

Slovakia: Development of open space standards

Climate change impacts addressed	Urban flooding High temperatures Poor air quality
Spatial scale	Country
Response type	Guidance
Themes driving the initiative	Development need despite climate impacts Adaptation to future climate Biodiversity conservation
Factors of success	Outsourcing research Cohesive delivery of multiple benefits

Summary

In Slovakia, the Ministry for Construction and Regional Development commissioned a group of experts in 2009 to update the set of national standards for land use planning, which were first developed in 2002. The standards include guidance for planning of open spaces and green areas. The standards describe not only the aspects relating to the quantity of open space in towns or in a given development, but also include aspects relating to the quality and character of open spaces, such as percentage of sealed surfaces, percentage of tree cover and accessibility. This exhaustive set of standards builds on examples from other European cities, including Berlin, Graz, and Malmö. The standards will be adopted by the Slovakian Ministry for Construction and Regional Development in December 2010 and will provide a non-statutory guidance for spatial planners and other departments in local authorities when taking decisions relating to land use planning and development control.

Case study location

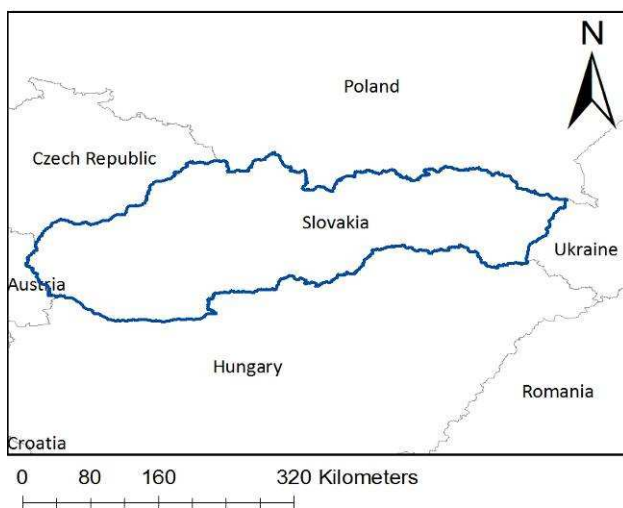


Figure 1. Location of Slovakia in Europe

Slovakia is a land-locked country in Central Europe (Figure 1), with a population of over 5 million and a surface area of about 49,000 km². The present-day Slovakia became an independent state on January 1, 1993 after the peaceful dissolution of Czechoslovakia, and its capital city is Bratislava. Western Slovakia and Bratislava are experiencing mass construction of housing (Figure 2), and due to the focus on maximising profit from these developments, principles of sustainable planning (e.g. control of urban sprawl, mixed land use, accessibility of open green spaces, basic services and transport, maintenance and management of natural environment and protection of cultural urban heritage) are being often neglected.

The Slovak climate lies between the temperate and continental characteristics with relatively warm summers and cold, cloudy and humid winters. The area of Slovakia can be divided into three kinds of climatic zones: lowland, basins climate and mountain climate. In the lowlands, the average annual temperature is about 9-10°C. The average temperature of the hottest month is about 20°C and the average temperature of the coldest month is greater than -3°C. The average temperatures in basins and mountains are lower.

In Slovakia, the average annual air temperature increased by about 1.1°C and annual precipitation decreased by about 5.6% in the 20th century. However, in southern Slovakia, total precipitation fell by more than 10% although in the north and northeast of Slovakia an increase of up to 3% was documented over the century. Despite the overall decrease in precipitation, 1996-2000 were characterised by severe flooding.

According to future climate change scenarios, average temperature in mid-Slovakia could increase by as much as 5.2°C in March and by 3.3°C in November (3.8°C average per year) for the period of 2081-2100, compared to 1971-1990. Extreme weather events such as heatwaves are also expected to increase in frequency and severity ⁽¹⁾.



Figure 2. Green spaces and encroaching development in Bratislava (Photograph courtesy of REC Slovakia)

Development of the initiative

Key aims

The main aim of the initiative is to develop: "Standards for municipal infrastructure - A methodological guidance for land-use planning documentation". This document is being prepared for the Slovakian Ministry of Construction and Regional Development to provide a set of consistent quantitative and qualitative standards for open spaces, and will be targeted at spatial planners in order to guide them in decisions relating to land use planning and development control.

Themes driving the initiative

Development of standards for spatial planning

The main driver was the need to create a comprehensive set of standards relating to all aspects of land use planning expressed by legislation and regulations developed by the Ministry of Construction and Regional Development. In 2002, "Standards of minimal infrastructure of municipalities - methodological guide for authors of spatial planning documentation" was developed by the Ministry of the Environment of the Slovak Republic, which stated that in an

ecologically balanced settlement, over 60% of the area should be covered by vegetation. With the changes in legislation and regulations in the Slovak Republic since 2002, in part associated with the accession to European Union, a need was identified to expand upon and support the implementation of these standards ⁽²⁾.

Need to strengthen the role of green spaces in enhancement of ecology, adaptation to climate change, and improving the quality of urban realm

In relation to open and green spaces, the drivers listed in the "Standards for municipal infrastructure - A methodological guidance for land-use planning documentation" document include biodiversity and climate change adaptation. This is because it has been recognised in Slovakia, that many green spaces currently have very low ecological value, and that they play an important role in adaptation of cities to climate change impacts. It is also acknowledged that their role in these respects could be enhanced by adherence to quality standards. This thinking has been largely driven by the EU Directives and policy initiatives, such as European Spatial Development Perspective and the Environment Action Programme 6. Also, due to pressure from developers, the loss of green space to development, and the growing need for parking space, there needs to be tighter regulation in planning in order to improve the quality of the public realm and prevent further deterioration ⁽²⁾.

Participation in research projects

Another important driver was the engagement of the authors of the standards, the Regional Environment Centre Slovakia, in European research projects that involved exchange of experiences and information. These projects included UrbSpace ⁽³⁾, funded by the European Regional Development Fund, which aimed to improve environmental quality in smaller urban centres. Also significant is the GRaBS project (Green and blue space adaptation for urban areas and eco towns), funded by the Interreg IVC Programme, which aims to increase understanding of the role of green and blue spaces in adaptation to climate change and the implementation of such adaptation responses ⁽⁴⁾. These projects have enabled exchange of experiences between different European municipalities and have increased the profile of issues including adaptation and green spaces in urban areas.

Details of the initiative

Chapter 5 of the "Standards for municipal infrastructure - A methodological guidance for land-use planning documentation" ⁽²⁾ includes standards focused on the quantity and character of open spaces. The criteria address quantitative (i.e. concerning the amount of open space) and qualitative issues (i.e. relating to the characteristics of open spaces such as percentage of vegetation, percentage of surfaces permeable to water, percentage of tree cover, and other indexes associated with the functional use of open spaces). In addition, an accessibility component deals with the need to create an inter-linked networks of open spaces distributed accordingly to the urban population.

The standards take into account various hierarchies of importance of open spaces, issues of spatial scale (city, district, local) as well as the prevailing functions of the spaces. The standards are also categorised according to the size of the municipality (number of residents). Table 1 provides an example of the quantitative standards in relation to provision and accessibility of open space. Table 2 provides an excerpt of the standards focusing on the quality of green spaces.

Table 1. Quantitative standards for the provision of open space (excerpt) ⁽⁵⁾

Open spaces		STANDARD FOR SIZE CATEGORY OF MUNICIPALITIES IN THOUSANDS OF INHABITANTS						
category	Indicator	≤ 5	5 > 10	10 > 20	20 > 30	30 > 50	50 > 100	≥ 100
Parks, public gardens and green spaces	Minimum park area	5 000 m ² , and minimal width 25m	5 000 m ² , and minimal width 25m	5 000 m ² , and minimal width 25m	5 000 m ² , and minimal width 25m	5 000 m ² , and minimal width 25m	5 000 m ² , and minimal width 25m	5 000 m ² , and minimal width 25m
	[m ² /inhabitant]	8-14	8-14	8-14	8-14	8-14	8-14	8-14
Local level	[m ² /inhabitant]	8-14	8-14	2-5	2-5	2-5	2-5	2-5
	accessibility	300 m	300 m	300 m	300 m	300 m	300 m	300 m
District level	[m ² /inhabitant]			2-5	2-5	2-5	2-5	2-5
	accessibility	-	-	1.2 km	1.2 km	1.2 km	1.2 km	1.2 km
City level	minimum area [ha]			5	5	5	5	5
	accessibility	-	-	3.2 km	3.2 km	3.2 km	3.2 km	up to 5 km
Other green spaces								
Playgrounds, sport facilities	min. area [ha]/ 1000 inhabitants	0.8 ha per 1,000 inhabitants	0.8 ha per 1,000 inhabitants	0.8 - 1.6 ha per 1,000 inhabitants	0.8 - 1.6 ha per 1,000 inhabitants	0.8 - 1.6 ha per 1,000 inhabitants	0.8 - 1.6 ha per 1,000 inhabitants	0.8 - 1.6 ha per 1,000 inhabitants
• Playgrounds for small children	Accessibility within	up to 150 m	up to 150 m	up to 150 m	up to 150 m	up to 150 m	up to 150 m	up to 150 m
• Playgrounds for children of 10-13	Accessibility within	up to 300 m	up to 300 m	up to 300 m	up to 300 m	up to 300 m	accessibility within 300 m	accessibility within 300 m

Table 2. Quality standards related to the % of vegetated surfaces and tree cover for the characteristics of green spaces, open spaces and external spaces in different types of development (excerpt) ⁽⁵⁾

Open spaces		STANDARD FOR SIZE CATEGORY OF MUNICIPALITIES IN THOUSANDS OF INHABITANTS						
facility	indicator	≤ 5	5 > 10	10 > 20	20 > 30	30 > 50	50 > 100	≥ 100
Parks, public gardens and green spaces	[% of vegetation surfaces]	80%	80%	80%	80%	80%	80%	80%
	[% of coverage by woody plants]	60%	60%	60%	60%	60%	60%	60%
Local level	[% of vegetation surfaces]	80%	80%	80%	80%	80%	80%	80%
	[% of coverage by woody plants]	60%	60%	60%	60%	60%	60%	60%
District level	[% of vegetation surfaces]	80%	80%	80%	80%	80%	80%	80%
	[% of coverage by woody plants]	60%	60%	60%	60%	60%	60%	60%
City level	[% of vegetation surfaces]	80%	80%	80%	80%	80%	80%	80%
	[% of coverage by woody plants]	60%	60%	60%	60%	60%	60%	60%
Civic space (sealed surfaces), roads and other transport routes								
• Urban squares and plazas								
Local level	[% of vegetation surfaces]	Min. 30%	Min. 30%	Min. 30%	Min. 30%	Min. 30%	Min. 30%	Min. 30%
	Index of impermeableness	max. 40%	max. 40%	max. 40%	max. 40%	max. 40%	max. 40%	max. 40%
District level	[% of vegetation surfaces]	30%	30%	30%	30%	30%	30%	30%
	Index of impermeableness	max. 40%	max. 40%	max. 40%	max. 40%	max. 40%	max. 40%	max. 40%
City level	[% of vegetation surfaces]	20%	20%	20%	20%	20%	20%	20%
	Index of impermeableness	max. 45%	max. 45%	max. 45%	max. 45%	max. 45%	max. 45%	max. 45%
• Pedestrian streets	Index of impermeableness	max. 45%	max. 45%	max. 45%	max. 45%	max. 45%	max. 45%	max. 45%
• Residential streets	Number of trees per 1 km	80 pc as minimum	80 pc as minimum	80 pc as minimum	80 pc as minimum	80 pc as minimum	80 pc as minimum	80 pc as minimum
• Other roads	unlimited	unlimited	unlimited	unlimited	unlimited	unlimited	unlimited	unlimited

Implementing the initiative

The land use planning standards document was developed in 2009. During the first half of 2010, the Ministry of Regional Development and Construction forwarded the document to its sub-ordinary bodies, to all other Slovak ministries, and to the Union of Slovak cities and towns for consultation. Comments will be considered upon their collection and incorporated into the document where relevant. As of June 2010, no comments on the chapter of open spaces and greenery were submitted. The document will be formally published in December 2010. At this point, the standards will be available to local planners, who will be responsible for their use in local land use planning decisions and actions.

Building the evidence base

Development of the standards was largely based on experiences learnt from the following areas:

- Berlin, Germany, where the Biotope Area Factor is used to guide developers to secure an appropriate proportion of green space in their developments.
- Graz, Austria, where "Standards for open spaces in built-up areas" (Freiraumplanische standards fur die Baulandgestaltung) sets an index of surface permeability, which is applied to developments.
- Malmö, Sweden, where a "green space factor" was applied in construction of the new district Vastra Hamnen, which ensures that each plot of land has a minimum amount of greenery. On a scale from 0 to 1, the average factor must be at least 0.5 ⁽⁶⁾.
- Great Britain, where the "Six Acre Standard" specifies the provision of playing fields in cities, and the "Accessible Natural Green Space Standard" describes the provision of green spaces of more natural character in urban areas ⁽⁷⁾.

The potential impacts of climate change in Slovakia guided the selection of standards of open space provision, as well as the aspects relating to the quality of green spaces, such as provision of trees and an index of permeability.

Monitoring and evaluation

Due to the non-statutory character of the standards, no plans for monitoring their implementation or effectiveness have been made.

Sources of funding

The development of standards for open space was funded by the central Government in Slovakia, i.e. the Ministry of Construction and Regional Development.

Stakeholder engagement

Collaboration with key stakeholders

The work on the standards was ordered by the Ministry of Construction and Regional Development. However, the process of developing the standards involved experts from a range of different disciplines. The main stakeholder involved and leading the development of the standards was the Institute of Urban and Territorial Planning URBION (Inštitút urbanizmu a územného plánovania URBION) in Bratislava. Other experts came from the Slovak University of Technology, Faculty of Architecture (responsible for standards related to spatial planning for education, health,

social care, culture, sport, recreation, etc), and from the Regional Environmental Centre in Bratislava (responsible for the development of standards for open spaces). The study also involved independent experts, and the work was coordinated by AŽ PROJEKT – a company specialising in urban design and land planning studies.

Political buy-in

The standards prepared by the group of experts will be discussed by a committee consisting of members of different Ministries. This will assist in making necessary changes to the standards, and will also help in gaining political buy-in for their implementation.

Can it have an impact?

Scope of adaptation

The development of tight standards guiding spatial development and land use planning is a novel approach in Slovakia and in other post-communist countries. The standards will refer both to the new developments, but also more importantly to the reconstruction of existing developments. Inclusion of standards relating to tree canopy cover may have a significant effect in changing the way open spaces look in Slovakian cities, and whether they are able to provide appropriate shading and cooling in light of the changing climate. The standards include recommendations not only for distinctive green spaces, but also for open spaces associated with developments. Therefore, the standards provide a comprehensive guide for planning of all open spaces in all Slovakian settlements. This makes it a very powerful tool, which could result in significant increase of vegetation cover and surface permeability assisting with adaptation to climate change impacts. Moreover, the standards are not only relevant to spatial planners, but also to other decision makers in local authorities. For example, the Building Office for developers may require a change in a development due to conflict with the standards in order to grant planning permission.

However, the main caveat is that the standards are not statutory. They have been produced purely as guidance and local planners and developers will not be obliged to follow them. Therefore, it is not certain that the standards will be fully utilised by decision makers. Nevertheless, the standards represent a step in the right direction and help to build capacity to adapt to climate change impacts in Slovakia.

Key messages

- Cooperation with experts and environmental non-for-profit organisations resulted in the development of a comprehensive set of standards. It is clear that the use of the local knowledge base, such as research institutes or universities, is hugely beneficial when developing evidence-based standards.
- Learning from others was crucial – the standards for open spaces were based on British standards for the provision of open spaces, and also on experiences of cities in Sweden, Austria and Germany. This emphasises the need for exchange of experiences.
- Learning from other cities and countries was mainly made possible by participation in international projects, such as UrbSpace and GRaBS.

- Creation of a very specific set of standards for spatial planning may be a useful solution for countries where spatial planning legislation and procedures may not be strong enough to withstand pressure from developers.

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