THEMES OF OSTRAVA'S SPATIAL DEVELOPMENT

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ABSTRACT: The paper focuses on individual topics of spatial development of Ostrava, which are based on the Themes of Ostrava's spatial development, prepared by the Municipal Studio of Spatial Planning and Architecture (MAPPA) in 2020 as its basic tool for city planning. The individual themes are linked to the twelve panels, which indicate general urban planning principles based on the analysis. The paper further develops these principles into individual themes and highlights the specificity and uniqueness of Ostrava. The goal is to verbalize the idea of the city with an accompanying schematic expression.

KEYWORDS: strategy; spatial development; Ostrava; planning; urbanism; spatial planning; strategic planning; city idea; quality of built environment

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INTRODUCTION

Spatial development issues are key to city planning. It is not important whether it is strategic or spatial planning. Both of these plans should include spatial development themes if they have the ambition to deliver the quality of the built environment. The themes are based on the existing form of the city, trends, developments and causes of the current form. At the same time, the themes have a close relationship with other cities and it is therefore appropriate to take inspiration from other cities to possibly set parameters or assessments for the implementation of spatial planning. [1] Ostrava has a relatively stable spatial plan compared to Czech cities, especially in terms of its degree of adaptability. [2] At the same time, it has a strategic plan that is relatively well evaluated due to the wide participation in its creation. [3] The spatial plan is a continuation of the urban concept of Ostrava, which was created in the 1970s and was slightly supplemented in the 1990s. In principle, therefore, it lacks a contemporary urban concept that would reflect the development themes of similarly sized cities. The strategic plan defines socio-economic objectives quite precisely and also contains a list of projects, often architectural, landscape and urban planning projects, which should lead to the fulfilment of the strategic plan's objectives. However, it does not include a benchmark between socio-economic objectives and specific projects. It is this scale that corresponds to the Spatial Development Themes for Ostrava.

THEMES OF OSTRAVA'S SPATIAL DEVELOPMENT

CARE FOR THE OLDEST PARTS

The oldest parts of towns tend to be the most important areas and help create a genia loci, a mental connection between the inhabitants and the town. It is by respecting the original historical layers and working with them in a meaningful way in the development of the city that we are able to complement them with contemporary requirements. [4]

Thanks to its industrial development, Ostrava does not have such a varied and layered development as historical cities. On the contrary, it has relatively small atomized parts of villages and colonies that are essentially unrelated. Although these historical layers are not particularly unique, they need to be approached sensitively. Not because they are endowed with extraordinary value within the Czech Republic as a whole, but because they aid identification with the town and its history.

The aim is not to prevent additions, but rather to be aware of the value of these areas and to be able to re-store and complement them. For existing public spaces and for new buildings, the rule is that they must respect character, scale, proportion and materiality. As the oldest historic districts are defined, it is possible to describe each of them in terms of public spaces as well as in terms of urban blocks and houses.

This topic is not important in terms of prioritising investment, but rather in terms of what characteristics specific designs for public spaces and buildings should meet, and therefore it is possible to define individual regulations to some extent on this basis. The stricter regulation for these areas can be explained by the importance of the area.

CREATING A MORE DIVERSE CITY

If we want to live in sufficiently resilient cities, one of the key features is a multifunctional urban fabric. This is characterised by a functional diversity that creates a more diverse city in which people can live, work and recreate, which is consistent with the contemporary 15-minute city approach. [5]

The development of Ostrava has been linked to the building of ever new districts, which have generally been built on greenfield sites and not so much on pressure to redevelop existing areas. This lack of historical layering in the individual areas results in monotonous areas where the architectural concept is evident, but which do not provide a sufficiently varied city.

It is necessary not to be afraid to enter boldly into originally planned and often valuable urban structures and to add new layers to meet the requirements of contemporary urban life.

The additions to existing housing estates are a typical manifestation of this. The aim is to support the urban fabric while complementing the missing functions (usually amenities, offices, non-disturbing manufacturing or alternative housing types) in the area.

By adding new layers to existing monofunctional areas, it is possible to use the existing area efficiently (without major investment and operating costs) without the need to extend the city into the landscape. At the same time, this can make individual areas much more attractive to their residents, as they will contain all the features important for living and living in the city.

INTEGRATION OF THE OLDEST PARTS

It is crucial for the city that its different parts are connected into a continuous and coherent whole with smooth transitions across different locations with different character. This coherence through public spaces reduces the demands on individual car traffic and also

helps to increase the vitality of public spaces by making them more comfortable to navigate on foot or by bicycle. [6]

Due to the historical development of Ostrava, it is quite often the case that individual Ostrava locations do not relate to each other and it is very complicated to connect them. The aim is to connect the oldest parts of the city towards the newer parts, especially within a compact urban structure. Primarily, this involves connecting public spaces and streets in particular. Secondarily, a structure of urban blocks should be created within which there will be a gradual transition between the different character areas.

Fig. 1.: Care for the oldest parts; Creating a more diverse city; Integration of the oldest parts. (Source: author, MAPPA p.o.)

This will be manifested by the ability to pass easily between different parts of the city without the pedestrian or cyclist moving through unattractive or even dangerous places. At the same time, the character of the development will transition smoothly between localities so that there are no stark contrasts between e.g. detached and semi-detached houses.

Smooth transitions in the pattern of development between existing sites rather than wide gaps increase the permeability and usability of the town for its residents.

CARE FOR URBAN ENSEMBLE

Not all of the area values in urban areas are protected by legislation, nor is it desirable that every part of the area be under conservation protection, but it is necessary to understand what parts of the city are valuable and how they help to co-create the image of the city. In the case of Ostrava, four urban conservation zones are identified in this way. At the same time, there are a number of original villages or several workers' colonies. Some parts have disappeared, but there are still elements that can still have an influence on the current image. There are also valuable modernist buildings with preserved and undisturbed concepts.

The aim is to take care of valuable urban ensembles and thus promote the identity of the post-industrial city. By working appropriately with these layers it is possible to develop and promote the local identity and attractiveness of the city.

Appropriate additions to original structures and reconstruction of public spaces can help to make places more attractive to residents and visitors. These are generally relatively stabilised areas that are not in good condition.

Within specific areas there are usually public spaces, whether squares, town squares, piazzas or various plazas, the reconstruction and restoration of which can also help the wider area by restoring the original attractiveness of these places and by restoring and complementing the urban fabric.

INCREASE THE VALUE OF THE CITY

The quality of public spaces is related to the architectural, urbanistic and artistic values within the city. It is one of the characteristics that helps to determine how attractive life in a city is. If cities are to remain relevant, it is essential that residents want to live in cities, not have to.

Ostrava has a relatively large number of public spaces and a smaller number of valuable places. The main centre of gravity is the historic centre of Moravian Ostrava, where there is probably a sufficient number of such valuable places.

The main emphasis on architectural and urban quality should be in those parts of the city that are more important in terms of population. It is therefore also important to be able to identify priority areas where it is appropriate to direct energy in the first phases so as to promote permeability through high quality public spaces, usually associated with important buildings and functions.

SUPPORT THE IMPORTANCE OF THE REGIONAL METROPOLIS

The regional metropolis forms the backdrop and key infrastructure for its immediate surroundings, which are made up of other towns and villages. To a large extent, the quality of the region is linked to the quality of the regional metropolis. [1]

Ostrava is undoubtedly the regional metropolis of the Moravian-Silesian Region and contains a number of unique features within the region. Nevertheless, due to its historical development, the position of the regional metropolis is less clear than in the case of Prague or Brno. At the same time, together with the Polish and Slovak parts, Ostrava is part of the region centred on Katowice. The aim is to promote the city as the centre of the region, which is attractive not only for its inhabitants but also for visitors and tourists.

It is not only about individual functions, but also about the relationship of the buildings to the public space. From this perspective, Ostrava is highly problematic, as many important places have very poor quality public spaces.

It is not just about the regional functions themselves, but also about making them stand out in terms of the quality of the architecture of the buildings and the public spaces that are connected to them. It is to these places that increased investment and funding for maintenance and operation should be directed.

Fig. 2.: Care for urban ensemble; Increase the value of the city; Support the importance of the regional metropolis (Source: author, MAPPA p.o.)

TURN THE CITY IN ON ITSELF

For Shrinking Cities, it is important that the compact urban structure is strengthened by sensible densification of existing built-up areas. This makes it possible to develop the city even though the population will decline slightly. Such development could be called positive stagnation. [7]

Ostrava's population is still slightly decreasing. Although this decline is not dramatic, it is deteriorating the efficiency of the city's operation, its vitality and attractiveness in the long term. Turning the city in on itself means that the city will be better able to manage its urbanized area and will not have to build and expand infrastructure outside the previously built-up area.

The goal is to create more compact parts of the city with clear buildable boundaries. This will limit the development of the surrounding landscape and make better use of brownfield localities and internal space reserves. All this improves the cohesion of the city. Three residential centres are defined within the proposal.

If the structure and boundaries of the residential centres continue to expand, then this will not only result in a less efficient area, but will also result in existing residents having less access to the surrounding countryside, placing greater demands on the green public spaces within the city's intracity and reducing the quality of life in the city.

Ostrava should not allow uncontrolled development outside residential centres, while at the same time encouraging land within residential centres to be used efficiently.

USE OF URBAN LAND RESERVES

One of the main theses of sustainable urban development is to use the free areas within the built-up area. This minimises spatial barriers while promoting the physical cohesion of the city. All of this has the effect of promoting a multifunctional urban structure, or a city of short distances. [8]

Ostrava contains a number of internal reserves, both within already defined urban blocks and large areas for which a more detailed plan is needed.

Within the framework of the proposal, areas are defined for which the urban structure is clear and the completion of part or the whole block can be clearly identified. At the same time, there are a number of areas in the territory for which it is necessary to have a more detailed plan that describes the urban structure of the territory, the form and significance of public spaces and the character of individual urban blocks.

The aim is to promote the use of the land within the city and therefore to prepare plans for the development of individual areas in such a way as to increase the physical cohesion of the city and to complete the
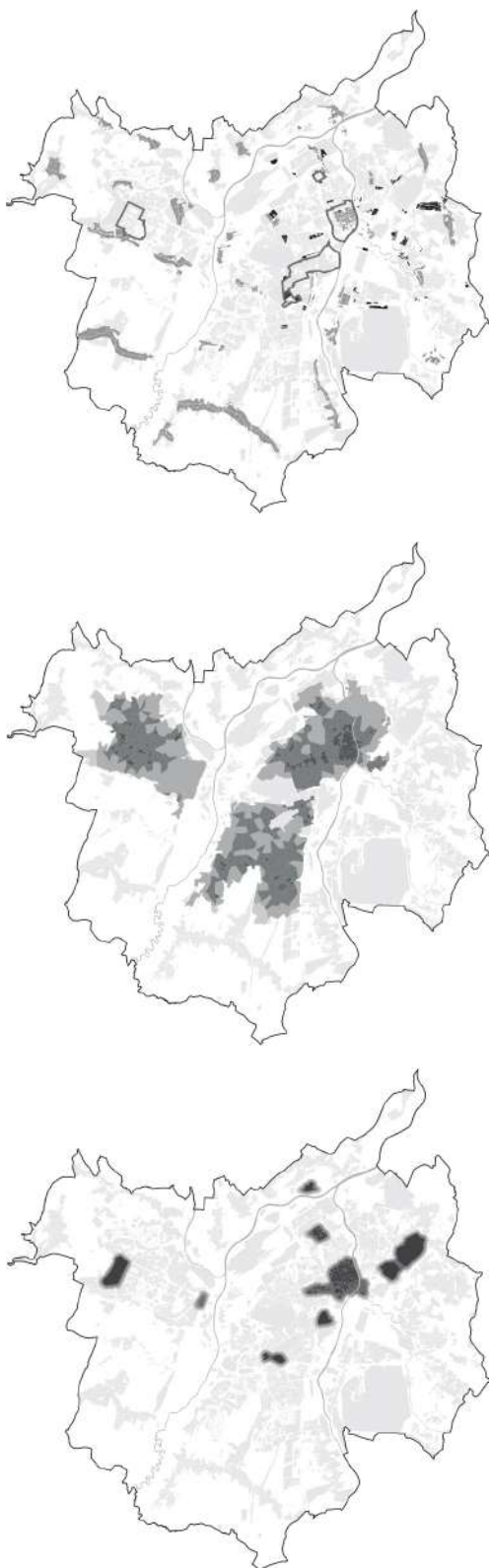
Fig. 2.: Care for urban ensemble; Increase the value of the city; Support the importance of the regional metropolis. (Source: author, MAPPA p.o.)

appropriate urban structure. Great emphasis will be placed on the elimination of individual barriers in the form of traffic routes.

USE EXISTING INDUSTRIAL SITES

The use of brownfields is one of the problems of urban development. These are areas that have been degraded by human activity and are often areas whose future use is very challenging in terms of remediation of environmental burdens. At the same time, it is an area in close proximity to existing buildings and therefore directly offers new use and development [9].

Ostrava, as a post-industrial city, has a number of large brownfield sites spread over a large part of the terri-
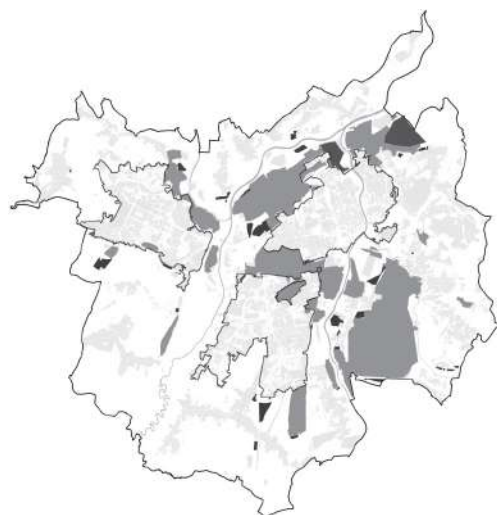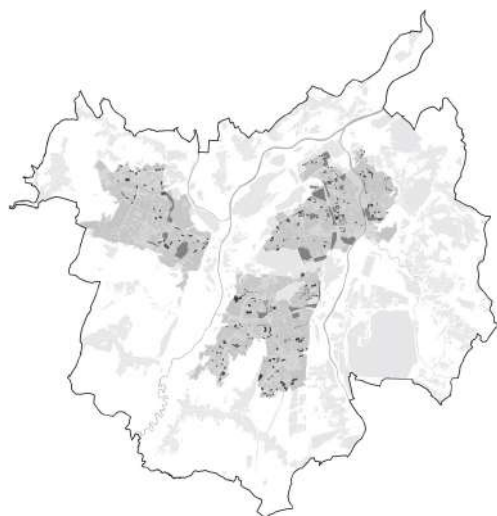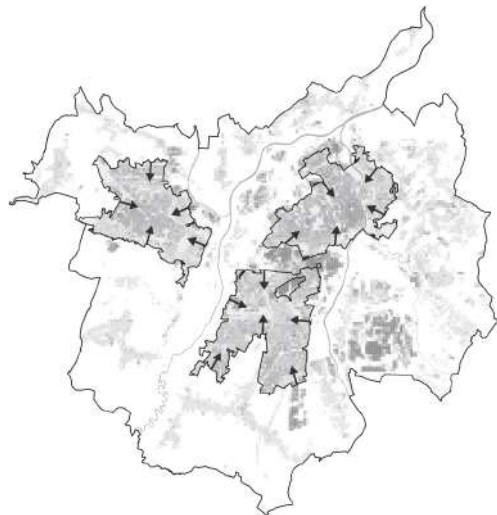
Fig. 3.: Turn the city in on itself; Use of urban land reserves; Use existing industrial sites. (Source: author, MAPPA p.o.)

tory.

The aim is to define to what extent the existing industrial sites should be integrated into the urban structure of the city and to what extent it is more appropriate to return them to the surrounding landscape and use them for, for example, recreational or ecological services.

The main task is to have plans for individual brownfield sites and not to allow uncontrolled development in these parts that could have negative consequences for the future shape of these areas, especially so that they do not continue to be a burden on their surroundings. It is the design of the specific form of future use that can lead to the creation of an agreement between the municipality, the city districts and private owners or infrastructure managers.

ENHANCE THE QUALITY OF RIVERS AND THEIR SURROUNDINGS

Rivers and their surroundings are the most attractive places in cities, because they also change the urban space, which usually acquires a different scale, dominated by the dynamics of the river. This has not always been the case. Quite commonly, cities have turned away from rivers. [10]

There are four important rivers with three confluences in Ostrava. In most cases, the river does not pass through and adjoin urbanised areas, but often touches industrial areas. A very specific feature of Ostrava and a demonstration of the city's lack of respect for rivers and their confluences is that all the confluences are crossed by large transport structures.

From the point of view of development and accessibility of the rivers and their surroundings, it is important what use the localities adjacent to the riverbanks have. Only a very small part of the Ostravice River from the confluence with the Lučina towards the Odra has the potential to create an urban waterfront. In other cases, the potential of the rivers and their surroundings is rather landscape. The southern part of Poodří, which is connected to the protected landscape area, is exceptional in this respect. Most of the solutions in the Ostrava area should be close to nature, with meandering riverbeds slowing down the flow of water.

The aim is that the localities around the rivers should be highly permeable and provide a good link between the river and the city. Localities around rivers will be located for landscape or residential use and will eliminate productive uses that generally degrade the river and immediate surroundings. The primary goal is to return the river to its natural character, possibly a stone embankment.

CARE FOR THE DIVERSITY OF THE LANDSCAPE

Especially due to the collectivisation of agriculture, the Czech landscape lost its diversity and small scale. Since the Baroque period, people have been trying to make the surrounding countryside more accessible and have made demands on it not only in terms of agriculture and farming, but also in terms of residence. These are reflected in the creation of more attractive places in close proximity to urbanised areas. [10]

There is a relatively large number of different types of landscape in the territory of Ostrava, whether it is close to nature, economic and agricultural and post-industrial landscape.

Although Ostrava is a very green city, it is often a green space that is neglected and polluted. The emphasis should be on gradually improving the suburban landscape. At the same time, it is crucial to increase the diversity of the landscape, to strengthen microdiversity, to increase the ecological stability of the landscape and

thus its attractiveness for the inhabitants.

The challenge is to make post-industrial landscape localities more accessible and attractive, respecting both natural and anthropogenic components and promoting landscape composition. In the case of economic landscapes, to enhance permeability and reduce the scale of individual areas to make the economic landscape more welcoming and residential. In addition, create more space for nature-friendly solutions around rivers and return water to the landscape.

CARE FOR THE POST-INDUSTRIAL LANDSCAPE
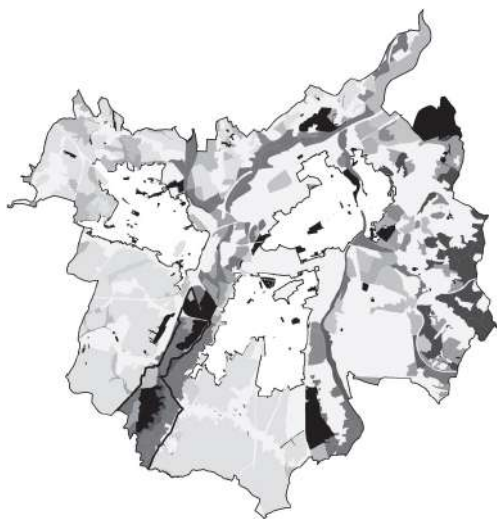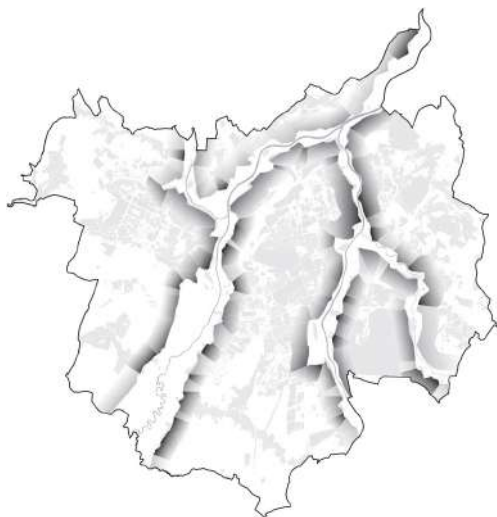
For most cities, the landscape is something unchang-

ing, because in our conditions cities have tended to adapt to their natural framework. An exception to this approach are cities affected by mining, where the landscape has been very significantly altered by humans over the last 200 years. However, this has given rise to completely different biological types and allowed unique places to emerge. [11]

A large part of Ostrava has been affected by mining and undermining, which has significantly changed the landscape character.

The main goal is to reclaim the post-industrial landscape and find new nature-friendly uses. So that this anthropogenic human intervention on the landscape helps to create unique places and sites that can support the diversity of the landscape. The challenge is to preserve and make accessible the heaps as local landscape features. To further connect the post-industrial landscape into a single system and to ensure the biological uniqueness of these areas through managed succession.

By creating the conditions for individual heaps to be gradually transformed and made accessible as landscape features that can take on a different character. In particular, the Ema heap and the Trojické valley, which are located in close proximity to the historic centre, are key in this respect.

CONNECTING THE GREEN AXES

Within the city and its surroundings, we can find a number of unique parks or suburban landscapes whose quality is not in themselves, but in how they are interconnected. If these green spaces are linked into a single system that is accessible to the city's residents, the use of each area increases and therefore indirectly increases the quality of life in the city. [12]

The aim is to design a system and hierarchy of green axes, from the main ones around rivers to the landscape green axes around residential centres to the fine tissue that connects individual green public spaces within urbanised areas to each other and to the surrounding landscape.

The first task is to reinforce the nature-like character of the rivers' surroundings. The second task is to connect green axes in relation to residential centres. The third task is the individual green public spaces themselves within the built-up areas.

It is important to enhance the quality and importance of existing green public spaces and especially parks. To improve the suburban landscape in the form of urban parks and woodland parks. Strengthen links between green spaces within the city. Ensure good accessibility of green spaces in the suburban landscape for residents, whether for short, medium or long term recreation. At the same time, create suitable conditions for the migration of animals and plants.

DEVELOP BLUE-GREEN INFRASTRUCTURE

If we want to ensure adequate conditions for the life of the inhabitants in the city, it is necessary to reflect contemporary approaches leading to water retention in the landscape, which results in a higher quality of greenery and microclimate. Minimising heat islands and ensuring the availability of sufficiently large green spaces in urbanised areas is a major issue. [12]

Ostrava has a huge potential in terms of landscape accessibility due to its zoning. Nevertheless, there are heat islands in both built-up and unbuilt-up areas.

From the point of view of the quality of life in the city, the availability of sufficiently large green public spaces

Fig. 3.: Turn the city in on itself; Use of urban land reserves; Use existing industrial sites. (Source: author, MAPPA p.o.)

from the place of residence is important. This is particularly enhanced in more compact and dense developments, but where maintenance may be more intensive and thus have a greater ability to withstand more visitors. A second important consideration is that trees and stormwater detention measures should be part of every public space. The final task is to minimize heat islands in agricultural areas so that economic use is not diminished. Thus, there is a need for more subdivision of agricultural areas into logical units.

CARE FOR THE URBAN-RURAL BOUNDARIES

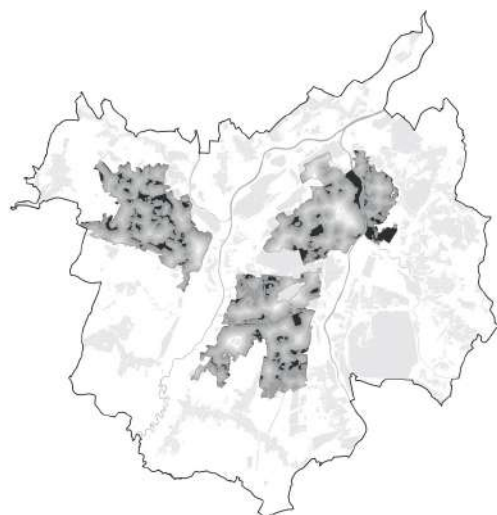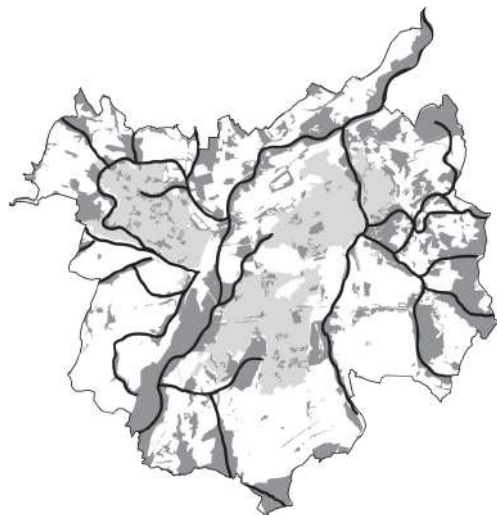An important issue in terms of the quality of the built environment is the boundary between the city and the landscape. This boundary has historically been very clearly articulated, but over time it has lost its significance and become blurred. With this, the link between the city and the landscape began to diminish. This boundary both helps to identify clear urban figures that are important in terms of a shared image of the city, but also has its own significance in terms of identifying individual places. [13]

Some parts of Ostrava have a boundary between the settlement and the landscape defined by impenetrable transport structures or industrial estates. Thus, although Ostrava is essentially green there are a number of areas that are on the edge of the buildable area and yet do not have good accessibility with the suburban landscape.

The aim is to increase the permeability of the boundary between the city and the countryside, whether the area has natural or productive uses. Further, to eliminate productive uses at the urban-rural interface and to enhance landscape character.

There is great potential to build urban parks or woodland parks at the interface between the city and the landscape, which will include residential functions and at the same time eliminate the negative impacts of production zones or transport structures, which in many cases create a boundary between the city and the landscape.

DEVELOPMENT ACCORDING TO THE CHARACTER OF THE LOCALITY

Cities take many forms. These forms can best be identified through the character of the localities, which describes not only the functional use of the area as it is today in the zoning plans, but more broadly the overall built environment of the city. Development by destination character allows the city to be divided into localities, which is one of the traditional tools of urban planning that allows each logical district to be treated with a unique character, promoting diversity while maintaining the linkages between districts. [14]

In terms of the character of its localities, Ostrava is a typical post-industrial city with many industrial estates, modernist housing estates and garden cities. Only a small part of it forms a compact city or historic core.

The aim is to be able to identify the character of individual localities and enable their development while not preventing the addition of individual buildings. By using the character of the localities, it is easy to identify how new development can be added to the area and also to determine what specific public spaces should look like. All of this allows for easy identification with different parts of the city.

It is important to add new houses to stable localities and to create public spaces that support the overall character of the localities.

ENLARGE COMPACT CITY

From the point of view of the sustainability of urban development, the key is how much of the urban structure is of a compact city character. The compact city is not only an economically and operationally sustainable model, but it is also the character of localities that allows the greatest degree of social interaction in the city and creates intelligible public spaces of appropriate size.

Ostrava has a very low proportion of compact districts, even if we include, for example, some of the Sorel housing estates. However, even these compact parts suffer from a number of gaps and the need to add new

Fig. 5.: Connecting the green axes; Develop blue-green infrastructure; Care for the urban-rural boundaries. (Source: author, MAPPA p.o.)

buildings. [6]

It is important to promote the use of individual gaps within existing localities. Furthermore, it is important to transform existing localities that do not have the character of a compact city and to transform them, especially for those localities that are lower in terms of attractiveness and quality of the built environment.

ENHANCE THE STABILITY OF LOCALITIES

From a city planning perspective, it is important to be able to identify which localities are stabilized and can be easily entered by specific building or public space projects. It is equally important to know which local-
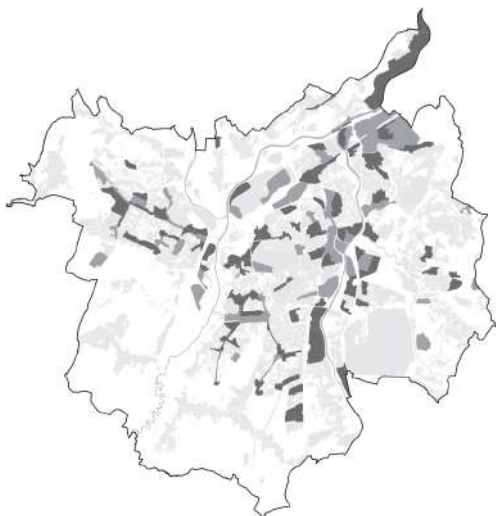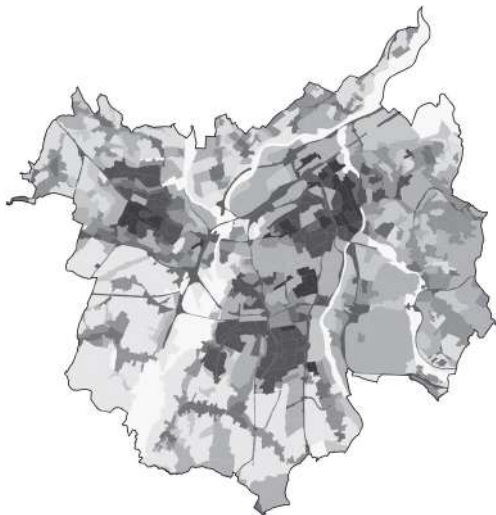
ities are not stable.

In Ostrava there are a large number of transformation and development localities located within and around residential centres. From the point of view of urban development, those localities that are located inside urban centres and create spatial barriers between different parts of the city are more important.

It is important to prepare a long-term urban plan for the development and transformation of these localities. However, individual non-conceptual interventions in transformation and development localities are a major problem.

The aim is to work proactively with regulatory plans and land-use studies for transformation and development localities to avoid inappropriate placement of individual buildings in large areas, which could result in complicated future developments.

ENHANCE THE QUALITY OF CITYWIDE FOCAL POINTS

Within the citywide system, it is important to care for those individual places, public spaces and buildings that are particularly important to the functioning of the city as a whole or the wider region. [15]

A specific feature of Ostrava is the relationship of citywide focal points to individual residential centres. Whether it is in terms of the number of focal points, which is the largest within Moravian Ostrava, or in terms of their distribution within residential centres, their connectivity or their uses and functions.

It is important not only to take care of individual focal points, but also to perceive that they are part of a continuous network. It is appropriate to look for the uniqueness of individual places and the way in which they can complement their surroundings. As individual places are strengthened there will be more pressure to strengthen each other.

Ostrava has a relatively large number of such places, but they lack energy and vitality. It is therefore important to strengthen the focal points and increase their quality and attractiveness. Only in exceptional cases is it advisable to expand these places with new ones, because otherwise we lose energy in the form of the number of people who visit and use each place.

The primary objective is to improve existing places and to seek their maximum potential in the significance of the city and in the significance of the other places that link to them.

CARE FOR LOCAL FOCAL POINTS

Local focal points represent places in the fabric of the city that are closely related to individual localities. These are mainly places that residents visit in the normal course of their daily lives. [15]

As the population of Ostrava is declining and the social composition of the population in some parts of the city is changing, so is the demand for local focal points. These are sufficient especially in housing estates. Sometimes even to the extent that existing focal points are declining. At the same time, there is a shortage of such sites in the peri-urban area.

We know where the number of localised focal points is adequate and it is more appropriate to add new features, whether they are buildings or public spaces. At the same time, we can see those locations where the number of hotspots is insufficient.

The positive impact of the strategy should be that individual local focal points will be sufficiently attrac-

Fig. 6:. Development according to the character of the locality; Enlarge compact city; Enhance the stability of localities. (Source: author, MAPPA p.o.)

tive and visited, thus promoting social interaction and strengthening local communities. At the same time, adequate local focal points will be created in places where they do not exist.

The lack or absence of local hotspots is a symptom of poor planning, as residents move within the statutory city or within the region, weakening those local focal points that were previously functioning.

FOCUS ON DECLINING FOCAL POINTS

The decline of already established local or citywide focal points has a major impact on the declining quality of life in the city and the creation of nuisance or haz-
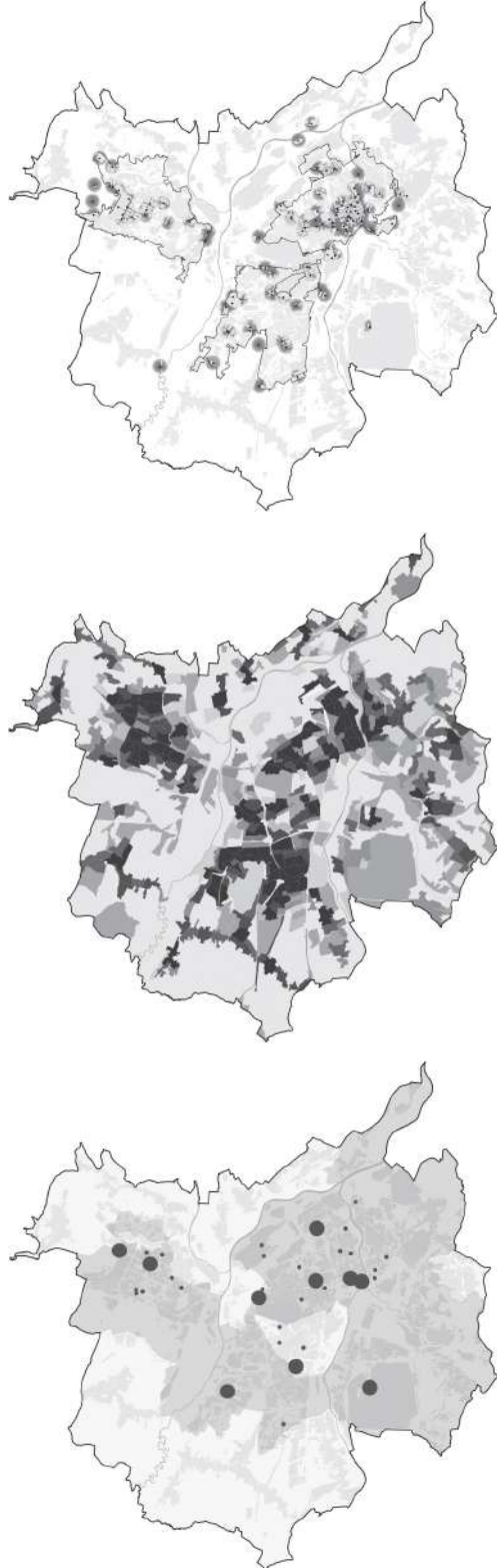
ardous areas. [15]

In the case of Ostrava, this trend is also related to the fact that the number of inhabitants and thus the number of users of individual focal points is decreasing.

The aim is undoubtedly to prevent the creation of such sites. These are especially places with amenities that are unoccupied for a long time and that degrade their immediate surroundings.

It is necessary to correctly identify individual focal points and to respond adequately to their possible decline. Properly determine whether to close the focal point or whether redevelopment is possible. It is not always necessary to attempt to correct declining foci, especially if there are similar foci in the vicinity that have replaced the original ones.

RULES OF CONSTRUCTION ACCORDING TO THE CHARACTERISTICS OF THE LOCALITY

It is important for planning and new development in the city to respect the character of individual localities. Since the last century, we have been planning the city more by function than by character. This has led to situations where buildings are created which, although similar in function, still interfere with each other. [16] Ostrava is very specific in that it has a very small part of a historic or compact city. On the contrary, a very significant part of the territory is made up of modernist and garden city. Both characters have dominated the development of the city since the industrial revolution. Other development characters have been suppressed. Ostrava urgently needs a greater degree of compact urban development. This may be in the construction of new sites or additions, but it is also necessary to apply these principles to existing sites, particularly in the case of the modernist city, but also in some cases the garden city, which needs to have places in its structure that will be the centre of gravity for the wider area.

In urban design, care should be taken to ensure that reasonably compact developments with sufficient density are created.

Character should determine the conditions for development, whether in the form of more intensive compact urban fabric in the form of housing with commercial partners or, for example, in the case of the Garden City, the use of terraced houses, semi-detached or terraced houses in front of detached houses with large gardens.

DEFINE RULES FOR PUBLIC SPACE

By using the character of the localities, it is possible to determine very well, in addition to the rules for urban blocks, also the requirements for individual public spaces so that their facilities and appearance correspond to the wider area. In addition to public spaces such as squares and parks, emphasis should also be placed on the transformation of streets.

A large part of the public spaces in the individual residential centres of Ostrava is made up of street spaces, but these do not include streets in their complexity, i.e. public spaces where all modes of transport are equally represented and which contain an appropriate level of tree planting. Wide carriageways are far more common, but are a barrier to permeability through the area.

Emphasis should be placed on building streets rather than roads in the city. This translates into ensuring that the main and most important streets in the city and in individual residential centres include adequate space for public transport and, in particular, sufficient space for trees, pavements and cycle paths in addition to the

Fig. 7:. Enhance the quality of citywide focal points; Care for local focal points; Focus on declining focal points. (Source: author, MAPPA p.o.)

carriageway.

The key streets in this respect are those that connect the residential centres to each other.

INCREASE URBAN PERMEABILITY

The urban permeability is one of the important parameters, because how different types of movement around the city are used and how much it is possible to use public spaces that are not in close proximity to the residence.
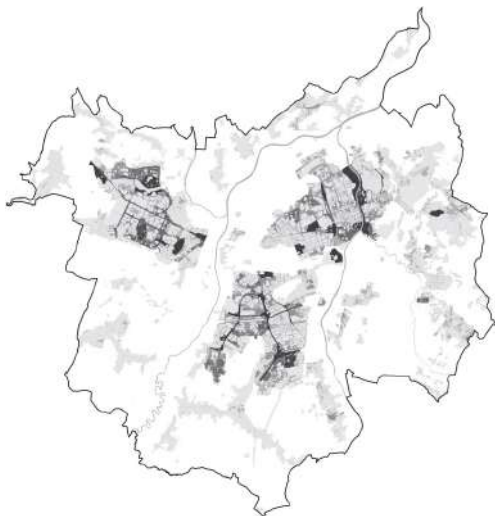

Fig. 8.: Rules of construction according to the characteristics of the locality; Define rules for public space; Increase urban permeability. (Source: author, MAPPA p.o.)

Ostrava is plagued by two extremes here. Firstly, it has a relatively large number of industrial estates that are too large and impenetrable. These complexes degrade their immediate surroundings by reducing the number of residents and users who could use the public spaces. At the other extreme are large-scale modernist housing estates which allow an extremely high degree of permeability but at the same time offer no semi-private or private spaces for residents. This also largely degrades their immediate surroundings.

The main public spaces such as squares, waterfronts, parks and streets need to be properly identified. In those places where large urban blocks are being created, it is advisable to complement these blocks with solutions that provide secondary permeability for pedestrians and cyclists.

The aim is to segment those areas that are too large, impenetrable and prevent the connection of existing and functioning parts. At the same time, it is appropriate to use existing courtyard blocks for semi-private or private purposes as long as the permeability of the area is not reduced.

ENHANCE THE QUALITY OF PUBLIC SPACES

In today's society, the quality of public spaces is one of the key aspects of the quality of a city and one of the reasons to live in a city. This is why the design of public spaces that would deliver the quality of the built environment is increasingly mentioned. [17]

Ostrava has a large proportion of public spaces due to its historical development. At the same time, these public spaces are not used enough to be sufficiently cared for.

The aim is to concentrate on those places that are already in a position to be used today, given the size of Ostrava and the intensity of use. In other words, there are sufficient functions, good transport accessibility and a sufficient number of people living there.

In the long term, there is a need to reduce the proportion of public spaces and increase the proportion of private and semi-private courtyards. Furthermore, it is important for Ostrava to take into account whether these are public spaces that already have all the prerequisites to be actively used today or whether they are public spaces that are of lower importance for the city and a less demanding solution is more appropriate.

The challenge is to systematically improve the quality of public spaces that will build on each other. This will also increase the sustainable mobility and attractiveness of the city.

ELIMINATE BARRIERS IN PUBLIC SPACES

Over the past century, a number of spatial barriers have been created that impede the natural permeability of the city and require various, often very complicated solutions that degrade individual places and the wider environment. [17]

In the case of Ostrava, these barriers are mostly traffic roads and partly also industrial complexes.

The aim is to turn selected roads into urban streets. Those that are not possible for various reasons must be adapted so that they do not continue to degrade their immediate surroundings.

This can be achieved both by completing the streets and, in particular, by arranging the street profile itself to accommodate wide pavements, cycle paths, tree planting and space for public transport. Alternatively,

large transport structures (expressways and railways) need to be bridged out of alignment in such a way as to avoid the creation of complex footbridges or ramps with stairways, which are not attractive to residents and are generally avoided.

TARGET UNSTABLE PUBLIC SPACES

Stable public spaces can be identified and correctly typologically classified, determining their importance and character. The transformation is therefore related to the reconstruction of the public space itself. In the case of unstable public spaces or areas, the transformation is more complex because it is related to the changing structure or layout of the streets.

Fig. 9.: Enhance the quality of public spaces; Eliminate barriers in public spaces; Target unstable public spaces. (Source: author, MAPPA p.o.)

In the majority of cases, the unstable public spaces in Ostrava include large traffic roads and their immediate surroundings. This applies less to development and transformation areas.

The aim is to have plans for the completion of individual areas and to define where individual public spaces should be directed. Where appropriate, whether there is an appropriate amount of them in relation to their immediate surroundings. The second objective is to turn the roads and their immediate surroundings into normal streets.

Plans will be created for the area, whether it is linear buildings and their surroundings or development and transformation areas with specific conditions for new construction in the city's intracity. For both of these plans, emphasis will be placed on ensuring that there is sufficient public open space.

ENCOURAGE FAST TRANSIT

Expressways are important within the city and especially for its connection to the region. However, if these roads pass through the city's intracity area, they can have a very negative impact on the whole of their immediate surroundings.

Ostrava, unlike other historically growing cities, has a significantly different transport system. It is based on three tangents: motorway, Rudná, Místecká. Two of them pass through residential centres.

The aim is to define that these tangents are primary for expressways and do not serve other modes of transport. At the same time, if these roads pass through a residential centre, it is necessary to design solutions for them that will not degrade the immediate surroundings or limit the traffic function.

An important aspect is that we will not require other streets to be expressways and will accept that they are part of the urban street network. Within residential centres, these roads will be underground or elevated. The main tasks are to complete the construction of Místecká and to integrate the building into the fabric of the city in order to create an attractive public space on its roof. It is also necessary to prepare a plan for the transformation of Rudná, which today represents a significant limit to its surroundings and at the same time does not allow for efficient traffic on the expressway.

CULTIVATE THE AVENUES

The city's avenues are important streets that co-create the city's fabric and provide key permeability through the area. In addition, they contain public transport and also contain key services and commercial parterres in their immediate vicinity. [16]

Due to the division of Ostrava into three residential centres, the urban streets that connect these residential centres are important. In the case of Ostrava, major public transport routes and important amenities are key to defining them.

The very naming of the three main urban avenues that connect the residential centres is important. These urban avenues need to be transformed into full-fledged streets that are expected to provide more than just space for individual car traffic.

In addition to car traffic and tram traffic, all of these urban avenues will allow for the smooth movement of pedestrians and cyclists, either longitudinally or laterally.

ENCOURAGE RAIL TRANSPORT

Rail transport is regaining an important role in urban development. With fluctuations, this has been happening since the inception of the railways, when it determined how urban development was accelerated. It is therefore relevant to believe that rail will continue to be important in this respect in the future. [18]

Ostrava is located at the intersection of four lines that enter the city at different points and are, moreover, linked together in a circle. The main advantage of this solution is that it allows connecting different parts of Ostrava with the wider region without the need to use public transport.
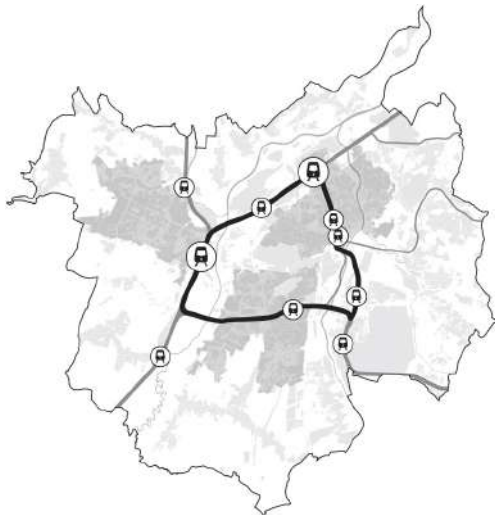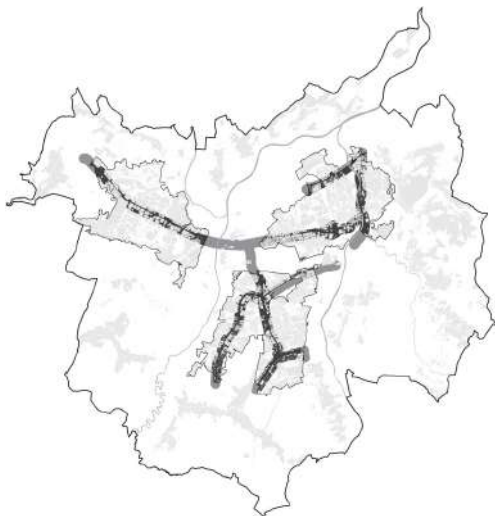
The aim is to complete the railway circuit so that trains can pass through in different ways. It is also advisable to add new stops so that they are easily accessible within the immediate area and thus become attractive and interesting places for future development.

Infill will be seen as new stops are created around which new structures will be created to better integrate them into the existing fabric of the city.

CREATE CALM ZONES

Increasingly, the principle of calm zones, superblocks, short-distance cities, school zones or zones 30 is being emphasised in urban development. The aim is a more varied and multifunctional design of street spaces, although there is no restriction of movement around the city. [19]

Ostrava has no relevant limits why this principle cannot be applied. At the same time, it has very small parts of the territory where building solutions are implemented that do not allow cars to travel at higher speeds.

The aim is to build calm zones with a maximum speed of 30 km/h, which allow creating higher quality public spaces and building relevant alternatives for other types of movement in the city.

For these areas, a system of one-way lanes for cars will often be applied, which will allow sufficiently wide sidewalks, two-way lanes for cyclists, or sufficient space for parking and tree lines to be created. Raised intersection areas will be implemented on these streets to emphasize that the pedestrian is the priority in these areas.

STRENGTHEN CYCLING INFRASTRUCTURE

In cities that are attractive to their inhabitants, cycling is a relevant way of getting around the city. Key in this respect is a network of safe cycle lanes on streets where cars travel at around 50 km/h.

Ostrava today has a fairly robust cycling infrastructure, especially for recreational and sporting purposes, and in some cases we can already find the beginnings of cycling.

The key is to identify the main city avenues and major streets where higher traffic volumes and car speeds of around 50 km/h are expected. In such streets, it is necessary to build a separate cycling infrastructure that takes place primarily in the associated space outside the roadway.

In this case, construction may also take place by placing cycling infrastructure in existing street spaces, but is more likely to involve comprehensive street reconstruction.

The primary challenge is to get bicycle infrastructure into any comprehensive street reconstruction, which is typically associated with technical infrastructure reconstruction. This will be manifested not only by space for cyclists, but also by creating space for trees and blue-green infrastructure to separate the main traffic area from the associated one.

ENHANCE PUBLIC TRANSPORT

In addition to cycling and walking, sustainable modes of transport include public transport. A sufficiently dense network with a higher frequency of connections, linked to sufficient density of development and population, is important for this. [5]

Fig. 10.: Encourage fast transit; Cultivate the avenues; Encourage rail transport. (Source: author, MAPPA p.o.)

Ostrava has a relatively dense network of tram lines, bus and trolleybus lines. A major deficit in terms of tram routes is especially in the connection of the 7th and 8th Poruba districts with the rest of the city. Furthermore, the lack of a second connection between the DOV and the centre of Moravská Ostrava is problematic, resulting in the creation of a single nodal point in the form of the Frýdlant bridges.

The primary task is to support the construction in the vicinity of the already functioning public transport, thanks to which it is possible to expect an increasing intensity of line traffic and thus increasing the attrac-

Fig. 11.: Create calm zones; Strengthen cycling infrastructure; Enhance public transport. (Source: author, MAPPA p.o.)

tiveness of public transport without the need to expand this infrastructure. The second round is to build some tram lines to serve the existing area.

THE EFFICIENCY OF TECHNICAL INFRASTRUCTURE

An important aspect that must not be forgotten when planning and operating a city is the efficiency of the technical infrastructure, which is largely related to the structure of the built-up area and the density of the population. The more efficient a city's technical infrastructure is, the more room it will have to implement quality buildings and public spaces. [5]

In this respect, Ostrava has a very sparse built-up area and therefore relatively high operating costs, so it is important to use existing gaps and undeveloped and unused urban blocks, which will help to increase the efficiency of the existing infrastructure.

Greater efficiency will enable the implementation of those projects that improve the quality of the built environment and urban life. For this purpose it is important to define new development areas adequately and to use and complete existing residential centres efficiently with good access to technical infrastructure.

SPINAL TECHNICAL INFRASTRUCTURE

The spine infrastructure shows where the key routes are to connect existing sites to sewerage, water, electricity and gas. These spine infrastructures and an assessment of their capacities are key in the case of completing existing sites and for connecting new sites. [5]

In the case of Ostrava, the geographical centre of the city with the Třebovice power plant and the Novovice water plant becomes the hub. Other networks already have a structure skewed, for example, towards the wastewater treatment plant. It is worth mentioning the absence of backbone routes in the eastern part of the city.

The spine networks can be assumed to make it easier to connect new locations to sufficient capacity sources and thus not to trigger the need to rebuild existing networks. Unfortunately, the current analytical documents only work to a limited extent with the use of backbone routes, which results in complications for use in the context of the city. We know that the networks run through the area, but we do not know how much more we can "load" them by connecting new development without having to reinforce them.

POOLING OF TECHNICAL INFRASTRUCTURE NETWORKS

A major problem in reconstructing streets, but also in creating new developments, is how unsystematically the networks have historically been placed. For these reasons, complex reconstructions are necessary because they allow for changes in the surface layout as well as the possibility of bundling networks and, exceptionally, the construction of collectors. [16]

Ostrava today makes only limited use of existing collectors. Far more often, networks are uncoordinately placed within individual public spaces.

It is important to know the areas that today are facing lifetime or capacity limits and will need to be reconstructed. This will trigger an intervention in the street space and it is possible to further investigate a more appropriate layout of the networks in the street pro-
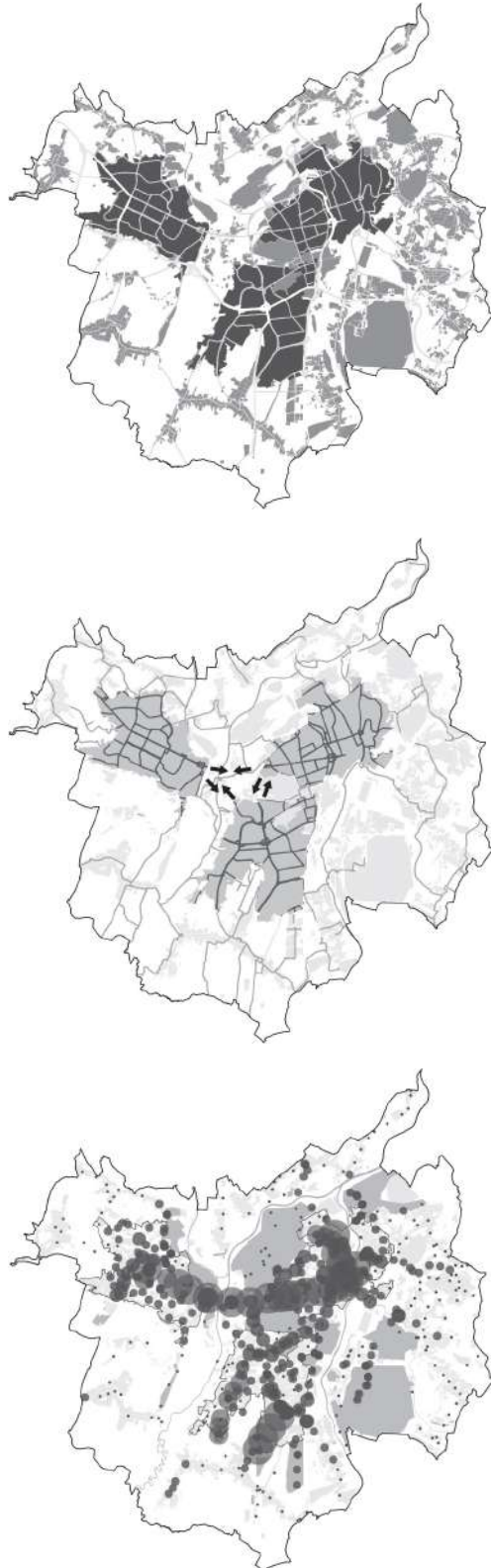
file, while possibly adjusting the capacity to match future developments.

The aim is to encourage combined technical infrastructure routes which create scope for a more appropriate street layout as it is not possible to continually extend the width of the street space.

CONCLUSION

The paper maps the intended topics of spatial development of Ostrava. These are based on the use of information about the city, which makes it possible to eliminate the subjective evaluation of the individual. [20] A generally shared picture of the built environment should help avoid potential mistakes in key areas or projects. At the same time, we can place more emphasis on the quality of individual projects, whether they are buildings or public spaces.

Spatial development themes can provide arguments and justifications for individual projects at the pre-design stage. The aim should be to identify the importance of the project in the city system. Investment in a particular project will have the greatest possible impact on the functioning of the neighborhood and the appearance of a particular place.

The spatial development of the city should aim to provide a shared picture of the possible future development of the city and, in particular, should show a strategy for how to get there. The aim is also to avoid disagreements on individual projects and to declare demands and requirements for specific projects or sites in a timely manner. This should have a positive impact on creating clear and understandable rules for developers.

It would be interesting to compare the spatial development issues of Ostrava with other cities or to generalise them and reflect them in the requirements for spatial and strategic planning.

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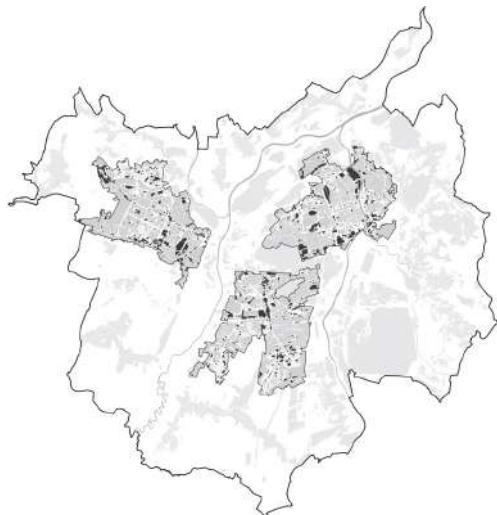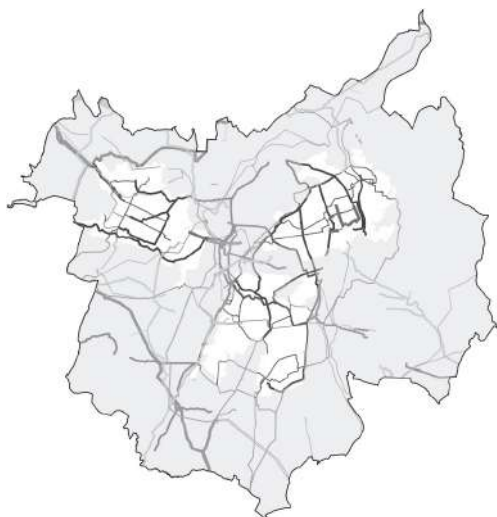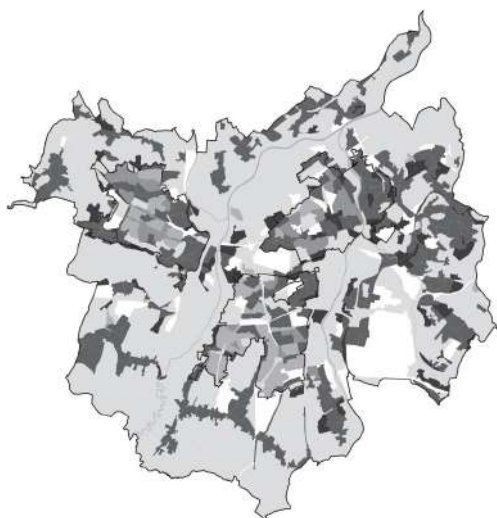
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