First International Conference "Horticulture and Landscape Architecture in Transylvania"
Agriculture and Environment Supplement (2011) 68-79

# Landscape design tasks based on the *Budavidék Greenway*

Judit BÁRCZINÉ KAPOVITS, Ágnes SALLAY,
Attila CSEMEZ

Department of Landscape Planning and Regional Development
Corvinus University of Budapest
Faculty of Landscape Architecture
e-mail: kapovits.judit@gmail.com, agnes.sallay@uni-corvinus.hu,
attila.csemez@uni-corvinus.hu

Manuscript received April 2011; revised August 2011, accepted August 2011

**Abstract:** The *Budavidék Greenway* is a network of routes for the use of walkers and cyclists. It consists of former cart-tracks. We regard this network as a new land-use form in an agricultural and forestry landscape. The first tasks were the identification of land-use conflicts and the development proposals linked to the use of the greenway. Our current research activities are concerned with the opportunities offered by the 'classic' greenway model. The banks of the *Békás* Brook seem appropriate to the establishment of a streamside greenway. The other possibility is on the route of a disused railway line, in the vicinity of *Biatorbágy.*

**Keywords:** land-use form, land-use conflicts, cart-tracks, classic greenway models

## 1. Introduction

In our current article we shall review the landscape design tasks related to Hungarian greenways in light of the experience gained in the course of the *Budavidék* Greenway Alliance's work, and of the research and educational work we have carried out in order to realise the aims of the greenway programme. We see the location of the *Budavidék* Greenway (the Zsámbék Basin) – as a model region, which – due to its diverse landscape qualities and the support it enjoys within the local community – can serve as a good model for the classification of

Hungarian greenways, and determination of the tasks appropriate to potential categories of greenways in Hungary.

The productive specialist collaboration can provide the basis for establishing the landscape design of Hungarian greenways through further research assignments. For this it is equally necessary to carry out evaluation of currently designated greenways in Hungary and the analysis of case studies on greenways outside Hungary. It is essential for the continued existence of already designated greenways and the creation of new ones that greenways be incorporated into regional planning, and later that a legal and technical regulatory system for greenways be developed.

## *Background*

By way of introduction to the landscape design tasks for Hungarian greenways, we should first review the results so far of greenway programmes completed abroad, and initiatives in Hungary.

The ‘greenway’ concept first arose in the United States in the 1970s as a result of the realisation of the damaging effects of excessive car use, and as an expression of the growing desire for a healthier lifestyle. The design and then construction of greenways – routes for non-motorised transport – was in response to demands from American civil organisations. The first greenway plans were developed by the Hungarian-born professor of landscape architecture Julius Fabos and his departmental associates. Greenways designed with spatial planning methods primarily ran alongside large rivers, and were multi-functional (principally for walking, cycling and horse riding). Routes suitable for non-motorised transport were also planned on many disused railway lines, also with the aim of encouraging healthy leisure activities and lifestyles. The routes were both with hard surfacing and without. And so the original greenways in the ‘classic’ sense were planned and constructed along river valleys and disused railway lines.

The main aim in the creation of European greenways was, as with the American versions, to form green corridors which encourage participation in a healthy lifestyle, together with a significant amount of green area development. Presentation of local natural and cultural assets, the development of tourist potential and civil participation became important parts of greenway programmes. Despite this broadening of aims, the definition of ‘greenway’ used by the European greenways association unambiguously refers to the creation of routes for non-motorised transport. Greenways can have hard surfacing, and sections of surfaced cycle route form part of certain greenways. The most important criteria are that the routes can be used safely, and that they extend into the centres of settlements.

The theoretical possibility for the planning of a Hungarian greenway occurred in 2001, when the South Buda Region Green Belt Pilot Project was designed at the Landscape Design Department of Szent István University. Those who worked on the project interpreted the concepts of 'green belt' and 'greenway' in the way they had come to be known in international specialist literature on the subject, and they examined the landscape design opportunities for the formation of a green belt in the region of Budapest. There was no practical follow-up to this contemporary conceptual foundation, however.

Later, the Hungarian Environmental Partnership Foundation (*Ökotárs Alapítvány*), as a non-profit civil organisation, started to concern itself with the formation of greenways in Hungary. Since 2005 members of the foundation have been initiating the creation of greenways in Hungary in accordance with guidance from Central and Eastern European Greenways (CEG). The first Hungarian greenway was the *Danube-Ipoly* Greenway, the spine of which is provided by a cycle route running between Budapest and the towns of Vác and Szob, to which smaller dirt tracks and study trails are connected at certain locations. In connection with the *Danube-Ipoly* Greenway, civil organisations have marked out the *Path of our Heritage* Greenway, on dirt trails running between meadows. In the area of the Pilis range of hills, certain forest tourist routes which are also suitable for cycling have been marked out as greenways. The first greenways marked out in Hungary have placed great emphasis on tourist developments along their routes.

This brief overview shows that the conceptual content of the term 'greenway' is quite rich, and indeed we could also say that the concept of 'greenway' has undergone a significant change from the 'classic' American model to the Hungarian version of greenways. An increasingly diverse range of routes are being designated as greenways, and an increasing number of possibilities are linked to them.

The process of this change in meaning is particularly striking from a landscape design perspective, as in realising the stated goal (the marking out or creation of spaces for non-motorised transport), the following are factors are relevant:

1) the influence of natural features on feasibility
2) new land-use possibilities resulting from land-use characteristics
3) the possible emergence of land-use conflicts
4) the nature of possible burdens arising
5) the nature of the specialist/professional background needed for realisation
6) the nature and extent of financing for continuous maintenance

Therefore from a landscape design perspective, we can further see greenways as valuable linear green space elements in the landscape, and the function of greenways as a new land-use form appearing in a given landscape, and as a tool for preserving landscape potential.

## *The design process for greenways*

The design process for greenways we recommend consists of the following parts:

- Demarcation of area
- Landscape analysis from the perspective of the creation of a greenway
- The selection of possible routes
- The evaluation of sections of route
- Agreement with specialist authorities and owners
- The resolution or avoidance of land-use conflicts
- Determination of route types
- Development of recreational and/or tourism proposals

## *Demarcation of the area*

The area demarcation of a planned greenway route or greenway network depends on needs which should be articulated, and on the organisation which is initiating the plan. The demarcation can occur:

1. at the request of one or more local councils
2. according to the needs of a sub region or geographical domain
3. in connection with a nationwide programme
4. at the request of a civil organisation
5. on the route of a disused railway line
6. along the valley of a river or stream
7. as a result of another type of request

The area demarcation of the *Budavidék* Greenway was carried out by the civil alliance which initiated the project, aligned to natural geographical borders. The field of demarcation is the Zsámbék Basin, a geographical domain which encompasses the settlements within the basin of the Békás Brook: The ‘Budavidék’ name refers to literary references to the traditional wine-growing area.

Landscape zoning based on natural features integrates with geographical zoning determined by the Hungarian academy of sciences. With respect to regions used in statistical planning, the settlements of the *Budavidék* Greenway belong to several sub regions, but in terms of regional planning the designation of the Zsámbék

Basin as a geographical domain is possible, and its demarcation is supported by a strengthening awareness of the regional interdependence of the settlements included.

### *The selection of possible routes*

An important starting point for the selection of possible greenway routes is the analysis of historical maps. Former trading roads, smaller cart-tracks and the routes of railway lines are rationally chosen routes (with optimal gradients and lengths between settlements), which are suitable for use by both pedestrians and cyclists.

Sections of route can be:

- existing roads and streets with light traffic use
- existing forest roads
- existing agricultural roads
- the routes of disused railway lines
- the banks of rivers and streams
- newly-built sections, where necessary

## Methods

Under the direction of the Department, in the 2009/ 2010 and the 2010/2011 academic year landscape architecture students studying Co-ordinated Landscape Design outlined the landscape design tasks associated with the greenway routes around twelve settlements, according to the following methodology:

- evaluation of the results of civil initiatives up to until now
- problem identification
- determination of tasks awaiting solutions
- research work
- survey of terrain
- university departmental consultations
- consultations with local councils
- presentations for civil organisations, local councils and relevant authorities at the Buda Campus of the Corvinus University of Budapest
- submission of six-month assignment (examination and evaluation)
- development of landscape design recommendations
- preparation of summarising posters

The following subject areas needed to be worked on for development of the examination work phase:

- the concept of 'greenway'
- natural and societal characteristics,
- regional planning schedules
- landscape and nature conservancy areas
- articulation of recommended greenway routes (features of the terrain, road surface, accompanying green areas, landmarks, outstanding viewing points)
- ecological systems and system elements worthy of protection
- cultural heritage and unique landscape assets
- land-use conflicts

We paid special attention to the determination of elements of the ecological system worthy of protection. Those of outstanding interest are the surviving natural waterside confluences of the Zsámbék Basin's principle catchment area and the *Békás* Brook, the surroundings of springs, the environs of Lake *Biai* and Lake *Kozáromi.*

Another task in addition to monuments found alongside or opening off greenway routes was the naming, cartographic depiction and evaluation of the condition of unique landscape assets. On the basis of surveys there was also a need to depict outstanding viewing points and panoramas.

Alongside recommended routes, several land-use conflicts are also observable:

- pot-holed, neglected road surfaces
- treeless agricultural areas (erosion)
- a scarcity of regenerating green areas (absence of avenues of trees)
- presence of stray dogs
- illegal tipping of refuse
- difficulty in following routes due to inadequate signage

After designation of routes, land-use conflicts could be caused by:

- the relationship between greenways and existing/ planned public roads
- varying features of terrain

In the second half of the academic years, in line with the task requirements, landscape design recommendations were to be developed in the following subject areas:

- resolution of land-use conflicts
- development opportunities for sections of greenway route (road surface, landmarks)

- designation of recreational areas, draft plans
- recommendations for tree planting along roads (locations, suggested tree species)
- graphic elements (route signage, information signs)
- possibilities for the formation of road surfaces
- junctions between greenways and public roads
- planning of study trails

Students had to develop landscape design recommendations based on the tasks expressed in the examination work phase, and develop detailed plans for some areas.

The following recommendations were put forward for the resolution of land-use conflicts:

- development of design possibilities for road surface formation for seven existing conditions
- establishment of windbreak strips of forest adjoining fields
- roadside tree planting
- acknowledgement of the greenway network in the course of design processes
- organisation of a ranger service
- marking of terrain features
- marking out of greenways on asphalt and with signs
- elimination of illegal refuse tipping

## *Recommendations for the resolution and avoidance of land-use conflicts*

In the course of the development of the plans for the *Budavidék* Greenway we have paid special attention to the surface treatment of routes outside the centres of settlements, and the problems arising from the use of greenways in relation to parallel agricultural activities. For the solution of this problem, students carried out a study in the area of Tök – one of the settlements – and have taken part in continuing meetings with the leader of one of the most important agricultural organisations.

In the study, the students articulated and depicted the main land-use conflicts. We have evaluated the regional cycle route-study plan proposal prepared for the route. The evaluation has shown that:

- we cannot designate the most frequently used routes as greenways during periods of agricultural activity
- forming a stabilised dirt track on one half of the width of the cross-section of dirt tracks is not a practical solution
- the more intensive maintenance of sections designated as greenway could be a solution
- on some sections an independent greenway lane could be formed
- it is advisable to plan the planting of trees along sections that could be designated as greenway in connection with agricultural tree planting

### *Agreements with specialist authorities and owners*

For optimal selection, routes must be agreed with the following affected parties:
- land owners and managers;
- the local councils of settlements;
- specialist authorities.

This is because in most cases the greenway will be a new land use, linked to:
- the activities of farmers in the area;
- area and settlement space planning processes;
- the capacity of environmentally protected areas.

The plan for the greenway network must be finalised from an agreements perspective.

Finalisation can be influenced by:
- relations with land owners and managers;
- planned new area functions and infrastructure elements;
- agricultural practice (on the main agricultural routes) ;
- hunting activity;
- plant protection activity.

The most important part of agreements with local councils is the incorporation of greenways into the process of area and settlement space planning.

A primary task in the design regulation of greenways is determination of a usable definition in the design of greenways in Hungary, and of the legal, technical, ecological and financial conditions for formation according to desired modes of use.

As a first step I recommend determination of a usable concept of ‘greenway’ for the design of such features. A good foundation for the creation of a definition is

provided by findings from the establishment of greenways both within and outside Hungary. As a next step one must group greenways according to existing and planned uses (pedestrian, cycling, horse-riding, waterborne, and mixed use), and in combination with various land uses (built-up areas, agricultural, meadow, forest, waterside).

Related to existing and potential greenways, there is a need for sample cross-sections representing minimal and optimal solutions, and examples of recreational areas on greenways, with special regard to potential development of green areas. Based on findings from further research, the formulation of technical guidelines for greenway design may become necessary.

### *Route types*

Several types of greenway can be created on the area of the *Budavidék* Greenway. Old cart tracks form the spine of greenway routes which can be marked out around and between settlements. These greenways can primarily serve to expand the recreational opportunities for residents of the Zsámbék Basin.

The development of the following design tasks is needed for the high-quality realisation of the proposed greenways:

- the identification of land-use conflicts and of potential solutions ;
- the guaranteeing of protection of landscape assets;
- the development of the presentation of landscape assets and their development possibilities;
- the design of green space development;
- the design of rest areas;
- the design of the identity and associated graphic elements.

Alongside streams and disused railway lines there is the possibility for ‘classic’ greenways to play a role at regional or national level, and for them to be tourist resources.

A primary task in the design regulation of greenways is determination of a usable definition in the design of greenways in Hungary, and of the legal, technical, ecological and financial conditions for formation according to desired modes of use.

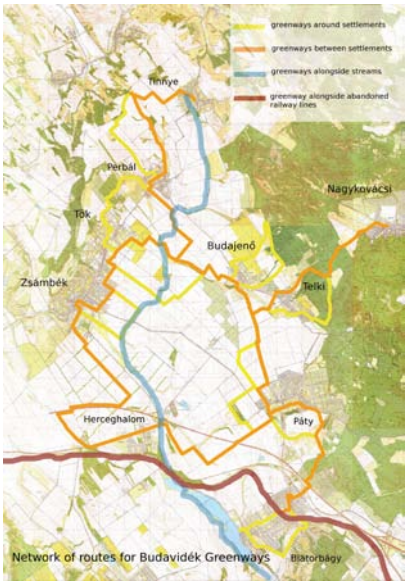


*Figure 1*: *Network of routes for Budavidék Greenways*

As a first step I recommend determination of a usable concept of 'greenway' for the design of such features. A good foundation for the creation of a definition is provided by findings from the establishment of greenways both within and outside Hungary. As a next step one must group greenways according to existing and planned uses (pedestrian, cycling, horse-riding, waterborne, and mixed use), and in combination with various land uses (built-up areas, agricultural, meadow, forest, waterside).

Related to existing and potential greenways, there is a need for sample cross-sections representing minimal and optimal solutions, and examples of recreational areas on greenways, with special regard to potential development of green areas. Based on findings from further research, the formulation of technical guidelines for greenway design may become necessary.

It is important to emphasise that for all types of greenway, wider popularisation for tourism can only occur after resolution of land-use conflicts; it is recommended that across the entire area of the greenway network there should be uniformly safe surfaces, route markings and signs at suitable intervals before routes are more intensively used.

- Design tasks linked to the tourist use of greenways;
- the marking out and design of central rest and information points (buildings);

- the provision of accommodation facilities;
- provision of organised tours and guide information;
- incorporation of local produce and the goods of local providers.

Part of the work for the Ph.D. Thesis under preparation is identification of a generally applicable design method for optimal selection and classification of routes.

## Results and Discussion

The *Budavidék* Greenway programme started as a civil initiative. As a result of civil collaboration a route proposal suitable for pedestrians and cyclists emerged, which connects the neighbouring settlements of the Zsámbék Basin. The route network has formed around traditional cart-tracks, separated from public roads with high traffic flow. As part of the civil initiative, alongside routes route marker pillars have been placed, which are of distinctive design and are reminiscent of old boundary marker stones.

The landscape design tasks carried out to further develop the *Budavidék* Greenway programme are linked to the 2001 study prepared by the Department of Landscape Planning and Regional Development at the Corvinus University of Budapest, which deals with the possibilities for the creation of a system of green corridors in the area of the Budapest Agglomeration. Numerous examples in the United States and Europe show landscape design solutions for ‘classic’ greenways; analysis of these and the opportunities specific to Hungary are necessary, as well as a design system for the establishment of a Hungarian greenways.

Due to the diverse features of the Zsámbék Basin, the appropriate roles and possibilities of certain types can be determined through the classification of proposed greenway routes across the area of the *Budavidék* Greenway.

It is essential for the continued existence of already designated greenways and the creation of new ones that greenways be incorporated into regional planning, and later that a legal and technical regulatory system for greenways be developed.

Just as with the *BudaVidék* Greenway, it is essential for the continued existence of other Hungarian greenways that they at least appear on local structure plans, and that thus, for example, the junctions between greenways and bypasses relieving traffic pressure on the centre of settlements become a design task. the creation of new greenways can be assisted if after the research and identification of routes of historical significance in the landscape they can feature at the various

levels of regional planning as valuable elements in the structure of the landscape – even as possible greenway routes.

## Acknowledgements

Publishing of this journal is supported by the Institute for Research Programmes of the Sapientia University.The article was made with the cofinancing of TÁMOP-4-2.1.B-09/1/KMR- 2010-0005

## References

[1] A. Csemez; L. Kollányi; K. Kovács; E. Rosivall; Á. Sallay: *Zöldfolyosórendszer kialakítása* [Formation of a System of Green Corridors], *Dél-Budakörnyéki Zöldöv pilot projekt* [South Buda Region Green Belt Pilot Project], (*Budapest, Szent István University, Department of Landscape Planning and Regional Development, 2000*) Natural England: Greenways Handbook *(Scheffields, 2002)*

[2] Zs. Foltányi: *Zöldutak Magyarországon* [Greenways in Hungary], (*Budapest, Ökotárs Alapítvány, 2005*)

[3] K. Budai: *Zöldútravaló* [Ready for the Greenway], (*Budapest, Ökotárs Alapítvány, 2007*)

[4] J. Bárcziné Kapovits, A. Csemez, Á. Sallay: *Tájépítészeti kutatási feladatok a magyarországi zöldutak fejlesztésénél* [*Landscape Design Research Tasks in the Development of Hungarian Greenways*], (*Gödöllő, Tájökológiai Lapok, Szent István University, Institute of Environmental and Land Management, 2009*)

[5] Á. Sallay, J. Bárcziné Kapvits: *Zöldúttervezés* [Greenway Design], (*Budapest, Lippay scientific session, 2009*)

[6] Judit Bárcziné Kapovits, Dr. Ágnes Sallay, Dr. Attila Csemez: Opportunities for the development of greenways in Hungary, based on the example of the BudaVidék Greenway *(Budapest, Corvinus University of Budapest, Faculty of Landscape Architecture, Department of Landscape Planning and Regional Development, 2010)*

[7] A. Csemez: *Tájtervezés-tájrendezés* [Landscape Design, Landscape Organisation], (*Budapest, Mezőgazda Kiadó, 1996*)