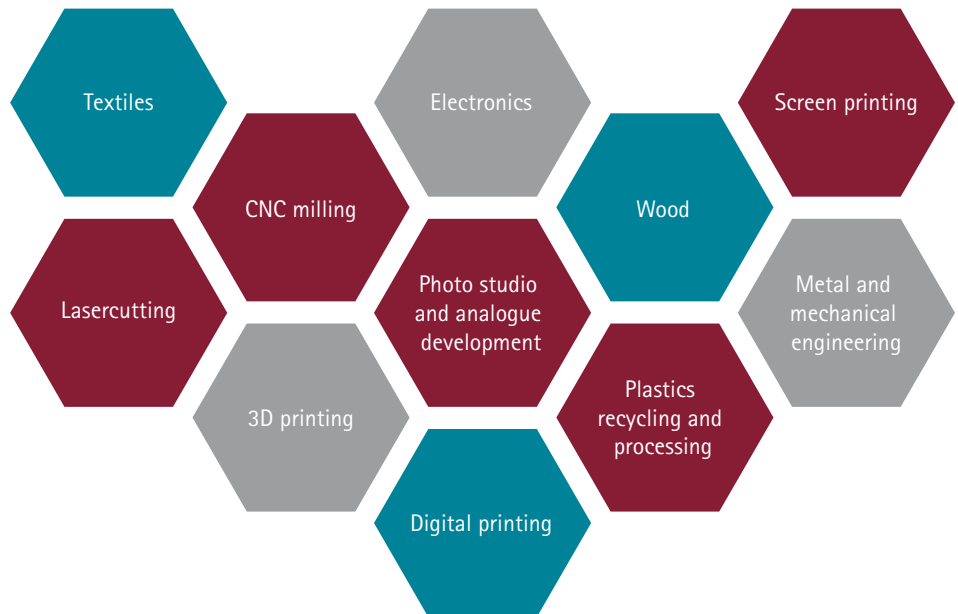
In addition to the community workshop run by *Konglomerat e. V.*, the *#Rosenwerk* is home to many other institutions and actors with whom the association cooperates (to varying degrees). In addition to studios, there is also a coffee roastery, a platform for female artists and a fitness studio (cf. *ibid.*).

Conclusion

The DIY centre at the *#Rosenwerk* is not only a community workshop, but also a place of knowledge transfer and shared learning. In addition to urban production and do-it-yourself, a practice of sustainable development is also promoted here. The example shows that with the help of a self-organised and committed collective of many different actors, a multifaceted place of community can emerge and establish itself as a successful model of a DIY centre.



Photo: #Rosenwerk



► Figure 26
The workshop areas of the
#Rosenwerk

(Source: own representation)

5.5 Homepreneurs

Community shop SchnickSchnack



Community Shop SchnickSchnack

Products: Children's clothing, (recycled) products made of wax, paper, wood, felt etc.

Foundation: 2015

Stakeholders involved:

8 Homepreneurs

Address: Markstraße 408
44795 Bochum

Site Description:

ground floor location, supply centre/
district centre

More information at:

<https://www.fb.me/schnickschnackbo>

Instead of running a shop alone, in some cases it can be a good option to open a community shop together with other producers. Especially for homepreneurs, community shops are an attractive and low-risk sales model (cf. I 6).



"Homepreneurs are entrepreneurs who work at home and mostly produce and distribute things [...] in the sense of the do-it-yourself movement" (Brandt et al. 2017a). Distribution can take place via internet platforms (e.g. Etsy), within the circle of acquaintances and the neighbourhood, via fairs or markets, and more recently also in cafés or hotels in a corner for homemade goods or in special shops that rent shelves to micro-enterprises or community shops. The products and activities vary greatly: cooking, baking, handicrafts, crochet, knitting, sewing, carpentry or 3D printing. In principle, low-emission production can take place wherever people live, even on a small scale, e.g. in their own production cellar, the craft garage or the former children's room. Home production' can keep people in the neighbourhood, who contribute to their own livelihoods with their products and in part offer supply potential (cf. ibid.).

Attractive sales model for homepreneurs

In the Weitmar district of Bochum, which borders the city centre to the south, 'eight creatives' have joined forces and opened the community shop *SchnickSchnack*, which sells handmade products made at home. Many of the creatives produce on a part-time basis. In addition to felt products and children's clothing, the product range includes recycled products made of wax and paper, wooden products and much more. Individual wishes of the customers are also fulfilled, which is why the shop has many regular customers (cf. I 6).

Community as a success factor

A clear separation of the different product areas is necessary for the functioning of the community shop. The sales in the shop are done by the producers themselves in different shifts. They therefore share not only the shop but also the working hours. This sales model requires a clear allocation of the prices collected for the respective products when selling the goods, which is why precise documentation is necessary. The producers share the rent for the shop and pay a

flat rate per month, which includes all costs. Organisational aspects of the community shop are discussed at regular meetings (cf. *ibid.*).

What the creatives particularly appreciate about their community shop is the personal contact with the customers. A big advantage over online shops is the possibility to explain the functioning of the products to the customers on site. In addition, the producers sell their products partly via Etsy, an online sales platform, or at creative markets. The mutual exchange also promotes new product ideas (cf. *ibid.*).

Conclusion

The community shop enables home entrepreneurs in particular to sell their products. Especially when it comes to smaller product series and the sales volume is low, a community shop is a good opportunity to sell without taking a high business risk. Especially at the beginning, it is possible to test how new product ideas are received by customers and how strong the demand is.



Photos: UrbaneProduktion.Ruhr

5.6 Festival Urban Production

LutherLAB



LutherLAB

Products: Aquaponics plants, beer, Jewellery, upcycling objects, cargo bike
Period: 16.09.–19.10.2017
Address: Alte Bahnhofstraße 166
44892 Bochum

Stakeholders involved:

BMBF research project with 4.5 FTE, actors from the district, companies

Site Description:

Church in a district centre

Kontakt: www.lutherlab.de



Photo: Stefan Szwedziak

As part of the BMBF research project *UrbaneProduktion.Ruhr*, the ‚LutherLAB: Festival der Urbanen Produktion - Langendreer selberrachen‘ was created in autumn 2017 as a five-week interim use of a church building in the Bochum district of Langendreer-Alter Bahnhof. The research project thus focused on a structurally weak district in which urban production was to be practised experimentally using the methods of the living lab. The aim was to provide a stage for manufacturing companies, to strengthen and establish local networks, to draw attention to the topic of urban production and to explore the extent to which a church building is suitable for productive uses.

Reasons and drivers for choosing the church were its central location in the district, the imposing architecture of the building and, in particular, the church congregation as owner, which was very open to an interim use by the *UrbaneProduktion.Ruhr* project.

Stakeholders for the development of the site and the festival programme

The Office for Housing and Urban Development of the City of Bochum had actively brought in the church building as a location for the living lab. After an initial site visit, the church congregation was willing to make the building available to the research project free of charge for the duration of the festival and allowed the church pews to be moved out. The cooperation with the approval authorities within the city of Bochum for the temporary use was also exemplary.

For the ‚Festival of Urban Production‘, further local partners were sought as comrades-in-arms and multipliers. The socio-cultural centre *Bahnhof Langendreer*, the local district management *Werne/Langendreer-Alter Bahnhof (WLAB)*, the advertising association *Alter Bahnhof* and *Langendreer hat's* turned out to be important project partners. Due to their local roots in the district, they were important multipliers and facilitated the inclusion of other initiatives (cf. Meyer/Schambelon 2019).

Actors of implementation during the festival

Businesses, self-employed people and hobby makers, who were identified by the research team in the run-up to the festival, were given the opportunity to offer workshops during the festival. „Upcycling products, beer, oyster mushrooms, seed bombs, lampshades made from scrap wood, stools made from bulky waste, aquaponics systems, i.e. recirculating systems for fish production and plant cultivation, jewellery, pallet furniture, prototypes from the 3D printer or jam were produced“ (Butzin/Meyer 2020). In order to enable participation by as many interested parties as possible, the workshops took place mainly on Saturdays (cf. Meyer/Schambelon 2019).

In cooperation with *Bahnhof Langendreer*, the district management and the advertising association Langendreer hat's, a supporting programme was also developed that opened up the building with the help of events that took place almost daily. Among the offerings were café times with coffee and cake, coworking, cultural and discussion events on new work, open workshops and evenings on business start-ups. Several workshops and events were planned and held in parallel to test a possible multifunctional use of the nave and to bring different people together (cf. Meyer/Schambelon 2019).

Conclusion

Among the approximately 1,000 visitors were many former parishioners who were grateful to be able to enter their church again, but also people who had little connection to the building and welcomed being able to move around freely, make something or simply drink coffee there.

Through the subsequent founding of an association and further consultation by the research project, the interim use filled the church building with themes of community production and opened it up, thus attracting different people. The building was returned to the residents of Langendreer for the period and reinterpreted as a centre of social gathering, participation and personal development (cf. Bunse/Meyer 2018).



Photo: ZIMI Pix



Photos: Luisa Gehnen / Die Urbanisten e.V.

6 Index

- | | | |
|---------------------------------------|----------------------------|---------------------------|
| Circular economy p. 18 | Makerspace p. 67 | Typology p. 42 |
| City of short distances p. 17 | Mietshäuser-Syndikat p. 69 | Urban agriculture p. 92 |
| Homepreneurs p. 102 | Pop-up store/shop p. 59 | Urban industry p. 88 |
| Intersectoral structural change p. 15 | Prosumption p. 70 | Urban manufacture p. 96 |
| Living labs p. 34 | Structural change p. 13 | Vertical production p. 91 |
| Local economy p. 25 | Transparent factory p. 61 | |

7 Read more

Case studies and ideas for the implementation of urban production

- Brandt, Martina; Butzin, Anna; Gärtner, Stefan; Hennings, Gerd; Meyer, Kerstin; Siebert, Sebastian; Ziegler-Hennings, Christiane (2017): **Produktion zurück ins Quartier? Neue Arbeitsorte in der gemischten Stadt.** Gelsenkirchen, Dortmund. Online verfügbar unter: <https://www.iat.eu/aktuell/veroeff/2017/Produktion-zurueck-ins-Quartier.pdf>
- Erbstößer, Anne-Caroline (2016): **Produktion in der Stadt.** Berlin: Technologiestiftung Berlin. Online verfügbar unter: https://www.technologiestiftung-berlin.de/fileadmin/daten/media/publikationen/161005_Produktion_in_der_Stadt.pdf
- Förster, Agnes; Wenzel, Stephanie; Thierstein, Alain; Gilliard, Lukas; Scholze, Lea; Unland, Leila; Brunner, Bernadette (2017): **Gewerbe & Stadt.** München: Technische Universität München; STUDIO | STADT | REGION. Online verfügbar unter: <https://mediatum.ub.tum.de/doc/1398132/1398132.pdf>
- Made in Aachen (2019): **Expertisen.** Online verfügbar unter: <http://mia-projekt.de/expertisen>
- UrbaneProduktion.Ruhr (2019): **Fallbeispiele und Inspirationen.** Online verfügbar unter: <https://urbaneproduktion.ruhr/inspiration/>

On the definition and measurement of urban production

- Läpple, Dieter (2016): **Produktion zurück in die Stadt. Ein Plädoyer.** In: Kaye Geipel (Hg.): Die Produktive Stadt. Wie Wohnen, Gewerbe und Industrie 4.0 zusammenfinden können. 211. Aufl. 35.2016 Bände. Berlin (Stadt Bauwelt), S. 22–29. Online verfügbar unter: <http://www.bauwelt.de/dl/1073788/artikel.pdf>
- Mühl, Caroline; Busch, Hans-Christian; Fromhold-Eisebith, Martina; Fuchs, Martina (2019): **Urbane Produktion. Dynamisierung stadtregioalner Arbeitsmärkte durch Digitalisierung und Industrie 4.0?** Hg. v. Hartmut Hirsch-Kreinsen und Anemari Karačić. FGW -

Forschungsinstitut für gesellschaftliche Weiterentwicklung, Düsseldorf (Digitalisierung von Arbeit, 14). Online verfügbar unter: https://www.fgw-nrw.de/fileadmin/user_upload/DvA_14_Studie_Muehl_et_al._web.pdf

- Stiehm, Sebastian David (2017): **Gestaltungsparameter für die (Re-) Integration von Produktion in den urbanen Raum im Kontext von Industrie 4.0**. Dissertation. Aachen: Rheinisch-Westfälische Technische Hochschule Aachen, Fakultät für Maschinenwesen.
- Piegeler, Monika; Spars, Guido (2019): **Urbane Produktion - Konzept und Messung**. Wuppertal: Bergische Universität Wuppertal. Online verfügbar unter: https://www.oekonomie-arch.uni-wuppertal.de/fileadmin/architektur/oekonomie-arch/Dateien/UrbaneProduktion_MP_GS_2019.pdf
- Gärtner, Stefan (2019): **Strukturwandel und Produktionsarbeit im urbanen Raum**. In: Arbeit: Zeitschrift für Arbeitsforschung, Arbeitsgestaltung und Arbeitspolitik 28, H. 3, S. 285-305.
- Brandt, Martina / Gärtner, Stefan / Meyer, Kerstin: (2017): **Urbane Produktion - ein Versuch einer Begriffsdefinition**. Gelsenkirchen: Institut Arbeit und Technik (Forschung Aktuell, Nr. 08/2017). Online verfügbar unter: <https://www.iat.eu/forschung-aktuell/2017/fa2017-08.pdf>

Production as local value creation

- Gornig, Martin; Belitz, Heike; Geppert, Kurt; Löckener, Ralf; Schiersch, Alexander; Werwatz, Axel (2018): **Industrie in der Stadt: Wachstums-motor mit Zukunft**. In: DIW Wochenbericht 85 (47), S. 1003-1004. DOI: 10.18723/diw_wb:2018-47-1. Online verfügbar unter: https://www.diw.de/documents/publikationen/73/diw_01.c.607763.de/18-47.pdf
- Juraschek, Max; Vossen, Benjamin; Hoffschroer, Holger; Reicher, Christa; Herrmann, Christoph (2018): **Urbane Produktion. Ökotone als Analogie für eine nachhaltige Wertschöpfung in Städten**. In: Tobias Redlich, Manuel Moritz und Jens P. Wulfsberg (Hg.): Interdisziplinäre Perspektiven zur Zukunft der Wertschöpfung. Wiesbaden: Springer Fachmedien Wiesbaden, S. 195-207.

Studies on open workshops and makerspaces

- Kirk, Engel Hadley; Morgan-Hatch, Rhianon (2015): **Co-Making: Research into London's Open access Makerspaces and Shared Workshops**. London: Workshop East. Online verfügbar unter: <https://www.london.gov.uk/sites/default/files/makerspaces-jan2015.pdf>
- Lange, Bastian; Domann, Valentin; Häfele, Valerie (2016): **Wertschöpfung in offenen Werkstätten. Eine empirische Erhebung kollaborativer Praktiken in Deutschland**. Berlin: Institut für ökologische Wirtschaftsforschung (Schriftenreihe des IÖW, SR 213/16). Online verfügbar unter: https://www.ioew.de/fileadmin/user_upload/BILDER_und_Downloaddateien/Publikationen/Schriftenreihen/IOEW_SR-213_Wertschoepfung_in_offenen_Werkstaetten.pdf
- Simons, Arno; Petschow, Ulrich; Peuckert, Jan (2016): **Offene Werkstätten - nachhaltig innovativ? Potenziale gemeinsamen Arbeitens und Produzierens in der gesellschaftlichen Transformation**. Berlin: Institut für ökologische Wirtschaftsforschung (Schriftenreihe des IÖW, 212). Online verfügbar unter: https://www.ioew.de/fileadmin/user_upload/BILDER_und_Downloaddateien/Publikationen/Schriftenreihen/IOEW_SR-212_Offene_Werkstaetten-nachhaltig_innovativ.pdf
- Suntje Schmidt; Oliver Ibert; Kuebart, Andreas; Kühn, Juliane (2016): **Open Creative Labs in Deutschland. Typologisierung, Verbreitung und Entwicklung**. Erkner. Online verfügbar unter: https://leibniz-irs.de/fileadmin/user_upload/Transferpublikationen/2017-Open_Creative_Labs_in_Deutschland-Typologisierung_Verbreitung_und_Entwicklungsbedingungen.pdf

News and publications from the research project UrbaneProduktion.Ruhr

- www.urbaneproduktion.ruhr



8 Sources

8.1 Literature

- Arndt, Wulf-Holger; Klein, Tobias (2018): Lieferkonzepte in Quartieren – die letzte Meile nachhaltig gestalten. Lösungen mit Lastenrädern, Cargo Cruisern und Mikro- Hubs. Berlin: Deutsches Institut für Urbanistik.
- Austermann, Klaus; Berhörster, Michael; Landsberg, Alexandra; Meyer, Christian; Nakelski, Sabine; Scholz, Carola (2012): Integrierte Handlungskonzepte in der Stadtentwicklung. Leitfaden für Planerinnen und Planer. Düsseldorf: Ministerium für Wirtschaft, Energie, Baue, Wohnen und Verkehr des Landes Nordrhein-Westfalen.
- Aver, Caner (2013): Migration, ethnische Ökonomie und Stadtentwicklung. In: Informationen zur Raumentwicklung, (5), S. 393-402.
- BauGBÄndG 2017 – Muster-Einführungserlass zum Gesetz zur Umsetzung der Richtlinie 2014/52/EU im Städtebaurecht und zur Stärkung des neuen Zusammenlebens in der Stadt und zu weiteren Änderungen des Baugesetzbuchs.
- BauNVO – Verordnung über die bauliche Nutzung der Grundstücke (Baunutzungsverordnung – BauNVO –) in der Fassung der Bekanntmachung vom 21.11.2017 (BGBl. I S. 3786), in der zuletzt geänderten Fassung.
- BBSR – Bundesinstitut für Bau-, Stadt- und Raumforschung (2014): Große Regionale Unterschiede bei Flächenverbrauch in Deutschland, Abgerufen von: https://www.bbsr.bund.de/BBSR/DE/Home/Topthemen/flaechenverbrauch_deutschland.html (letzter Zugriff: 16.07.2019).
- Behörde für Wirtschaft, Verkehr und Innovation, Hamburg (2014): Handwerker- und Gewerbehöfe. Bericht 2014 – Überblick über private und städtische Gewerbehöfe in Hamburg. Hamburg: Freie und Hansestadt Hamburg.
- Bell, Daniel (1976): The Coming of Post-Industrial Society. New York: Basic Books.
- BMBU – Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit (2007): LEIPZIG CHARTA zur nachhaltigen europäischen Stadt. Berlin: BMBU. Abgerufen von: https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Nationale_Stadtentwicklung/leipzig_charta_de_bf.pdf (letzter Zugriff: 18.07.2019).
- BMWi – Bundesministerium für Wirtschaft und Energie (2018a): Förderdatenbank. Gemeinschaftsaufgabe „Verbesserung der regionalen Wirtschaftsstruktur“ (GRW). Abgerufen von: <http://www.foerderdatenbank.de/Foerder-DB/Navigation/Foerderrecherche/suche.html?get=49398a8a0000cc1d2e0a3ee077b7771b;views=document&doc=373> (letzter Zugriff: 20.08.2019).
- BMWi – Bundesministerium für Wirtschaft und Energie (2018b): Förderdatenbank. Förderung der digitalen Ausstattung in überbetrieblichen Berufsbildungsstätten (ÜBS) und Kompetenzzentren. Abgerufen von: <http://www.foerderdatenbank.de/Foerder-DB/Navigation/Foerderrecherche/suche.html?get=49398a8a0000cc1d2e0a3ee077b7771b;views=document&doc=13856> (letzter Zugriff: 20.08.2019).
- BMWi – Bundesministerium für Wirtschaft und Energie (2019): Förderdatenbank. Klimaschutzinitiative – Klimaschutzprojekte im kommunalen Umfeld (Kommunalrichtlinie). Abgerufen von: <http://www.foerderdatenbank.de/Foerder-DB/Navigation/Foerderrecherche/suche.html?get=49398a8a0000cc1d2e0a3ee077b7771b;views=document&doc=10153> (letzter Zugriff: 20.08.2019).
- Brandt, Martina; Butzin, Anna; Gärtner, Stefan; Hennings, Gerd; Meyer, Kerstin; Siebert, Sebastian; Ziegler-Hennings, Christiane (2017a): Produktion zurück ins Quartier? Neue Arbeitssorte in der gemischten Stadt. Gelsenkirchen, Dortmund. Abgerufen von: <https://www.iat.eu/aktuell/veroeff/2017/Produktion-zurueck-ins-Quartier.pdf> (letzter Zugriff: 22.11.2018).
- Brandt, Martina; Gärtner, Stefan; Meyer, Kerstin (2017b): Urbane Produktion – ein Versuch einer Begriffsdefinition. In: Institut Arbeit und Technik (IAT) (Hg.): Forschung Aktuell 08/2017. Gelsenkirchen.
- Brandt, Martina; Gärtner, Stephan; Meyer, Kerstin (2018): Urbane Produktion, Planungsrecht und dezentrale Finanzsysteme. In: Institut Arbeit und Technik (IAT) (Hg.): Forschung Aktuell 10/2018. Gelsenkirchen.
- Brandt, Martina; Gärtner, Stefan (2019): Lokale Ökonomie: was, wer, wie auf welchen Ebenen? In: Niermann, Oliver; Schnur, Olaf; Drilling, Matthias (Hg.): Ökonomie im Quartier: von der sozial-räumlichen Intervention zur Postwachstumsgesellschaft. Heidelberg: Springer, S. 29-47.
- Brandt, Martina; Meyer, Kerstin; Gärtner, Stefan (2019): Ethische, ethnische und urbane Ökonomie im Quartier als Chance für die Wirtschaftsförderung. In: Schaefer, Sigrid; Lindner, Alexandra; Schröder, Heike; Dangel, Daniel (Hg.): Quartiersforschung im Fokus der Wohnungswirtschaft: Trends und Entwicklungsperspektiven. Lemgo: Rohn, S. 45-59.
- Brinks, Verena; Ibert, Oliver (2015). Mushrooming entrepreneurship: The dynamic geography of enthusiast-driven innovation. In: Geoforum, (65), S. 363-373.
- Bunse, Jan; Meyer Kerstin (2018): Urbane Produktion im Reallabor. In: Schaefer, Sigrid; Lindner, Alexandra; Schröder, Heike; Dangel, Daniel (Hg.): Quartiersforschung im Fokus der Wohnungswirtschaft: Trends und Entwicklungsperspektiven. Lemgo: Rohn, S. 99-112.

- Buttenberg, Lisa; Overmeyer, Klaus (2014): Raumunternehmen zwischen informeller Aktivierung und formeller Planung. In: Informationen zur Raumentwicklung 2/2014. Franz Steiner Verlag, S. 135-142.
- Butzin, Anna; Meyer, Kerstin (2020): Temporäre räumliche Nähe in Produktionsprozessen. In: Henn, Sebastian; Growe, Anna (Hg.): Raumforschung und Raumordnung: Temporäre räumliche Nähe – Akteure, Orte und Interaktionen. Im Erscheinen.
- Cohen, Stephen; Zysman, John (1987): Manufacturing Matters. The myth of the postindustrial economy. New York: Basic Books.
- Dahlbeck, Elke; Gärtner, Stefan (2019): Gerechter Wandel für Regionen und Generationen: Erfahrungen aus dem Strukturwandel im Ruhrgebiet. Berlin: WWF-Deutschland.
- David, Alexandra (2017): Migrantisches Unternehmertum – Eine Chance der Arbeitsmarktintegration für geflüchtete Menschen? In: Institut Arbeit und Technik (IAT) (Hg.): Forschung Aktuell 02/2017. Gelsenkirchen.
- Diez Ladera, Tomas (2016). FabCity Whitepaper. Abgerufen von: https://www.cowork.org/data/cowork/user_upload/Dateien/Tomas_Diez_whitepaper_fablab_barcelona.pdf (letzter Zugriff: 25.03.2019).
- DIHK – Deutscher Industrie- und Handelskammertag e. V. (2017): Handreichung für die Abgrenzung Handwerk zu Industrie/Handel/Dienstleistung. Berlin. Abgerufen von: https://www.halle.ihk.de/blob/halikhk24/recht/Gewerberecht/Abgrenzung_zum_Handwerk/3470358/06935b4be1b68a44a494c03bdb3fd568/Handreichung-fuer-die-Abgrenzung-Handwerk-zu-Industrie-Handel-Dienstleistung-data.pdf (letzter Zugriff: 09.09.2019).
- Dombrowski, Uwe; Riechel, Christoph (2014): Die Urbane Fabrik. Potenziale einer stadtnahen Produktion. In: Industrie Management, (4), S. 11-15.
- Ematinger, Reinhard (2018): Von der Industrie 4.0 zum Geschäftsmodell 4.0. Chancen der digitalen Transformation. Wiesbaden: Springer.
- Flögel, Franz; Gärtner, Stefan (2011): Raumunternehmen. Endbericht an die Montag Stiftung Urbane Räume. Gelsenkirchen: Institut Arbeit und Technik.
- Flögel, Franz; Gärtner, Stefan (2012): Raumunternehmen und die Aktivierung von Nachbarschaften. Bonn: Montag Stiftung Urbane Räume.
- Flögel, Franz; Meyer, Kerstin; Schlieter, Dajana (2019): Finanzierung von Unternehmen der lokalen Ökonomie - Hemmnisse und Möglichkeiten. In: Henn, Sebastian; Behling, Michael; Schäfer, Susann (Hg.): Lokale Ökonomie. Konzepte, Quartiersentwicklung und Interventionen. Heidelberg: Springer Spektrum.
- Fourastié, Jean (1954): Die große Hoffnung des zwanzigsten Jahrhunderts. Köln: Bund-Verlag.
- Gärtner, Stefan; Meyer, Kerstin; Schonlau, Marcel (2020): Urbane Produktion: Ist da wirklich Speck dran? Im Erscheinen.
- Geipel, Kaye; Schade-Bünsow, Boris (2019): Die Charta muss mehr als nur aktualisiert werden. In: Stadt Bauwelt, 19 (223), S. 64-65.
- Gornig, Martin; Werwatz, Axel (2018): Anzeichen für eine Reurbanisierung der Industrie. In: DIW Wochenbericht (47). Berlin, S. 5-11.
- Grimm, Gaby (2004): Stadtentwicklung und Quartiersmanagement: Entwicklung und Aufbau lokal-spezifischer Organisations- und Steuerungsstrukturen. Essen: Klartext.
- Haberkorn, Felix (2017): Inklusion in Karlsruhe. Diese Bäckerei zeigt wie's geht. In: ka-News – Karlsruhe. Abgerufen von: <https://www.ka-news.de/wirtschaft/regional/Inklusion-in-Karlsruhe-Diese-Baeckerei-zeigt-wie-s-geht;art127,2141566> (letzter Zugriff: 07.10.2019).
- Hartmann-Wendels, Thomas; Pfingsten, Andreas; Weber, Martin (2010): Bankbetriebslehre. Berlin: Springer.
- Haselsteiner, Edeltraud; Schwaighöfner, Katja; Frey, Harald; Laa, Barbara; Madner, Verena; Grob, Lisa-Maria (2019): Vertical Urban Factory. Innovative Konzepte der vertikalen Verdichtung von Produktion und Stadt. Wien: URBANITY - Architektur, Kunst, Kultur und Sprache.
- Haupt, Reinhard (2000): Industriebetriebslehre. Einführung Management im Lebenszyklus industrieller Geschäftsfelder. Wiesbaden: Gabler.
- Horn, Gesa; Klanten, Christoph; Mamonova, Svetlana; Schönefeld, Kathrin; Simons, Leonard; Seidel, Lisa; Uelpenich, Jérôme (2019): MIA Expertisen. Forecasting Aachen 2030 - Urbane Produktion in der Zukunftsstadt. Volume 3. (Hg.): Hees, Frank; Begaß, Dieter M.; Fromhold-Eisebith, Martina; Schmitt, Gisela; Burggräf, Peter. Aachen. Abgerufen unter http://mia-projekt.de/wp-content/uploads/2019/02/MIA_Expertisen_Vol_3.pdf (letzter Zugriff: 11.09.2019).
- Jansen, Dorothea; Wald, Andreas (2007): Netzwerktheorien. In: Benz, Arthur; Lütz, Susanne; Schimank, Uwe; Simonis, Georg (Hg.): Handbuch Governance. Theoretische Grundlagen und empirische Anwendungsfelder. Wiesbaden: VS Verlag für Sozialwissenschaften / GWV Fachverlage GmbH Wiesbaden, S. 188-199.
- Junker, Rolf; Pump-Uhlmann, Holger (2019): Einkaufsstraßen neu denken. Bausteine für neue Perspektiven. Gelsenkirchen: StadtBauKultur NRW.
- Juraschek, Max; Vossen, Benjamin; Hoffschröer, Holger; Reicher, Christa; Herrmann, Christoph (2018): Urbane Produktion. Ökotonie als Analogie für eine nachhaltige Wertschöpfung in Städten. In: Redlich, Tobias; Moritz, Manuel; Wulfsberg, Jens Peter (Hg.): Interdisziplinäre Perspektiven zur Zukunft der Wertschöpfung. Wiesbaden: Springer Gabler, S. 195-207.
- Just, Juliane (2015): In Löbtau entsteht mit dem „Rosenwerk“ ein neues Zentrum für Kreative. In: Dresdener Neueste Nachrichten. Abgerufen von: <https://www.dnn.de/Dresden/Lokales/In-Loebtau-entsteht-mit-dem-Rosenwerk-ein-neues-Zentrum-fuer-Kreative> (letzter Zugriff: 02.10.2019).
- Kelle, Udo; Kluge, Susann (2010): Konstruktion empirisch begründeter Typologien. In: Kelle, Udo; Kluge, Susann (Hg.): Vom Einzelfall zum Typus. Fallvergleich und Fallkontrastierung in der qualitativen Sozialforschung. Wiesbaden: VS Verlag für Sozialwissenschaften, S. 83-107.

- KfW (2019a): Merkblatt Modellprojekte Smart Cities: Stadtentwicklung und Digitalisierung. Abgerufen von: [https://www.kfw.de/PDF/Download-Center/F%C3%B6rderprogramme-\(Inlandsf%C3%B6rderung\)/PDF-Dokumente/6000004472_M_436_Smart_Cities.pdf](https://www.kfw.de/PDF/Download-Center/F%C3%B6rderprogramme-(Inlandsf%C3%B6rderung)/PDF-Dokumente/6000004472_M_436_Smart_Cities.pdf) (letzter Zu-griff: 20.10.2019).
- KfW (2019b): Merkblatt Energetische Stadtsanierung - Zuschuss. Abgerufen von: [https://www.kfw.de/Download-Center/F%C3%B6rderprogramme-\(Inlandsf%C3%B6rderung\)/PDF-Dokumente/6000002110-M-Energetische-Stadtsanierung-432.pdf](https://www.kfw.de/Download-Center/F%C3%B6rderprogramme-(Inlandsf%C3%B6rderung)/PDF-Dokumente/6000002110-M-Energetische-Stadtsanierung-432.pdf) (letzter Zugriff: 20.10.2019).
- Kranert, Martin (2017): Einführung in die Kreislaufwirtschaft. Planung – Recht – Verfahren. Wiesbaden: Springer.
- Kuschner, Ulrich (2010): Der sachgerechte Bebauungsplan. Handreichungen für die kommunale Planung. Bonn: vwh - Dienstleistung GmbH.
- Läpple, Dieter (2013): Produktion zurück in die Stadt. In: Kronauer, Martin; Siebel, Walter (Hg.): Polariserte Städte. Soziale Ungleichheiten als Herausforderung für die Stadtpolitik. Frankfurt: Campus Verlag, S. 129-150.
- Läpple, Dieter (2016): Produktion zurück in die Stadt. Ein Plädoyer. In: Bauwelt, (35), S. 22-29. Abgerufen von: <https://www.bauwelt.de/das-heft/Produktion-zurueck-in-die-Stadt.-Ein-Plaedyer-Umdenken-moderne-Funktionstrennung-in-Wohn-und-Gewerbequartiere-Dieter-Laepple-2662063.html>, (letzter Zugriff: 15.07.2019).
- Läpple, Dieter (2018): Perspektiven einer produktiven Stadt. In: Schäfer, Klaus (Hg.): Aufbruch aus der Zwischenstadt. Urbanisierung durch Migration und Nutzungsmischung. Bielefeld: transcript Verlag, S. 151-176.
- Lentes, Joachim (2017): Urbane Produktion. In: Spath, Dieter; Westkämper, Engelbert; Bullinger, Hans-Jörg; Warnecke, Hans-Jürgen (Hg.): Neue Entwicklungen in der Unternehmensorganisation. Berlin, Heidelberg: Springer Vieweg, S. 45-55.
- Lessenich, Stephan (2016): Neben uns die Sintflut. Die Externalisierungsgesellschaft und ihr Preis. Berlin: Hanser.
- Mamonova, Svetlana; Fromhold-Eisebith, Martina (2019): Akzeptanz urbaner Produktion – Ergebnisse einer Haushaltsbefragung in Aachen. In: Hees, Frank; Begaß, Dieter M.; Fromhold-Eisebith, Martina; Schmitt, Gisela; Burggräf, Peter (Hg.): MIA Expertisen. Volume 4.
- Meisel, Ulli (2014): Grenzen der Bestandserhaltung – Abriss als Paradigma nachhaltiger Bestandsentwicklung? Dortmund: ILS – Institut für Landes- und Stadtentwicklungsforschung gGmbH.
- Meyer, Kerstin; Schambelon, Sophia (2019): LutherLAB - Aus Reallabor zu Urbaner Produktion wird ein Verein. In: Merten, Thomas; Terstriep, Judith; Seipel, Nils; Rabadjieva, Maria (Hg.): Lokale Wirtschaftsstrukturen transformieren – Gemeinsam Zukunft gestalten. Bottrop: Amt für Wirtschaftsförderung und Standortmanagement der Stadt Bottrop, S. 146-147. Abgerufen von: http://www.wirtschaftsstrukturen.de/media/22_lutherlab_aus_reallabor_zu_urbaner_production_wird_ein_verein.pdf (letzter Zugriff: 15.10.2019).
- Mistry, Nisha (2012): Urban Manufacturing, Infrastructure and Economic Development. Trenton: Regional Planning Summit. Abgerufen von: <http://www.plansmartnj.org/wp-content/uploads/2012/04/Mistry-PlanSmart-NJ-Infrastructure.pdf> (letzter Zugriff 03.07.2019).
- Mühl, Caroline; Busch, Hans-Christian; Fromhold-Eisebith, Martina; Fuchs, Martina (2019): Urbane Produktion – Dynamisierung stadtreionaler Arbeitsmärkte durch Digitalisierung und Industrie 4.0? Düsseldorf.
- Münch, Vera (2015): Unternehmen unterschätzen die Bedeutung von Netzwerken. In: WirtschaftsWoche. Abgerufen von: <https://www.wiwo.de/erfolg/management/management-unternehmen-unterschaetzen-die-bedeutung-von-netzwerken/12023484.html> (letzter Zugriff: 29.08.2019).
- Ninnemann, Jan; Hölter, Ann-Kristin; Beecken, Wolfgang; Thyssen, Robert; Tesch, Torsten (2017): Last-Mile-Logistic Hamburg – Innerstädtische Zustellogistik. Studie im Auftrag der Behörde für Wirtschaft, Verkehr und Innovation der Freien und Hansestadt Hamburg. Hamburg: HSBA Hamburg School of Business Administration.
- Oehler, Patrick; Drilling, Matthias (2013): Quartier. In: Reutlinger, Christian; Fritsche, Caroline; Ling, Eva (Hg.): Raumwissenschaftliche Basics: Eine Einführung für die soziale Arbeit. Wiesbaden: VS-Verlag, S. 201-209.
- Parodi, Oliver; Beecroft, Richard; Albiez, Marius; Tamm, Kaidi; Waitz, Colette (2016): Von „Aktionsforschung“ bis „Zielkonflikte“. Schlüsselbegriffe der Reallaborforschung. In: Karlsruher Institut für Technologie (KIT) (Hg.): Technikfolgenabschätzung – Theorie und Praxis, Reallabore als Ort der Nachhaltigkeitsforschung und Transformation. Karlsruhe: KIT, S. 9-18.
- Pine, Joseph; Gilmore, James (2000): The Experience Economy. Boston: Harvard School Business Press.
- PTKA – Projektträger Karlsruhe (2018): Ausschreibung Digitalisierung & Ultraeffizienz für eine zukunftsfähige urbane Produktion. Abgerufen von: http://www.ptka.kit.edu/files/Ausschreibung%20Digitalisierung%20und%20Ultraeffizienz_final.pdf (letzter Zugriff: 17.07.2019)
- Rehfeld, Dieter (2019): Studiengruppe Industriepolitik: Fragen nach dem „Wie?“ In: 30 Jahre Strukturwandel: Geschäftsbericht 2016 / 2017 / 2018. Gelsenkirchen: Institut Arbeit und Technik (IAT), S. 100-102.
- Reil, Harald (2014): Pop, pop, pop. Pop-up-Shops schießen weltweit wie Pilze aus dem Boden. München: Genios.
- Rhodes, Chris (2018): Manufacturing: statistics and policy. Briefing Paper. In: House of Commons Library (01942), S. 8.
- Schaefer, Sigrid; Hill, Alexandra; Schröder, Heike; Schonlau, Marcel (2014): Wohnen im Quartier – Die Rolle der Wohnungswirtschaft und neue Kooperationen für die Quartiersentwicklung. In: ZIWP – Zeitschrift für Immobilienwirtschaft und Immobilienpraxis. 2 (2), S. 39-48.

- Schonlau, Marcel; Lindner, Alexandra (2018): Automatisierte Quartiersabgrenzung am Beispiel der Stadt Essen. In: Schaefer, Sigrid; Lindner, Alexandra; Schröder, Heike; Dangel, Daniel (Hg.): Quartiersforschung im Fokus der Wohnungswirtschaft: Trends und Entwicklungsperspektiven. Lemgo: Rohn, S. 113-129.
- Schonlau, Marcel; Meyer, Kerstin; Lindner, Alexandra (2019): Erfolgsfaktoren und Hemmnisse zur Realisierung urbaner Produktion in Reallaboren. In: Schrenk, Manfred; Popovich, Vasily V.; Zeile, Peter; Elisei, Pietro; Beyer, Clemens; Ryser, Judith (Hg.): REAL CORP 2019 Tagungsband; 2.-4. April 2019, S. 291-301.
- Schössler, Martin; Baer, Daniela; Ebel, Gerald; Eickemeyer, Ludwig; Hoffschroer, Holger; Koch, Tobias.; Schwertner, Alexandra; Sonntag, Regina (2012): „Grüne Fabrik“ statt grüne Wiese – warum die Industrie wieder näher an die Stadt rücken sollte. In: Policy Brief – stiftung neue Verantwortung e. V., (2).
- Schultz, Brigitte (2012): Die Tübinger Südstadt. In: Bauwelt, (1-2), S. 22-25. Abgerufen von: https://www.bauwelt.de/dl/792682/bw_2012_01_0022-0025.pdf (letzter Zugriff: 15.10.2019).
- Schymiczek, Marcus (2017): Das Essener Eltingviertel wandelt sich immer weiter. In: Westdeutsche Allgemeine Zeitung (WAZ). Abgerufen von: <https://www.waz.de/staedte/essen/das-essener-elttingviertel-wandelt-sich-immer-weiter-id209483163.html> (letzter Zugriff: 05.08.2019).
- Senatsverwaltung für Stadtentwicklung und Wohnen Berlin (2019): Stadtentwicklungsplan Wirtschaft 2030. Online-Version. Berlin. Abgerufen von: https://www.stadtentwicklung.berlin.de/planen/stadtentwicklungsplanung/download/wirtschaft/StEP_Wirtschaft_2030_Online.pdf (letzter Zugriff: 24.10.2019).
- Soehlke, Cord (2015): Stadt bauen – mit den Bürgern. Die Tübinger Stadtentwicklung mit privaten Baugemeinschaften. Universitätsstadt Tübingen. Augsburg. Abgerufen von: https://www.petrakellystiftung.de/fileadmin/user_upload/newsartikel/PDF_Dokus/Soehlke_Tuebingen.pdf (letzter Zugriff: 15.10.2019).
- Spath, Dieter (2012): Urbane Produktion. In: Weinert, Klaus; Beckmann, Klaus J.; Encarnação, José Luis; Herzog, Otthein; Höcker, Hartwig; Kuhn, Axel; Mühlhäuser, Max; Schober, Otmar; Spath, Dieter; Thoma, Klaus (Hg.): Stadt der Zukunft. Strategieelemente einer nachhaltigen Stadtentwicklung. München, Berlin, Brüssel: acatech – Deutsche Akademie der Technikwissenschaften, S. 61-71.
- Stadtentwicklung Wien (2014): STEP 2025. Stadtentwicklungsplan Wien. Abgerufen von: <https://www.wien.gv.at/stadtentwicklung/studien/pdf/b008379a.pdf> (letzter Zugriff: 29.08.2019).
- Stadtentwicklung Wien (2017): Fachkonzept Produktive Stadt. STEP 2025. Wien. Abgerufen von: <https://www.wien.gv.at/stadtentwicklung/studien/pdf/b008500a.pdf> (letzter Zugriff: 13.11.2019).
- StBA (2008): Klassifikation der Wirtschaftszweige. Mit Erläuterungen. Statistisches Bundesamt, Wiesbaden. Abgerufen von: https://www.destatis.de/DE/Methoden/Klassifikationen/Gueter-Wirtschaftsklassifikationen/Downloads/klassifikation-wz-2008-3100100089004.pdf;jsessionid=EF715FD192D05C491186CD5DA11D040D.internet732?__blob=publication-File (letzter Zugriff: 15.10.2019).
- Stiehm, Sebastian David (2017): Gestaltungsparameter für die (Re-) Integration von Produktion in den urbanen Raum im Kontext von Industrie 4.0. Dissertation. Aachen: Rheinisch-Westfälische Technische Hochschule Aachen.
- Stumpf, Klara (2018): Wirtschaftliche Transformation und die Gemeinwohl-Ökonomie. In: Förster, Marius; Hebert, Saskia; Hofmann, Mona; Jonas, Wolfgang (Hg.): Un/Certain Futures – Rollen des Designs in gesellschaftlichen Transformationsprozessen. Bielefeld: transcript Verlag, S. 174-179.
- Veugeliers, Reinhilde (2017): Remaking Europe: the new manufacturing as an engine for growth. Brüssel: Bruegel.
- Wagner-Endres, Sandra; Libbe, Jens (2019): Urbane Produktion in der Zukunftsstadt. Perspektiven für Forschung und Praxis. Berlin: SynVer*Z – Synthese- und Vernetzungsprojekt Zukunftsstadt.
- Wagner-Endres, Sandra; Wolf, Ulrike; Zwicker-Schwarm, Daniel (2018): Neue Konzepte für Wirtschaftsflächen. Herausforderungen und Trends am Beispiel des Stadtentwicklungsplanes Wirtschaft in Berlin. Berlin: Deutsches Institut für Urbanistik.
- Wald, Andreas; Jansen, Dorothea (2007): Netzwerke. In: Benz, Arthur; Lütz, Susanne; Schimank, Uwe; Simonis, Georg (Hg.): Handbuch Governance. Theoretische Grundlagen und empirische Anwendungsfelder. Wiesbaden: VS Verlag für Sozialwissenschaften / GWV Fachverlage GmbH Wiesbaden, S. 93-105.
- Welzbacher, Christian; Pirk, Walter; Ostheimer, Anne; Bartelt, Karen; Bille, Jens; Klemmt, Markus (2015): Digitalisierung der Wertschöpfungs- und Marktprozesse. Herausforderungen und Chancen für das Handwerk. Eine Vorstudie im Rahmen der Konzeption eines Demonstrations- und Kompetenzzentrums im Handwerk. Hannover: Leibniz Universität Hannover. Abgerufen von: https://hpi-hannover.de/dateien/Projektberichte/Studie_Digitalisierung_der_Wertschpfung.pdf (letzter Zugriff: 29.11.2018).
- Westhoff, Sarah; Lindner, Alexandra (2019): Nachhaltige Transformation urbaner Räume: Eine produktive Stadt – eine lebenswerte Stadt? In: Schrenk, Manfred; Popovich, Vasily V.; Zeile, Peter; Elisei, Pietro; Beyer, Clemens; Ryser, Judith (Hg.): REAL CORP 2019 Tagungsband; 2.-4. April 2019, S. 913-919.
- Wirtschaftsförderung metropol-ruhr (2012): ruhrAGIS - Atlas der Gewerbe- und Industriestandorte Metropole Ruhr. Mülheim an der Ruhr. Abgerufen von: https://business.metropol-ruhr.de/fileadmin/user_upload/Dokumente/Publikationen/Investorenservice/ruhrAGIS-Handbuch_Stand_2012.pdf (letzter Zugriff: 14.08.2019).
- Zentes, Joachim (2012): Vertikale Integration. In: Zentes, Joachim; Swoboda, Bernhard; Morschett, Dirk; Schramm-Klein, Hanna (Hg.): Handbuch Handel. Strategien - Perspektiven - Internationaler Wettbewerb. Wiesbaden: Springer, S. 89-101.

8.2 Internet pages

- ARL – Akademie für Raumforschung und Landesplanung (ARL) (o. J.): Städtebaulicher Vertrag, <https://www.arl-net.de/de/lexica/de/st%C3%A4dtebaulicher-vertrag> (letzter Zugriff: 09.09.2019).
- ARL – Akademie für Raumforschung und Landesplanung (2003): Stadtentwicklungsplanung, <https://www.arl-net.de/de/lexica/de/stadtentwicklungsplanung> (letzter Zugriff: 12.01.2019).
- Bäckerei Schmidt (o. J.): Unsere Produkte, <https://www.baeckerei-schmidt-karlsruhe.de/backwaren-baeckerei-schmidt-karlsruhe/> (letzter Zugriff: 07.10.2019).
- Baden-Württemberg (2018): 6,7 Millionen Euro für Urbane Produktion der Zukunft, <https://www.baden-wuerttemberg.de/de/service/presse/pressemitteilung/pid/67-millionen-euro-fuer-urbane-produktion-der-zukunft/> (letzter Zugriff: 15.07.2019).
- BBSR – Bundesinstitut für Bau-, Stadt- und Raumforschung (2017): Tübingen „Südstadt“, https://www.nationale-stadtentwicklungspolitik.de/NSP/SharedDocs/Projekte/WSProjekte_DE/Tuebingen_Suedstadt.html (letzter Zugriff: 15.10.2019).
- Berlin (2017): Industrielle Produktion, <https://www.berlin.de/wirtschaft/wirtschaftsstandort/branchen/industrielle-produktion/3929966-3927311-industrielle-produktion.html>; (letzter Zugriff: 01.10.2018).
- BIGH (2019): FAQ, <https://bigh.farm/faq/> (letzter Zugriff: 09.09.2019).
- BMU – Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit (o. J.): Nachhaltiger Konsum. <https://www.bmu.de/themen/wirtschaft-produkte-ressourcen-tourismus/produkte-und-konsum/nachhaltiger-konsum/> (letzter Zugriff: 08.08.2019).
- Brahm, Daniela; Schliesser, Les (2014): ExRotaprint Projektbeschreibung, <https://www.exrotaprint.de/wp-content/uploads/2017/02/ExRotaprint-Projektbeschreibung-deutsch.pdf> (letzter Zugriff: 22.02.2019).
- Bundesvereinigung Logistik (2018): Dossier Urbane Logistik, <https://www.bvl.de/dossiers/urbane-logistik/urbane-logistik-2018> (letzter Zugriff: 29.07.2019).
- Czech Statistical Office (2017): Statistical Yearbook of Prague – The employed in the national economy by CZ-NACE section in the Capital City of Prague, <https://www.czso.cz/csu/czso/9-labour-market-i8i8ckeoeu>; (letzter Zugriff: 01.10.2018).
- ExRotaprint (o. J.a): Arbeit, Kunst, Soziales, <https://www.exrotaprint.de/arbeit-kunst-soziales/> (letzter Zugriff: 24.02.2019).
- ExRotaprint (o. J.b): Erbbaurecht, <https://www.exrotaprint.de/erbbaurecht/> (letzter Zugriff: 05.01.2019).
- Fabfoundation (o. J.): Getting started with Fab Labs, <https://www.fabfoundation.org/getting-started/#fablabs-full> (letzter Zugriff: 10.8.2019).
- Galka, Max (2016): Half the World's Population Lives in Just 1% of the Land [Map]. <http://metrocosm.com/world-population-split-in-half-map/> (letzter Zugriff: 16.07.2019).
- Haushalten e. V. (o. J.): Idee und Ziel, http://www.haushalten.org/de/haushalten_idee_und_ziel.asp (letzter Zugriff: 17.07.2019).
- Impact Hub GmbH (2019): Bring an Impact Hub to your City, <http://makers.impacthub.net/bring-impact-hub-to-your-city/?hsCtaTracking=9aad5f93-3049-4400-a7eb-d491e0222ac5%7C04fe0f20-cffd-4907-abe2-9c4de8b8c75d> (letzter Zugriff: 05.10.2019).
- Konglomerat e.V. (o. J.a) Rosenwerk, <https://konglomerat.org/rosenwerk.html> (letzter Zugriff: 02.10.2019).
- Konglomerat e.V. (o. J.b): Wir, <https://konglomerat.org/wir.html> (letzter Zugriff: 02.10.2019).
- Landeshauptstadt Stuttgart: Zwischennutzung, <https://gis6.stuttgart.de/leerstandsmanagement/> (letzter Zugriff: 09.10.2019).
- MBW Marketinggesellschaft mbH (o. J.): Heute und Morgen für die Zukunft sorgen, <https://gläserne-produktion.de/> (letzter Zugriff: 08.10.2019).
- Mietshäuser Syndikat (o. J.): Selbstorganisiert wohnen - solidarisch wirtschaften, <https://www.syndikat.org/de/> (letzter Zugriff: 23.07.2019).
- MINYC – Made in NYC (o. J.): Why MINYC Matters, <https://madeinnyc.org/why-minyc-matters/> (letzter Zugriff: 08.08.2019).
- Office for National Statistics (2018): Employment by Industry, Borough, <https://data.london.gov.uk/dataset/employment-industry-borough>; (letzter Zugriff: 01.10.2018).
- Readymade UG (o. J.): #whomademychair @Eltingmöbel, <https://www.readymade-furniture.de/whomademychair-at-eling-moebel/> (letzter Zugriff: 03.10.2019).
- Richter, Roland (2009): Wohnquartiere als statistische Bezirke in Duisburg, https://www.duisburg.de/vv/medien/dez_i/TI_0309-text.pdf (letzter Zugriff: 15.10.2019).
- Senatsverwaltung für Wirtschaft, Energie und Betriebe (2017): Zahl der Erwerbstätigen in Berlin 2007 bis 2017, <https://www.berlin.de/sen/wirtschaft/wirtschaft/konjunktur-und-statistik/wirtschaftsdaten/beschaeftigung/>; (letzter Zugriff: 01.10.2018).
- Stadt Berlin (2017): Industrielle Produktion, <https://www.berlin.de/wirtschaft/wirtschaftsstandort/branchen/industrielle-produktion/3929966-3927311-industrielle-produktion.html>; (letzter Zugriff: 22.11.2019).

Stadt Aachen (o. J.): Aachen-Nord: Ein Stadtteil im Wandel, http://www.aachen.de/de/stadt_buerger/planen_bauen/stadtentwicklung/stadtviertel/aachennord/aachen-nord/index.html (letzter Zugriff: 22.11.2019).

Stadt Dortmund (2016): Quartiersentwicklung und Analysen, https://www.dortmund.de/de/leben_in_dortmund/planen_bauen_wohnen/stadterneuerung/quartiersentwicklung_und_analysen/index.html (letzter Zugriff: 15.10.2019).

Stadt Düsseldorf (2019): Integrierte Quartiersentwicklung, <https://www.duesseldorf.de/stadtplanungsamt/stadtentwicklung/integrierte-quartiersentwicklung.html> (letzter Zugriff: 15.10.2019).

Stadt von unten (o. J.): Ein Ort für Arbeit, Kunst und Soziales, <https://stadtvonunten.de/suk/pro/exrotaprint/> (letzter Zugriff: 24.10.2019).

Stadtteulfabrik (2019): Design-It-Yourself Workshops, <https://stadtteulfabrik.de/pages/workshops> (letzter Zugriff: 03.10.2019).

Statistisches Bundesamt (2017): Statistisches Jahrbuch 2017, https://www.destatis.de/DE/Publikationen/StatistischesJahrbuch/Arbeitsmarkt.pdf?__blob=publicationFile; (letzter Zugriff: 01.10.2018).

Statistisches Jahrbuch der Stadt Wien (2017): Statistisches Jahrbuch der Stadt Wien; Wirtschaft in Wien, <https://www.wien.gv.at/statistik/pdf/wirtschaft2017.pdf>; (letzter Zugriff: 01.10.2018).

Statistisches Landesamt Bremen (2015): Bremen in Zahlen, https://www.destatis.de/GPStatistik/servlets/MCRFileNodeServlet/BRHeft_derivate_00001024/biz2015_pdfa.pdf;jsession-id=12BC5F57CBDEC78CA422665BB5FD4DC; (letzter Zugriff: 01.10.2018).

Umweltbundesamt (2019): Siedlungs- und Verkehrsfläche nach Art der tatsächlichen Nutzung* (Stichtag 31.12.), https://www.umweltbundesamt.de/sites/default/files/medien/384/bilder/3_abb_indikator_anstieg-suv_2019-06-05.png (letzter Zugriff: 24.10.2019).

Warsaw (2018): Statistical Review of Warsaw, <http://warszawa.stat.gov.pl/en/communiquis-and-announcements/communiquis-and-announcements/other/statistical-review-of-war-saw-2nd-quarter-2018,1,19.html#>; (letzter Zugriff: 01.10.2018).

WEG Bochum – WirtschaftsEntwicklungs-Gesellschaft Bochum mbH (2019a): Gründung & Wachstum, https://www.bochum-wirtschaft.de/unser-team/#gruendungs__betriebsberatung (letzter Zugriff: 15.10.2019).

WEG Bochum – WirtschaftsEntwicklungs-Gesellschaft Bochum mbH (2019b): Herzlich willkommen bei WERK X, <https://www.werk-x.ruhr/> (letzter Zugriff: 15.10.2019).

WEG Bochum – WirtschaftsEntwicklungs-Gesellschaft Bochum mbH (2019c): Gründungszentren, <https://www.bochum-wirtschaft.de/flaechen-objekte/gruendungszentren> (letzter Zugriff: 15.10.2019).

Wien Products (o. J.): Über uns, <https://www.wienproducts.at/ueber-uns/> (letzter Zugriff: 03.10.2019).

WiFö Bochum – Wirtschaftsförderung Bochum WiFö GmbH (2019): Senkrechtstarter. Der Wettbewerb für Gründer, <https://www.senkrechtstarter.de/wettbewerb/ueberblick/> (letzter Zugriff: 15.10.2019).

Zukunftswerkstatt (2013): Makerspaces – eine Bewegung erreicht Bibliotheken, <https://zukunftswerkstatt.wordpress.com/2013/11/29/makerspaces/> (letzter Zugriff: 03.10.2019).

8.3 List of interviews and conversations conducted

ID	Name	Institution	Contact	Type/Date
I 1	Thilo Brandel	Wittenstein bastian GmbH, Fellbach	Lise-Meitner Straße 10 70736 Fellbach https://alpha.wittenstein.de/de-de/unternehmen/	Conversation on 12.05.2017
I 2	Manuel Bornbaum	Hut & Stiel, Vienna	Naufahrtweg 14a 1220 Vienna http://www.hutundstiel.at/	Conversation on 19.06.2017
I 3	Albin Hahn und Thomas Gratzer	Joseph Manner & Comp AG, Vienna	Wilhelminenstraße 6 1170 Vienna http://www.manner.com/de	Conversation on 20.07.2017
I 4	Ann-Paulin Söbbeke	Hafenkäserei, Münster	Am Mittelhafen 20 48155 Münster https://hafenkaeserei.de	Lecture and discussion as part of the event ‚UnternehmerInnen erzählen: City Factories‘ in Bochum Wattenscheid on 21.02.2019
I 5	Henric Stönnner	Laserkatze, Aachen	Thomashofstraße 15 52070 Aachen https://laserkatze.de/	Lecture and discussion as part of the event ‚UnternehmerInnen erzählen: Craft and Tech‘ in Bochum Wattenscheid on 14.03.2019
I 6	Edith Koch	Gemein- schaftsladen SchnickSchnack	Markstraße 408 44795 Bochum https://www.facebook.com/schnickschnackbo	Lecture and discussion as part of the event ‚UnternehmerInnen erzäh len: Working from home‘ in Bochum Watten- scheid on 11.04.2019
I 7	Manuel Bornbaum	Hut & Stiel, Vienna	Naufahrtweg 14a 1220 Vienna http://www.hutundstiel.at/	Conversation on 11.09.2019
I 8	Veronika Stegmann	Haus der Eigenarbeit	Wörthstraße 42 41667 Munich https://www.hei-muenchen.de/	Interview on 04.06.2018
I 9	Hans von Bülöw	Handwerkerhof Ottensen	Bahrenfelder Straße 321 22765 Hamburg http://www.handwerkerhof-ottensen.de/	Interview conducted by Sascha Kullak on 23.03.2017



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Alejandra Castro,
Nicole Panitz and
Eva Wascher

The great challenge for our cities is to become more socially just, ecologically sustainable and at the same time, more productive under the conditions of globalisation. Urban production can provide answers to these challenges. Urban agriculture, urban manufactories and urban industry contribute to making city districts more attractive and opening up new economic perspectives. There are already numerous examples of successful urban planning implementations and established businesses in urban areas. Though, despite the positive examples, a wide range of measures are necessary for the comprehensive and targeted promotion of urban production in municipalities: In addition to preparatory analyses, a strategic orientation for the development of a productive city and the formation of a corresponding local political attitude, support measures for businesses and democratic participation of residents are required. A key success factor is the closer integration of economic development and urban development.