

## 4. Sustainable Land Use

Refer to Section 2.4 of the Guidance Note

### 4A. Present Situation

**Land use within the city (this will provide important background information on the character of the city and is not an evaluation criterion itself)**

Land Use Data	Inner City	Overall City	Unit	Year of Data Provided
Public Green Area	7.97	32.65	%	2014
Private Green Area <sup>1</sup>	N/A			
(Urban) Agricultural Land	0.0049	19.07		
Blue	0.35	3.32		
Residential	59.11	17.95		
Industrial/Economic	15.26	11.09		
Mixed*	0.73	7.2		
Brownfield**	0	0.95		
Other***	16.59	7.77		
<b>Total</b>	<b>100</b>	<b>100</b>		
Population Data	Inner City	Overall City	Unit	Year of Data Provided
Population density in built-up areas (city area minus green and blue)	67.7	8.64	Inhabitants per ha	2014
Population density (inhabitants per hectare) for new developments	0.05	0.15	Inhabitants per ha	2014
Percentage of people living within 300 m of green urban areas of any size	75.30	90.35	%	2014
Percentage of people living within 300 m of green urban areas of >5000 m <sup>2</sup>	69.94	88.25	%	2014

\*Please specify the land use types within the 'mixed land'

\*\*See guidance note for clarification

\*\*\*Please specify 'other'

<sup>1</sup> Data on the split between public/private ownership is not available. However, **99% of Ostrava's main green areas are accessible to the public.**

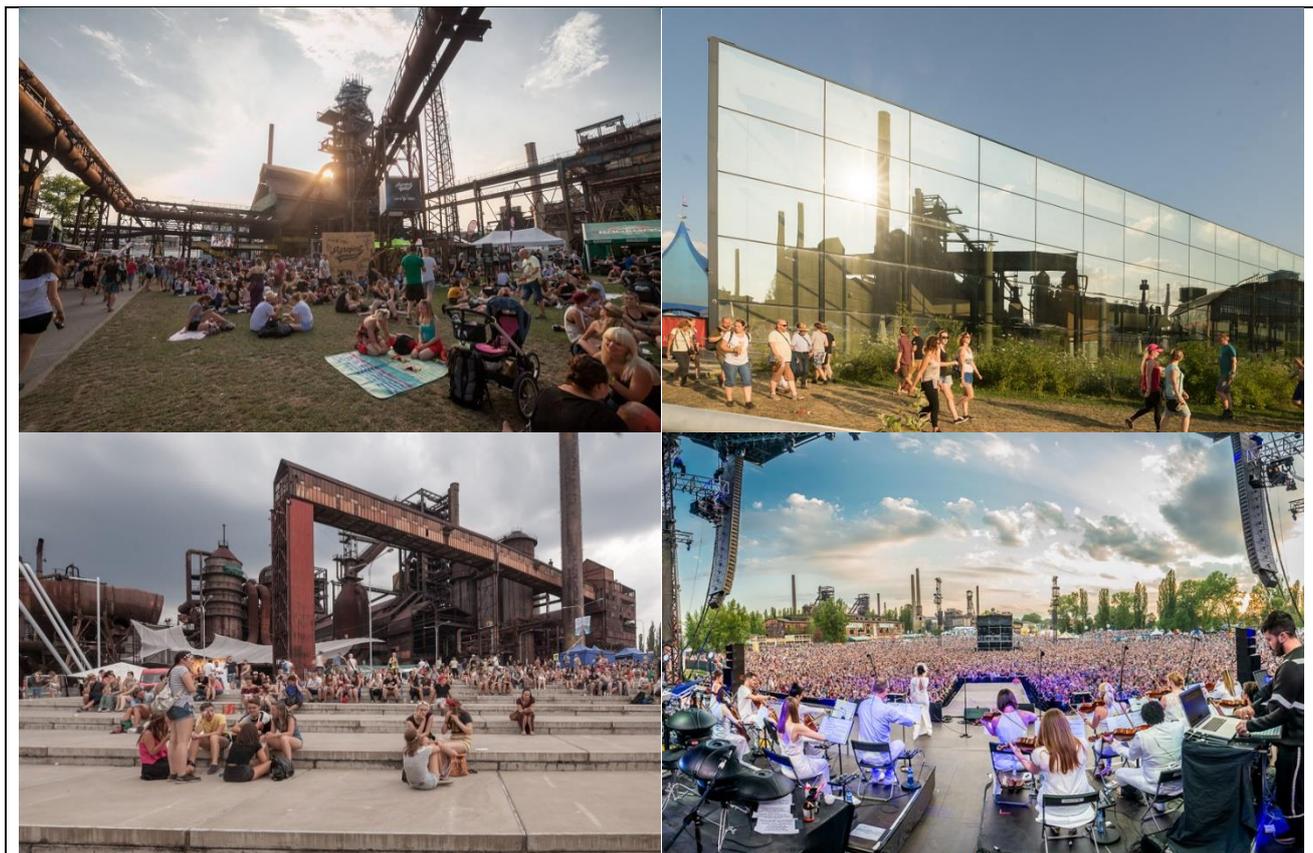


Image 1: Revitalized brownfield of Lower Vitkovice

Ostrava is exceptional in several respects:

- Over 90% of Ostrava inhabitants live less than 300 metres from at least one type of green area (a park etc.)
- The city's industrial heritage sites (brownfields) are being integrated into the urban fabric, creating unique and attractive new spaces that are being revitalized and repurposed.

Ostrava has a total 1 778 464 m<sup>2</sup> of green areas and 51 200 m of linear greenery. About 84% of Ostrava inhabitants is satisfied with the urban greenery (2016), satisfaction has increased in 12 pp since 2012.

functional/compositional unit	area m <sup>2</sup>	percentage
Parks	154683	8.70
Greenery as part of civic amenities	17300	0.97
Greenery for recreational purposes	70721	3.98
Other types of greenery	29500	1.66
Linear greenery	51200 m	-
Protective greenery ('green screens' separating residential areas from transport infrastructure/industry)	52385	2.95
Greenery as part of transport infrastructure	145590	8.19
Slope-stabilizing vegetation	5432	0.31

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Other greenery	171202	9.63
Other greenery - allotments	22774	1.28
Greenery as part of residential developments	438540	24.66
Greenery as part of residential developments (courtyards)	107509	6.05
Greenery at schools	61792	3.47
Greenery at sports facilities	31100	1.75
Greenery at cultural facilities	14845	0.83
Greenery at health care/firefighting facilities	50720	2.85
Greenery at industrial sites	18686	1.05
Greenery at commercial/administrative sites	224480	12.62
Greenery of particular significance	12893	0.72
Greenery at development zones	148312	8.34

*Table 1: Total area by function/composition*

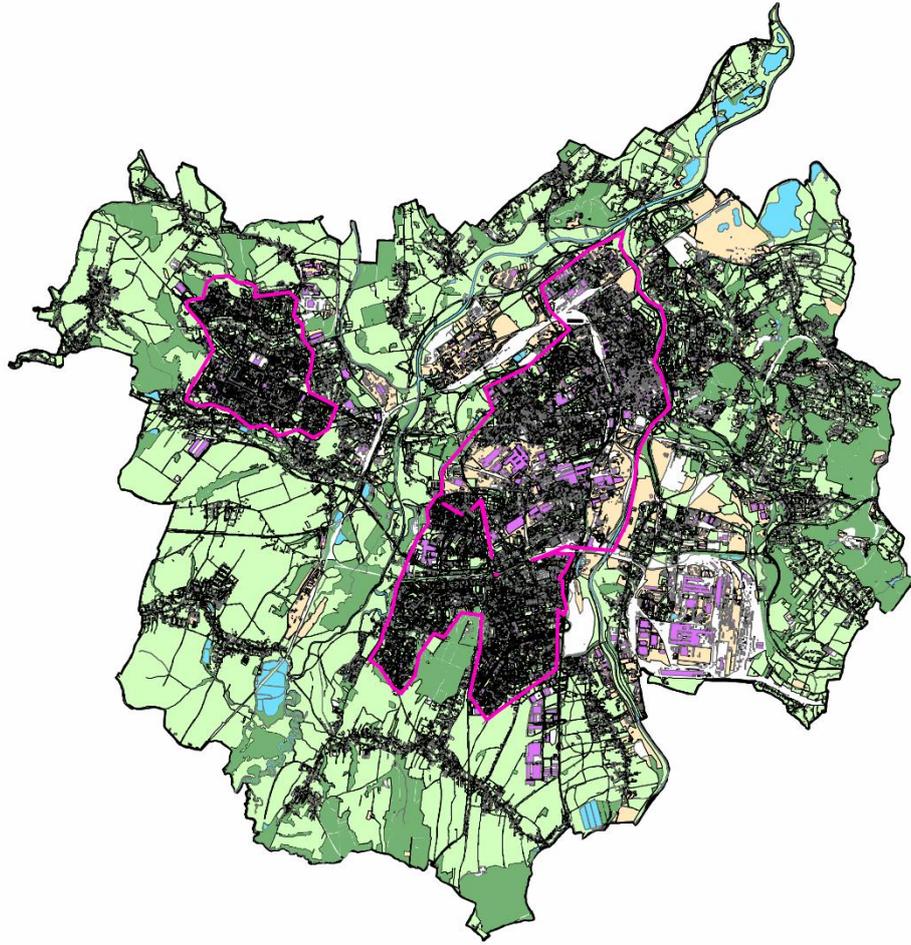
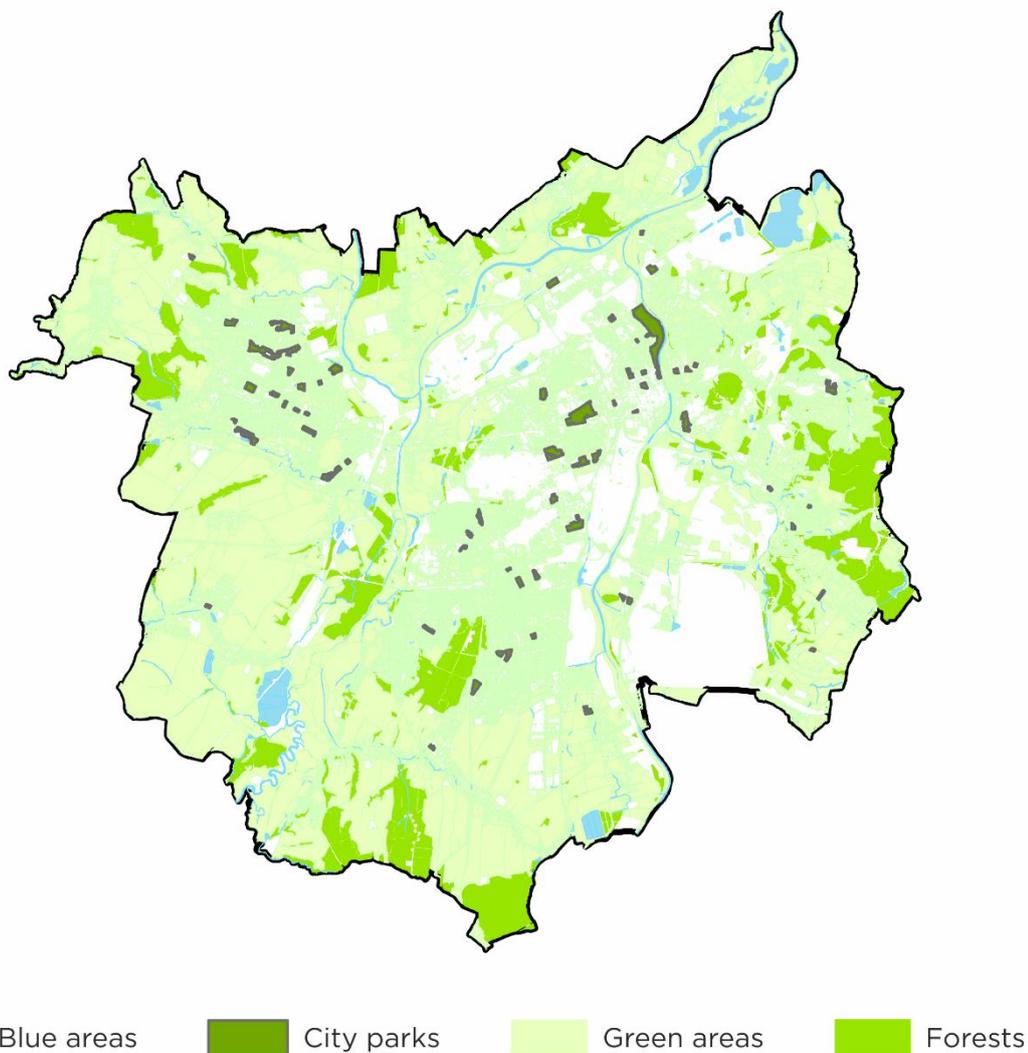


Figure 1: Land use map indicating municipality boundaries and inner city area



*Figure 2: City parks, green and blue areas*

Green areas create compact and unified entities (in the case of larger green areas, parks). Plans for new greenery always take into consideration the proposed **Territorial Ecostability System** (TES, part of the City's Land Use and Zoning Plan); the purpose of the TES is to link and integrate areas of higher ecological stability. Plantings of linear greenery are also planned in order to create links between green areas.

As Ostrava is a historic centre of heavy industry, the development of green areas improves the overall appearance of the city (recultivation of brownfields), creates more recreational opportunities within its boundaries, and reduces the negative impacts of air pollution and noise ('green screens' shielding residential areas from transport infrastructure/industrial sites). The importance of green areas is further boosted by the need for climate change adaptation (transpiration, shading, CO<sub>2</sub> absorption). Green areas also contribute to increased biodiversity.

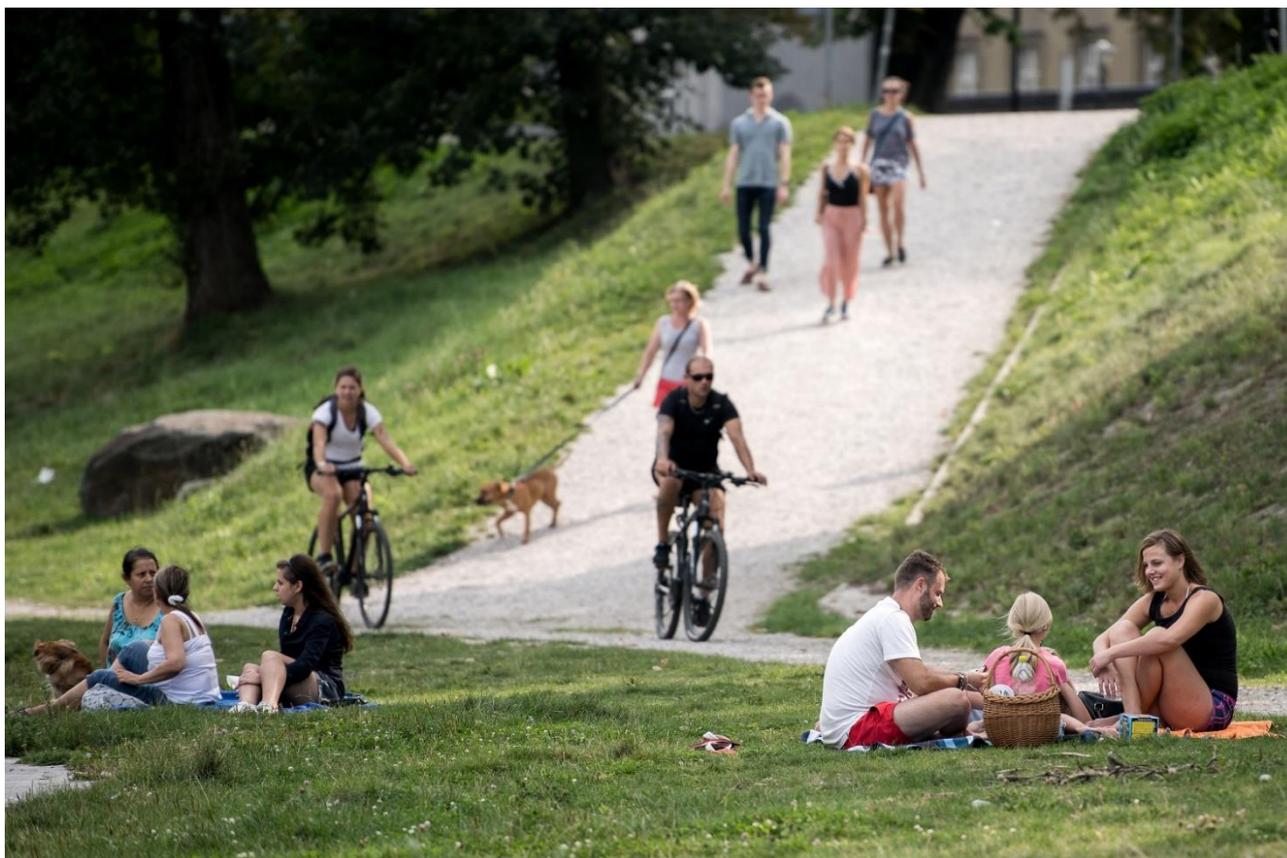
Urban greenery is classified on the basis of descriptive data. Its quality is evaluated according to the

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standard methodology for the evaluation of urban greenery; quality evaluation is taken into consideration when planning new urban greenery. Green areas that are obsolete or in poor condition are replaced by new greenery (reconstruction projects).

Forested areas within Ostrava are evaluated as part of the City's forestry management plans, in accordance with standard evaluation methodology.

Parks, forest parks and forests in Ostrava are **open to the public all year round**. Public transport provides access to the edges of parks/forest parks. Parks have surfaced and unsurfaced footpaths providing easy access (also to families with small children or disabled citizens).



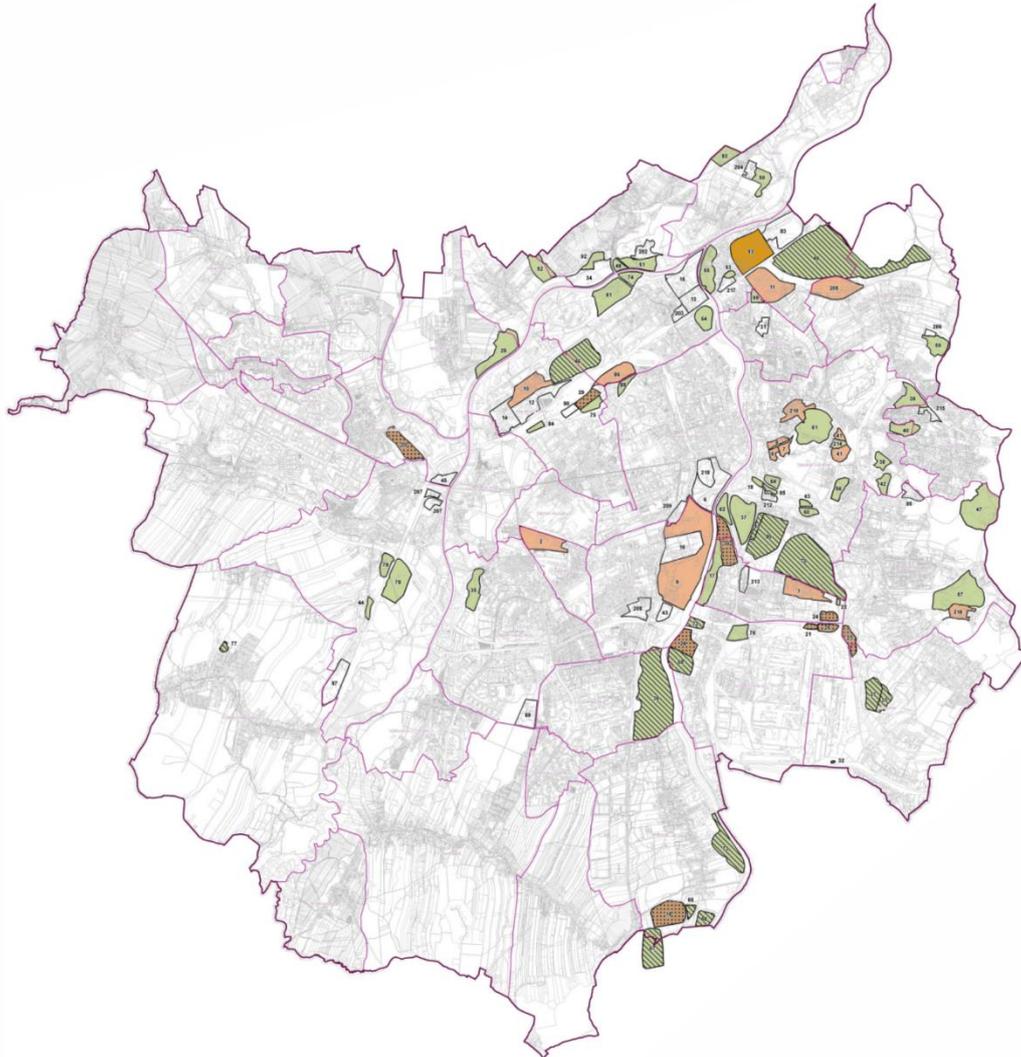
*Image 2: Komensky park (30 ha) in the city centre*

Principles of sustainable territorial development are implemented via the City's Land Use and Zoning Plan (LUZP) and other relevant strategic documents (such as the Greenery Development Plan). The percentage of sealed surface has not been calculated yet.

The LUZP is regularly updated in response to the changing situation and future outlook. The Plan (and its updates) are based on demographic and economic forecasting data. As part of the City's response to climate change, a **Climate Change Adaptation Strategy** has been drawn up; this document includes measures addressing land use, including the development of green infrastructure – e.g. by creating new green areas (according to priorities based on the vulnerability of specific locations) or by linking and integrating current green areas.

A total of **79 brownfields** have been identified in Ostrava, covering an area of approx. 19.04 km<sup>2</sup>; this represents approx. 8.9% of the city's area. Historically the most important brownfields in the city were at Karolina and Lower Vítkovice. Both sites have now been revitalized and are organically integrated into the

urban fabric (see Past Performance). The third most important brownfield is the Hrušov zone; this is now owned 100% by the City, and it is being prepared for new use.



recultivated areas
  social brownfields
  in the process of recultivation
  industrial brownfields
  waste ponds

areas marked as brownfields in the 2000 map which no longer meet the definition
  City of Ostrava boundaries
  cadastral area boundaries
  parcel boundaries
 21 number in the 2000 brownfields database

*Figure 3: Location of brownfield sites regenerated in 2000-2010 (actual map is not available)*

Currently the territory of Ostrava includes **3188 ha of agricultural land**. The traditional means of land use for urban agriculture involves the use of allotments. These have two main purposes: recreation and food-growing for personal consumption. Although some of these allotments were originally created in an uncontrolled manner, today they form an organic and integral part of the city's green infrastructure.

Other modern forms of **urban community farming** are currently being developed (e.g. the Market garden in the city centre). The increased popularity of organic produce is reflected in the increasing number of farmers' markets within Ostrava.

### 4B. Past Performance

#### Green urban areas

The development of green urban areas is coordinated by the Territorial Ecostability Systems (TES), which delineates individual biocentres linked by biocorridors. Recently the Plan was partially implemented on the basis of the TES set out in Ostrava's LUZP; previously missing biocentres and biocorridors (which form the spatial basis of the TES) were added. Biocentres are not only existing green areas (parks and other large areas of greenery); they also include areas where the creation of new green spaces would increase the biodiversity (and thus also the ecostability) of the system. Similarly, biocorridors are not merely existing strips of greenery along watercourses or existing rows of trees (linear greenery). As part of the implementation of the Plan, biocentres were created on brownfield sites and former mining/industrial waste sites; these biocentres were then connected by linear greenery to create the city's 'green skeleton'. There are no economic tools to support green roofs, vertical gardens, etc... implemented. Citizens have been involved into green area planning during LUZP elaboration and ad hoc for the particular parks.

#### Tree planting

Thanks to the large area of greenery, Ostrava ranks among the Czech Republic's greenest cities. In the past, large-scale plantings and reconstructions of poor-quality greenery in parks and elsewhere were carried out; this had a positive impact on the quality of Ostrava's green areas, and it also helped to reduce air pollution. In just three years (2013–2015), a total of 120 000 trees and 330 000 shrubs/bushes were planted in Ostrava, at a cost of 3,3 million EUR. Other plantings were carried out by stakeholders – e.g. by ArcelorMittal Ostrava, a major air polluter. Ostrava's green infrastructure also includes newly planted 'green screens' (greenery shielding residential areas from busy transport arteries and industrial sites), at a total cost of just under 43 million EUR. The City works in conjunction with NGOs on community planning of green areas and parks to serve communities living near planned investment sites. The results of this community planning form a basis for the decision-making process on large-scale investments in green areas.

#### Use of brownfields

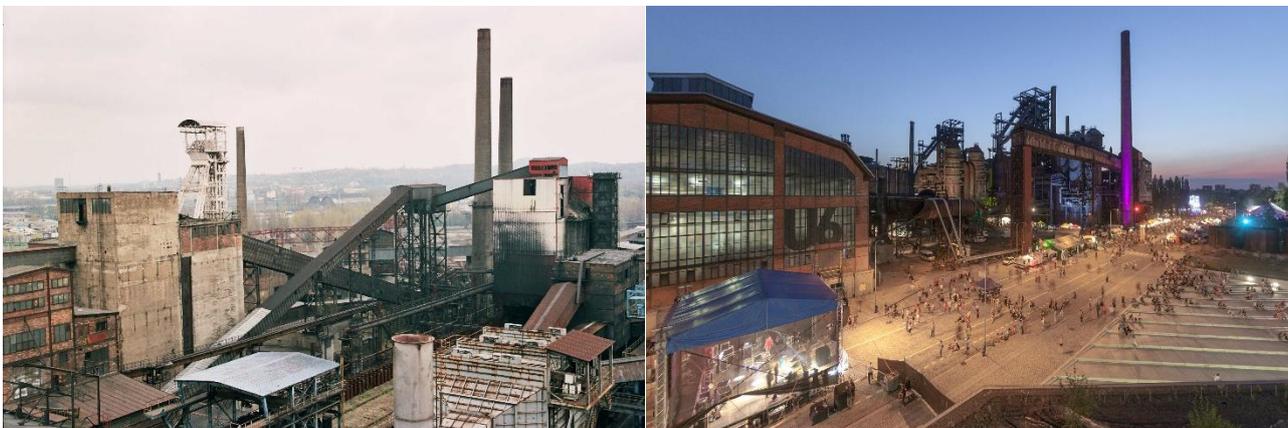
Ostrava's most pressing problem – one which is a consequence of its industrial history – is the existence of brownfields on almost 9% of the city's territory. Some of these brownfields occupied large areas in the vicinity of the city centre, and it was important to develop these sites not only in order to reduce environmental burdens, but also to ensure the organic development of the city and its functions.

The largest brownfield in Ostrava was at **Nová Karolina** ('New Karolina'), in the immediate vicinity of the city centre. It was originally the site of the Karolina coking plant complex. After a full decontamination, some of the original buildings were granted legal heritage protection as fine examples of historic industrial architecture; they have now been converted for use as a social/cultural centre. The remaining part of the brownfield was prepared for the construction of an entirely new city centre quarter. Today it is the site of a multifunctional development (240 000 m<sup>2</sup>) incorporating retail premises (86 000 m<sup>2</sup>), a residential complex (1 200 apartments), offices (60 000 m<sup>2</sup>), facilities for sports, leisure and entertainment (12 000 m<sup>2</sup>), plus extensive green areas.



*Image 3: New Karolina (past/present)*

Adjacent to Nova Karolina is the **Lower Vítkovice area** (so-called “Dolní oblast Vítkovice”) This 150-hectare site – listed as a National Cultural Monument – is a former industrial complex which ceased production in the late 1990s. It includes a historic ironworks (blast furnace, coking plant) and a coal mine. The complex was developed to integrate it with other development areas or tourist attractions (Karolina, Landek – see Chapter 5 of the EGC application), while also respecting the necessity to preserve the heritage values at this historic site. A number of structures were revitalized and converted for new uses. A multifunctional centre known as the ‘Gong’ (containing a congress hall for 1500 people, music rooms and an art gallery) was created by converting a 100 year-old gas-holder. The nearby power station was converted into an interactive Science and Technology Centre (opened in 2014; the STC has signed a Memorandum of Understanding with the American Museum of Natural History in New York, which forms the basis for inter-institutional cooperation. Lower Vítkovice is also currently the location of a large-scale project involving the City of Ostrava, local universities and other partners; the project will create a complex with research centres, cultural institutions and leisure facilities. Lower Vítkovice is the venue for one of Europe’s most renowned annual music festivals, Colours of Ostrava. The total cost of the revitalization work at Lower Vítkovice is around 38,5 million EUR. Thanks to this ambitious and sustainable redevelopment programme, this former industrial site has been transformed into a symbol of Ostrava’s regeneration. It is now the second most visited cultural monument in the Czech Republic (with an unmistakable silhouette that forms the centrepiece of Ostrava’s distinctive skyline) and the third most visited tourist destination in the country (with around 1.3 million visitors per year).



*Image 4: Lower Vítkovice (past/present)*

A clearance project has recently been launched at the **Heřmanice slag-heap**. This is the largest slag-heap

complex in the Ostrava region, and it represents a major environmental burden; the waste material is burning inside the slag-heap and emitting harmful substances into the atmosphere. Currently in its pilot stage, the project will clear the slag-heap completely within a decade, enabling the land to be used for a different purpose. A similar project has been underway for several years at a site consisting of **waste oil lagoons** (the former Ostramo oil refinery, closed in the late 20th century). Once these lagoons have been cleaned up, the site will be used for a new purpose.

### 4C. Future Plans

One of the main goals of the Ostrava City Strategic Development Plan 2017–2023 is “**Bringing the City Closer to Nature**”. As part of this goal, Ostrava’s revitalized green areas will be expanded (**min. 80 ha of parks and urban greenery by 2023**).

Other changes planned for implementation by 2023 include:

- Cultivated urban parks and green areas for leisure, sports and recreational use.
- Ostrava will be better prepared for climate change due to improvements in public spaces, more water features and elements supporting biodiversity.
- An increase in the area of functional, high-quality and well-maintained greenery.
- Regeneration of brownfields and post-industrial sites, incl. temporary alterations. Major progress on the clearance (cleanup) of ecological burdens from past industrial activity.

An important role in planning green areas is played by the requirements set out in the recently created Climate Change Adaptation Strategy, which specifies detailed goals depending on the vulnerability of individual areas of Ostrava.

#### Revitalization of the Ostravice River area in the city centre

This urban planning project covers the area alongside the Ostravice River in the city centre, and includes barrier-free connections between current pedestrian walkways and cycle routes, revitalization of the right bank, pedestrian routes parallel with the current cycle route, plantings on river embankment walls, installation of street furniture, the adaptation of the current pier for water sports, and the construction of a workout area.



Image 5: Ostravice river bank (past/present/future)

#### Benatky Forest Park

The project ‘Benatky Forest Park and Surroundings’ targets the Hulvaky hill and former outdoor swimming pool plus an area of fish-ponds known locally as Benatky (meaning ‘Venice’). Detailed investment plans are currently being drawn up, and the next phase of documentation is being prepared. The Forest Park covers an area of 23.7 ha. The main aim of the project is to make the area more attractive and open it up again to the general public for active leisure/sports activities. The project will include the reconstruction of park

infrastructure, the complete revitalization of the ponds (a unique local biotope) including recreational facilities, pedestrian/cycle bridges over a busy main road with a tram route. The site is easily accessible via public transport.



Image 6: Benatky Forest Park (present/future)

### Revitalization of the Pustkovec valley

This project (cost approx. 1 million EUR) will create an attractive leisure destination by revitalizing the valley of the Pustkovec stream and creating new recreational facilities. The new development will include a water playpark, viewing points, a picnic area, low stone walls with benches (including perennial plants), a loggery for insects, and birdhouses. The project will be co-financed by the City and EUSF; implementation is scheduled to begin in 2019.

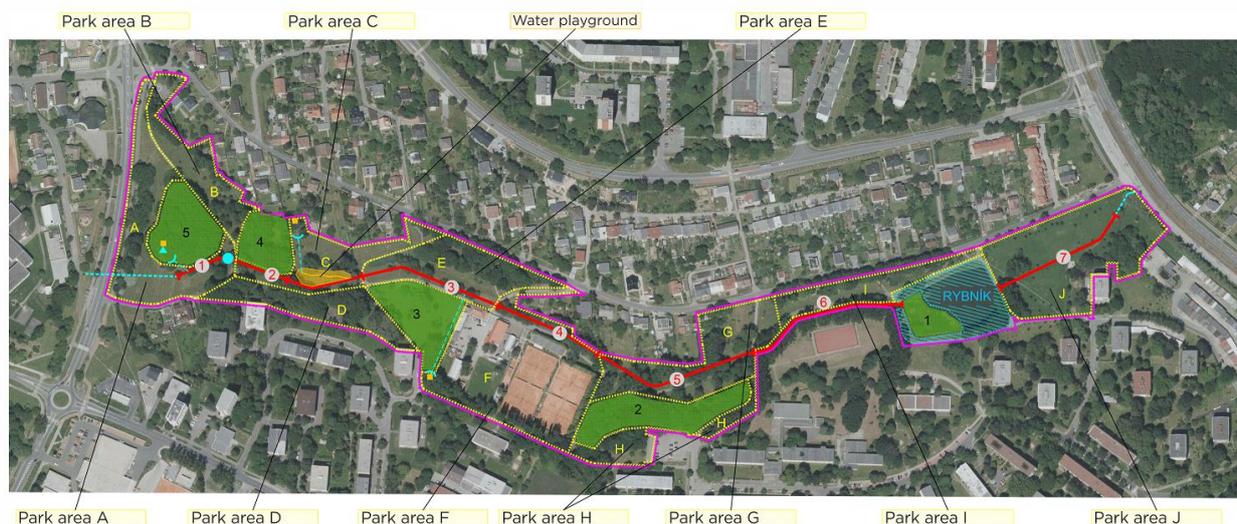


Image 7: Plan of revitalization of Pustkovec valley

### Hrusov zone

The Hrusov zone is a “social brownfield”; it was not an industrial site, but a residential area with hostels for workers from the nearby factories. Detailed plans for the future use of the area are currently being drawn

up; the zone will mainly be used for leased office buildings and research/pilot facilities.

### Grant programme for the revitalization of public space in Ostrava

The above grant programme aims to encourage the gradual revitalization and aesthetic improvement of public spaces. The key principle is to involve members of the general public in the process of improving quality of life and **creating improved public spaces**. A total of 16 applications were received this year, of which 11 were approved for funding. The projects are currently in the implementation phase.

The need to improve the function and aesthetic appearance of many public spaces in Ostrava has been highlighted by numerous members of the public. It has also been discussed by the working group created as part of the REFILL programme (URBACT). Within this group, the Office of the Head Architect at Ostrava City Authority meets with representatives of various NGOs, architects, urban planners, cultural organizations and other experts.

Another revitalization project prepared presently is the reconstruction of former city **slaughterhouse into unique art gallery**:



Image 8: Former slaughterhouse (present/future)

### Landek Park

The project is focused on reconstruction of Mining Museum area to the place providing wide scale of education opportunities. Among other there should be a forest park created including wetlands with skeleton of Oder river old branch. The area should be connected to the city centre by cable car (see chapter 3 EGC) and would enable to make this remarkable area more accessible (ancient fortified settlement, coal layers ending at the surface, and other).



Image 9: Landek Park (present/future)

### Chatteau Poruba Park

Castle with park and church of St. Nikolas from XV. Century was the heart of the former village. Unfortunately during historical development in last century it has been surrounded by residential are and many barriers started to complicate its use. The development plan is being prepared to create open, friendly and relax space for inhabitants. It will be comprehensive project which will cover not only the park revitalization, but also revival of the whole area with protected architectonic style of Sorela.

### 4D. References

EGC Ostrava: <https://egc.ostrava.cz/>

Methodology to compile Key Environmental Indicators for Biodiversity and Ecosystem Services and Forest Management: [http://www1.cenia.cz/www/sites/default/files/biodiverzita\\_lesni\\_hospodarstvi.pdf](http://www1.cenia.cz/www/sites/default/files/biodiverzita_lesni_hospodarstvi.pdf)

Brownfields in Ostrava:

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<https://www.ostrava.cz/cs/o-meste/zivotni-prostredi/brownfields/brownfields>

Ostrava's greenery: <http://www.ostrava.cz/cs/o-meste/aktualne/ostrava-je-opet-zelenejsi>

Urban greenery development strategic plan of Ostrava:

[https://www.ostrava.cz/cs/urad/magistrat/odborny-odbor-ochrany-zivotniho-prostredi/strategicky-plan-rozvoje-systemu-zelene-na-uzemi-mesta-ostravy/strategicky-plan-rozvoje-systemu-zelene-na-uzemi-mesta-ostravy/c-documents-and-settings-gackami-doc-www-stra-nky-strategicka1-2-pla-n-rozvoje-systa-c-mu-zelena-souhrnna\\_zprava.pdf](https://www.ostrava.cz/cs/urad/magistrat/odborny-odbor-ochrany-zivotniho-prostredi/strategicky-plan-rozvoje-systemu-zelene-na-uzemi-mesta-ostravy/strategicky-plan-rozvoje-systemu-zelene-na-uzemi-mesta-ostravy/c-documents-and-settings-gackami-doc-www-stra-nky-strategicka1-2-pla-n-rozvoje-systa-c-mu-zelena-souhrnna_zprava.pdf)

Strategic Development Plan of Ostrava: <http://fajnova.cz/wp-content/uploads/2017/03/Strategicky-plan-Ostrava.pdf>

Revitalization of Ostravice river bank: <http://fajnova.cz/projekt/revitalizace-nabrezi-reky-ostravice/>

Revitalized Low Vítkovice: <http://www.dolnivitkovice.cz/dolni-vitkovice>

Community garden Tržnice: <https://www.facebook.com/kztrznice>

Bělský les: <http://fajnova.cz/?s=B%C4%9Blsk%C3%BD+les&submit>

Benátky forest and Hulvácký hill revitalization: <https://benatky.ostrava.cz/>

Benátky forest revitalization <http://www.msstavby.cz/revitalizace-lesoparku-benatky-24-04-2017/>

Revitalization of Chatteau Poruba Park:

<https://poruba.ostrava.cz/cs/o-porube/promeny-verejneho-prostoru-v-porube/promena-zameckeho-parku-a-jeho-okoli/promena-zameckeho-parku-uspela-v-prvnim-kole>