

CORVINUS UNIVERSITY OF BUDAPEST
FACULTY OF LANDSCAPE ARCHITECTURE



PhD BOOK OF THESESES

**APPLICATION OF LANDSCAPE PROTECTION PRINCIPLES
IN THE METHODOLOGY OF URBAN PLANNING**

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ANTECEDENTS, OBJECTIVES

Sectoral proposals by themselves do not have any enforcement power in the Hungarian urban planning system. Therefore, it is essential for the proposals of nature and landscape protection to be incorporated into the plans that are to be officially approved. As the current range of tools provides only limited opportunities for this, the objective of my research is to reveal the landscape protection contents of the officially approved urban plans and the existing planning and regulatory tools.

Furthermore, the goal of my research was to give a horizontal overview of all municipal-level professional sources (environmental program, environmental analysis, biological activity calculation, regulation for the preservation of local heritage), which – indirectly – also contain landscape protection aspects and elements.

As urban plans are mostly regulated by higher-level spatial plans, a vertical overview is also necessary. In this context, my goal was to analyze the landscape protection aspects determined by national or county-level spatial plans.

New construction sites have great impact on land use, landscape pattern and landscape scenery, therefore it was my goal to analyze and assess the importance of tools with the highest influence on the assignment of areas marked for development from a landscape protection aspect and to propose the implementation of new tools as well.

Having participated in several large-scale environmental and landscape analysis projects, one of my main goals was the introduction and the assessment of the German system of *landscape planning* and *regulation of intervention*, their relevance to urban planning and the specification of elements of the German system that may be transposed into the Hungarian system, in order to improve the effectiveness of the validation of landscape protection goals and principles.

LITERATURE

During my research I have used related literature on landscape planning, landscape protection and urban planning, the legal documents in effect and the urban plans and local regulations of settlements within the study area. In the field of landscape architecture, the works of MÓCSÉNYI, CSEMEZ and CSIMA were made use of. Regarding urban planning, the books of TÓTH-HÜBNER-GÖMÖRI and NAGY were used, while on the topic of regulation the publications of KÖRMENDY and SZABÓ were relied upon. I elaborated the topic of landscape protection based on the research and publications of CSIMA, KABAI, ILLYÉS and KOLLÁNYI, while I used the papers of CSORBA and KERÉNYI on the aspects of landscape geography.

Regarding the calculation of biological activity, the publications of JÁMBOR, M. SZILÁGYI and NAGY K. have been relied on. The German system of landscape planning was analysed using the books and research reports of AUHAGEN, HEILAND, RIEDEL and v. HAAREN, as well as related laws and regulations. The

works of the German Institute for Urban Affairs (DIFU) were prominent amongst projects regarding the connections between landscape planning and urban planning. The papers of BRUNS, GERHARD, KÜPFER, LAMBRECHT and v. HAAREN provided the background for the research on regulation of intervention.

MATERIALS AND METHODS

One of the main tasks of municipal level landscape planning is to represent the aspects of landscape protection, the conservation and modification of landscape character and landscape pattern, the protection of landscape potential, scenery and cultural values, and to integrate them into urban plans. The purpose of analysis-based urban planning tools – the Structural Plan and the Local Building Acts – is to regulate building and land use within the municipal boundaries in accordance with local and county-level development goals and based on the principles of value conservation and landscape protection. The assignment of new building areas, changes in land use and the appearance of new land uses are all significant influences on landscape pattern, and therefore scenery and landscape character. The main point of my research was to determine the significance of the tools capable of influencing the assignment of new building plots and building zones from the landscape protection point of view.

In order to complete the above-mentioned goals, I analyzed the planning and regulatory frameworks. To assess the application of these, I chose the four municipalities of Szentendre-sziget (Szentendre Island) as my study area. I assessed the structural and regulatory elements connected to landscape protection in all the urban planning tools of the municipalities (both those accepted in 2003 and after 2010) and their impact on landscape pattern and landscape character. I assessed the horizontally and vertically connected plans, impact assessments, calculations and local regulations.

I used professional and legal sources for the analysis and assessment of the German regulation and tool system of landscape planning and landscape protection/management. The time interval of the research is between 1976 (introduction of the German Federal Act on Nature Conservation and Landscape Management) and 2013.

RESULTS

System of theses:

Objective: Assessment of the current landscape protection tools with an established legal background in Hungary.

- Thesis 1.** The aspects of spatial plans – as significant elements of the vertical regulatory toolkit – that have an impact on municipal-level landscape protection have been determined.
- Thesis 2.** The „internal and external” regulatory/planning elements of the landscape protection-related horizontal urban planning toolkit in Hungary have been determined.
- Thesis 3.** The role of restrictive measures related to territorial protection in the protection of landscape character has been determined.

Objective: Assessment and control of landscape protection tools determining the assignment of building plots and building areas.

- Thesis 4.** The granting of not localized building opportunities in agricultural areas has been determined as a regulation-based threat for landscape pattern.
- Thesis 5.** It has been determined that the assignment of new building areas in structural plans, as well as the location and measurement requirements for the authorization of building in other areas, has to be based upon a separate chapter of the supporting landscape analysis.
- Thesis 6.** A critical analysis has been given about the efficiency of the German regulatory and planning system for influencing new building sites. Based on this analysis, the introduction of new elements into the Hungarian urban planning toolbox has been proposed.

Objective: Designation of German tools admissible into the Hungarian system

- Thesis 7.** The Hungarian and German regulatory and planning tool systems for landscape protection have been compared. As a result, both the significant differences between the regulations of content requirements of plans and the similarities regarding integration with urban planning and law enforcement have been determined.
- Thesis 8.** The Hungarian and German land use compensation systems have been compared. The landscape protection aspects of the German system have been determined and a proposal for the development of the Hungarian system has been made.

Thesis 1.

- **The aspects of spatial plans – as significant elements of the vertical regulatory toolkit – that have an impact on municipal-level landscape protection have been determined.**

County-level and regional-level spatial plans give limitations as percentages of the total area, while regional land use zones mainly determine limitations and prohibitions regarding the assignment of built-in and mining areas. The authorization for further planning and refinement, as well as the obligation for territorial demarcation given by county-level plans have a positive impact on municipal-level landscape protection. The spatial plans not giving authorization for the supplementation and refinement of the ecological network is a flaw from the landscape protection point of view.

Thesis 2.

- **The „internal and external” regulatory/planning elements of the landscape protection-related horizontal urban planning toolkit in Hungary have been determined.**

I considered the internal toolkit to be consisting of the following tools, facilitated by laws (National Planning and Construction Requirements – OTÉK, Urban Planning Code), suitable for the integration of landscape protection into the approved plans:

- land use planning,
- zoning,
- type, site and amount of building,
- special legal institutions,
- protected areas,
- protection areas.

I have determined – supported by facts – that two of the land use categories („natural area” and agricultural area), both important parts of the interior toolkit, need redefining – particularly regarding the regulation of building on previously unbuilt areas.

I classified the following calculations, analyses, programmes and regulations decreed by specific legislation that may be significant in the urban planning process or during the implementation phase from the landscape protection point of view as belonging to the external toolkit:

- calculation of biological activity,
- environmental programme,
- regulation for the preservation of local heritage,
- impact assessments (environmental and Natura 2000 impact assessment).

The external toolkit also includes a controlling function.

Thesis 3.

- **The role of restrictive measures related to territorial protection in the protection of landscape character has been determined.**

The restriction measures connected to territorial protection have been grouped based on which landscape character influencing factors they restrict.

I have classified the prohibition of building and land use change, as well as the obligation for keeping land use unchanged, as primary restriction measures supporting the protection of landscape character.

I have classified the geographical and time limitations of recreation/tourism and the land management regulations within the existing land use as secondary restriction measures supporting the protection of landscape character.

Thesis 4.

- **The granting of not localized building opportunities in agricultural areas has been determined as a regulation-based threat for landscape pattern.**

Building on agricultural areas may be permitted without the specification of the exact construction site, determined by plot size or percentage of ownership, which enables a diffuse building structure and therefore lead to unfavourable changes in landscape pattern.

Thesis 5.

- **It has been determined that the assignment of new building areas in structural plans, as well as the location and measurement requirements for the authorization of building in other areas, has to be based upon a separate chapter of the supporting landscape analysis.**

The mapping and textual elements the landscape analyses supporting the assignment of new building areas and building sites are required to contain – depending on local features and available data – have been determined. This support is particularly important for the assignment of the exact location of new buildings within zones not marked as building areas. This allows the local features of the municipalities to be more pronouncedly considered when assigning restrictions and prohibitions, while enabling the municipal-level refinement of restrictions/regulations determined by spatial plans.

Thesis 6.

- **A critical analysis has been given about the efficiency of the German regulatory and planning system for influencing new building sites. Based on this analysis, the introduction of new elements into the Hungarian urban planning toolbox has been proposed.**

German tools

Spatial plans have an influence on the planning process as early as at the phase of choosing the location, by thematic maps based on the assessment of sensitivities.

Regulation of intervention has achieved that more buildings are being fitted into the landscape, while investors put more emphasis on environmentally friendly planning, as the payment of compensation can significantly increase the investment costs. The nationwide use of *eco-accounts* can reduce the loss of ecological values, while municipalities can speed up the execution of proposals stated in landscape plans using *precompensation*. However, neither of these tools proved to be efficient regarding the building-in peripheries and non-settlement areas. Therefore, new exemptions and restrictions are being introduced in Germany in order to restrict building intentions in these areas.

Elements suitable for introduction into the Hungarian regulation system

I have marked the general idea behind *regulation of intervention* – assessment of the impacts of building in unbuilt areas and determining the natural elements and systems being affected – as an example to follow when assigning new building areas and building possibilities.

Investments may be steered towards urban transitional areas and brownfields using *compensation*. Compensation calculations, which form a part of the urban plans, should take into consideration the local ecological and scenic values, landscape pattern and the impact on typical land uses and landscape potential.

Thesis 7.

- **The Hungarian and German regulatory and planning tool systems for landscape protection have been compared. As a result, both the significant differences between the regulations of content requirements of plans and the similarities regarding integration with urban planning and law enforcement have been determined.**

The Hungarian Act on Nature Conservation does not name landscape planning as a planning tool of landscape protection. In German practice, based on the German Federal Act on Nature Conservation and Landscape Management, spatial plans form an obligatory and partially independent four-level planning system. Their methodology enables the readily understandable presentation of environmental risk (landscape carrying capacity), which is the base for strategic environmental analysis. Landscape plans do not have any enforcement power in most German states either. However, while in Hungary they are incorporated into urban plans by primary integration, in Germany, this happens by secondary integration. The advantage of

secondary integration is that the landscape plan is created as a standalone documentation, which systematizes landscape management tasks for the municipalities beyond the reach of urban plans as well.

Thesis 8.

- **The Hungarian and German land use compensation systems have been compared. The landscape protection aspects of the German system have been determined and a proposal for the development of the Hungarian system has been made.**

When comparing compensatory tools, I assessed the Hungarian system of calculation of biological activity units and the German system of eco-accounts, as both make the identification and compensation of changes related to land use change possible. While the Hungarian system only takes into account the area of biologically active surfaces and the number of vegetation layers, the German system also considers the species composition and ecological role (e.g. nesting or feeding place) of the habitat, the scenery of the area, as well as the impact on environmental media – similarly to environmental impact assessments – and the nature of the investment.

I propose the following elements for improving the Hungarian system:

- assignment of target areas for compensation,
- elaboration of proposals for targeted measures on each target area, based on the landscape planning and green surface proposals of the urban plans,
- consideration of habitat characteristics and ecological aspects during the assignment of compensatory measures.

These elements can improve the efficiency of the current compensatory system. The compensatory measures fitted to the characteristics and development concepts of municipalities can be systematized, thus improving the empowerment of municipal-level landscape protection.

CONCLUSIONS

One of the main tasks of landscape planning on the municipal level is to represent the interests of landscape protection, regarding the protection and shaping of landscape pattern and landscape character, the protection of landscape potential and scenery and the conservation of unique landscape features by integration into the urban planning system. However, determining the values is in itself not enough, an appropriate set of instruments is also necessary for their protection.

In my dissertation I have assessed the existing planning and regulatory instruments vertically and horizontally, along with professional and legal documents (landscape plan, environmental assessment, environmental programme, calculation of biological activity, regulation for the preservation of local heritage) that do or may have a direct or indirect landscape protection aspect. I have determined the landscape protection aspects of the internal instruments for urban planning and the controversies and threats the current system of land use categories holds.

I have put an emphasis on the importance of tools determining and influencing the assignment of land use categories, including those that involve or allow building. As a result I have identified that – from a landscape protection point of view – the urban structure plan has a decisive role in the conflict-prevention process of landscape planning, therefore I have made a suggestion for the content requirements of the landscaping sectoral plan for assigning new building areas.

I analyzed the municipal plans and the documents considered to be part of the external set of planning tools of the municipalities in the Szentendre-sziget (Szentendre Island) subject area as a control for the presence of landscape conservation aspects of laws in everyday practice. I determined their actual landscape protection content, the tendencies in land use changes and the impact of legal protection on landscape character.

As a result of my research I have created a thorough analysis of the German system and evolution of landscape protection-related landscape planning and regulation of intervention, and proposed elements that could be introduced into Hungarian practice in order to improve the representation of landscape protection goals and principles. To do this, it was necessary to determine the similarities and differences of the Hungarian and German planning and regulatory systems. I have given a critical assessment on the efficiency of German regulatory and planning instruments influencing building outside the settlement boundaries.

In conclusion, in my thesis I have assessed the Hungarian set of tools for landscape conservation associated with landscape and urban planning and proposed an extension to it based on an analysis of German regulation.

The author's publications related to the dissertation's topic

Scientific periodicals and conference proceedings:

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