

**CORVINUS UNIVERSITY OF BUDAPEST
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LANDSCAPE ARCHITECTURE AND DECISION SUPPORT SYSTEMS**

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**LANDSCAPE ARCHITECTURAL PRICIPLES AND METHODS OF SMALL
WATERCOURSE RESTORATION**

PhD thesis

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Antecedents

Due to the geomorphologic and hydrographic conditions of Hungary, highland small watercourses are characteristic natural elements of landscape structure, considering their great number and geographic arrangement. In consequence of aspects of water management in the last decades, their importance in landscape structure decreased, their functions transformed remarkably damaging landscape state of stream valleys and catchments. Inland waters and floods, problems of water quality, landuse and environmental-aesthetic conflicts that occurred in an increased amount at the end of the 20th century drew the attention to the anachronism of water management. The renewal to be seen in 'integrated water management' by the referred sciences and professional management (*L. Somlyódy, I. Láng, Gy. Reichand, Z. Simonffy*). The acceptance of Water Frame Directive of the European Union in 2000 integrated water management gained international legacy within the member states. This led to development of researches (*J. Gayer, Gy. Heltai*) that are related to catchment areas of streams and based the adaptation of the Directive in Hungary.

In the last decade, primarily by initiatives coming from below, stream restorational programs appeared which are technical plans that mainly did not deal with the environment of streams. These plans and programs are also lack of complex landscape architectural aspects, which are based on comprehensive landscape ecological view but also give answers to landscape planning detail problems. The reason for that is not only the seemingly new approach of the theme but also the low number of landscape architectural researches on stream restoration, compared to other sciences, mainly ecology (*G. W. Minshall et al., L. Tent, A. Stöckmann, I. Dahlmann, K. Margóczy, V. Istvánovics, F. Standovár, Palmer et al.*). The science of landscape architecture in Hungary still has not summarized reclamation principles of stream-side landscape planning and haven't elaborated scientifically based planning methods to define landscape architectural tasks of this particular reclamation.

Objectives

Targets of my research are

- *to reveal landscape architectural characteristics of highland small watercourses*, which help to describe the subject of reclamation and characterize its recent state
- *to reveal characteristics of highland small watercourse planning*
- *to define reclamation principles of ideal stream-side landscape in the 21st century*
- *to elaborate planning method for highland watercourse reclamation*
- *to define reclamation tasks on a sample area*

Material and method

The basis of the research is the *critical analysis on relating literature*, which I completed with own *field research*, *planning experiences* and a *questionnaire survey*.

As the first step I approached the theme on the basis of former research results on water planning aiming ecological restoration by which I precised the subject of the research. I mainly used research results of *T. Hazslinszky, F. Szarvas, F. Papp, Gy. Lotz, M. Harkay, Gy. Bognár, L. Kaliczka, L. Madarassy* and *B. Hajós*, and also *P. Calow, G. E. Petts* and *G. Gunkel*. Research antecedents of *Csemez* and *Csima* gave basis to interpret reclamation and to define main notions. I summarized planning methodical antecedents based on scientific results of *L. Miklós* (regarding landscape assessment), *A. Csemez* (regarding landscape planning), *E. Bardóczyné Székely et al.* (regarding analysis on small watercourse catchment areas) as well as *P. Csima* and *A. Göncz* (regarding landscape capacity).

As the second step I defined landscape architectural characteristics of highland small watercourses. I summarized hydrologic characteristics emphatically based on the publications of *K. Stelczer, J. Padisák* and *K. Koris*, geomorphologic characteristics based on the publications of *K. Mike, M. Pécsi, J. Szabó* and *J. Lóki*. To define ecological characteristics I leant on relating research results of *F. Dinger, G. W. Minshall et al., Gy. Dévai, P. Gulyás, B. Csányi, I. Gyulai, Fekete G. et al.*, as well as *B. Mihály* and *Z. Botta-Dukát*. Concerning the state of Hungarian small watercourses I took the descriptions of *E. Bardóczyné Székely* for basis. I revealed the history of small watercourse engineering on the basis of the works of *P. Pongrácz, D. Ihrig, K. Póczy* and *Paládi-Kovács*.

As the third step I revealed practical fulfilment leaning on highland small watercourse planning by case studies published in international and Hungarian periodicals.

As the fourth step I completed the synopsis of landscape characteristics of stream-side landscape planning and characterization of the state of Hungarian stream-side landscape with my foreign field experiences (*Wienfluss* in Vienna and *Mauerbach*) and results of my Hungarian field researches (*Hosszúréti stream, Séd stream at Veszprém* and *Jósva stream*).

As the fifth step I revealed the characteristics of Hungarian practice by personal interviews and questionnaire survey, ended up at 5 national park directories and 5 water management directorates, which are responsible for highland catchment areas.

As the sixth step I base the landscape architectural description of small watercourse planning and the definition of reclamation principles on my own

settlement and green space planning as well as landscape design experiences relating on the environment of small watercourses.

As the seventh step I defined restoration types of highland small watercourse management and also the reclamation principles based on the scientific and practical antecedents revealed by literature, field survey and the previously mentioned questionnaire.

As the eighth step I elaborated reclamation planning method based on the principles summarized before. Within that I based the elaboration of an evaluation method that helps to define restoration stages, which I based on *M Rasper's* ecomorphologic valuation methodology developed for defining 'good (ecological) state' of surface water elements.

As the ninth step I examined the applicability of reclamation planning method on the example of Hosszúrési stream. I chose sample area by taking into consideration the extent and location of catchment area, basic natural conditions, usage, its state of transformation, its environmental state and spatial development tendencies on the catchment area. I drew general inferences about the method based on the results of the examination of the sample area. Finally I made proposals on practical utility of the results of my research.

Results

1. Landscape architectural definition of the stream and stream-side landscape

After reviewing the professional literature of stream planning and reclamation I gave the **landscape architectural definition of stream**. From landscape architectural approximation the *Hungarian highland small watercourse is a natural landscape element*, which – in interaction with other natural and artificial landscape elements – defines the structure of the stream-side landscape. Its state influences landscape potential, it is basic factor of landscape character and it is carrier of culturo-historical and aesthetic values. Therefore, in place of the phrase of small watercourses used in technical sciences I gave an other definition of stream, which is unambiguous and besides the technical side of the task it covers better further ecological and aesthetic aspects as well as the culturo-historical and economic importance of restoration. *In my interpretation stream is a natural or transformed small highland surface watercourse, the catchment area of which is smaller than 1000 sqkm, its length runs from the spring to its estuary at the river and it is shorter than 100 km. Its watersystem also includes the watersystem of its side-braches. Beyond that, its water planning means mainly highland water planning tasks, except low and estaurine sections.*

For the elaboration of reclamation principles and method and enforcement of landscape architectural views I defined a special landscape fragment that contains the stream so called the stream-side landscape. This

differs from the approximation of other disciplines dealing with stream planning, which separate the stream and the catchment area as the subject of restoration. *According to its scale, stream-side landscape is a functional and aesthetic unit located between catchment area and stream. Therefore, its extent and more widespread consideration of factors defining reclamation provides an opportunity to enforce landscape reclamation principles.* To describe streamside landscape I defined static and dynamic features. By these features **I separated and characterized 7 landscape unit types of stream-side landscape and related stream types:** sylvan, meadow, field, garden, rural and suburban, urban and patchy streamside landscape and accordingly sylvan, meadow, field, garden, rural and suburban, urban and patchy stream. **After hydrologic conditions I divided stream-side landscape to landscape planning zones** to define reclamation tasks within landscape unit types and field specific stream types. The zones are as follows: *water body, streambed, streambank, recent floodplain, former floodplain and the joining unflooded area that constitutes the border of streamside landscape* (fig. 1.).

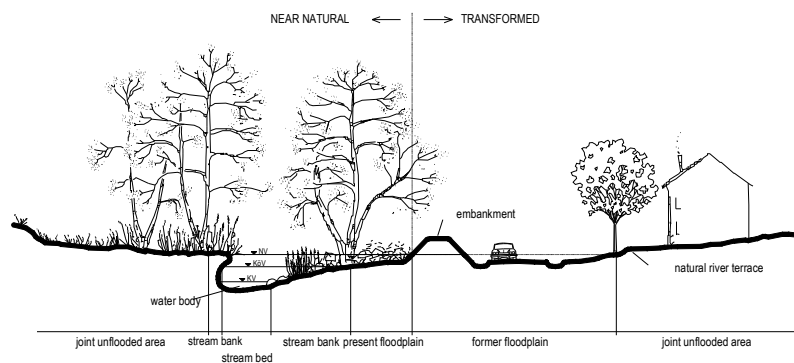


Fig. 1. Landscape planning zones of stream-side landscape presented in cross section

2. Analysis on Hungarian specialities of streamside landscape

Relying on the observations of literature research and field range **I summarized and characterized the state of the Hungarian stream-side landscape and revealed the generally definable antecedents of landshaping.** *I appointed that urban, rural and suburban as well as field stream-side landscapes are the most transformed types and their states are the most unfavourable.* I defined the possible reasons for unfavourable state in increasing rate of development areas, in inconsistent infrastructure development, in

unregulation of water use settled on streams, in inconsistent social role and reduced economic value of streams and in inconsequential water management policy.

Contrasted with the previous types, it can be generally ascertained that *the lowest scale of intervention happened in sylvan and meadow streamside landscapes, so these types are transformed least of all, therefore, their landscape state is more favourable.*

3. Landscape architecture point of view definition of stream restoration

Based on Hungarian and foreign professional literature about stream planning I overviewed, after the variability of landscape planning tasks I analyzed and systemized main notions and reclamational stream planings in countries with different conditions. Based on this overview ***I defined stream reconstructure, its aims and tasks from landscape architectural point of view.*** I discussed technical and ecological restorational part tasks of reclamation in details, emphasizing plant application. I typified restoration in various ways after main features. ***I marked 11 restoration types after 4 aspects.*** I defined 2 types (complete and sectional) after the length of linear streambank concerned with restoration, 2 types (punctual and linear continual) after the kind of restoration interventions, 2 types (concerning 1, concerning more landscape planning zones) after concerned transversal landscape planning zones, 5 types (simple or complex technical, simple or complex habitat restoration, complex stream restoration) after proportion of technical and ecological restoration tasks. Thereafter ***I interpreted habitat restoration types*** elaborated and used at the *Department of Landscape Preservation and Reclamation* **from reclamation point of view of streamside landscape.** I defined 5 types of habitat restoration after difference between recent and desired state and the method and measure of human intervention. These are as follows: *reconstruction, transformation, creation, replacement and spontaneous renewal.*

4. Critical analysis on stream restoration in Hungary

After literature research and interviews ***I made a critical analysis on recent state of Hungarian stream restoration that has not been published in professional literature so far.*** I ascertained that the Hungarian stream reconstruction is not uniform, sometimes contradicted in point of the subject of restoration, restorational aims and principles. It concentrates on certain elements of landscape or certain part areas of stream-side landscape as subject and its characteristic participants are Local Governmental Water Associations and have nature conservational NGOs instead of state agencies. As the results of the research mentioned above I also defined the Hungarian limits of stream-side landscape restoration. ***After analysis on Hungarian stream-side landscape restorations I ascertained that they are mainly constructed after unique technical solutions concerning certain part areas of the bed and the bank***

and they do not cover stream-side landscape. *Planning tasks are stated along general engineering and ecological principles while functional principles advancing restoration of bed and bank use, landscape ecological principles of treating the stream-side landscape as one unit and aesthetic aspects aiming landscapic fitting are rarely outlined, often overshadowed.*

5. Definition of reclamation principles of stream restoration

The key of restoration is the fact that the stream as the subject of the act should be held as culturo-historical natural element, not as linear technical infrastructure element. This approximation basically defines planning principles and method. As one of the most important basic principle of restoration I laid down that the aim has to be the reconstruction of the dynamically developing system of streamside landscape, not conditions of a former state. At first I defined *general landscape architectural principles*, thereafter *land use, landscape structural, technical water planning and principles of earthwork following part tasks restorational, plantation, plantuse principles, principles related to elements of small architectural and design elements and principles aiming restoration of scenic conditions.*

6. Elaboration of landscape restoration planning methods of stream-side restoration

I elaborated the restoration method by which the possibilities and part tasks of stream restoration can be defined. The two most important features of planning method are *hierarchy in scale* and *differentiated territorial division from restoratinal point of view*. In the course of landscape assessment *I analysed 3 hierarchic territorial levels: I ascertained factors influencing reclamation* in the level of the *catchments*, the *stream-side landscape* and within that, emphatically regarding the *stream itself*. By that, the factors influencing restoration directly and indirectly and defined in 3 scales, and the interaction of these factors can be examined more widespread. The 3-level assessment gives the opportunity to define the reclamation tasks of reconstruction both from the direction of territorial planning revealing the catchment area and from the aspect of planning the stream as a linear landscape element. The success of restoration is ensured by definition of factors defining restoration on the level of catchment's territory, stream valley and the stream itself.

7. Elaboration of stream evaluation method from restorational point of view

I elaborated an evaluation system, by which a certain stream can be divided further from the point of view of restoration, the necessity and possibility of restoration can be specified. The basis of the method is to have *4 sequential valuation steps*. In the first step the degree of transformation of stream(section) (25 criteria), in the second step its deflection from the

destination state aimed by restoration (22 criteria), in the third step the necessity of restoration (21 criteria) and finally in the fourth step the possibility of restoration (9 criteria) can be ascertained. The method is elaborated by using the *ecomorphological evaluation of M. Rasper*. I built in the main aspects of this dissertation into the valuation of the alteration of the stream. The number of valuation criteria belonging to the steps indicates the importance of the certain step compared to the other ones. Therefore I did not weight further the value indexes. I classified stream section to 3 different value categories step by step. ***By contrasting the 3-level value categories I defined the types of the restoration sections of the stream. These types advance the possibility of territory-specific and restoration type point of view differentiation of restoration tasks.***

8. Definition of restoration section types of the stream

After the reclamation tasks of a stream ***I defined 8 restoration section types***, which characterize the degree of alteration of stream, the deflection of landscape unit from destination state aimed by restoration, the necessity and possibility of restoration. Restoration section types are as follows:

1. *Stream-side landscape unit with near natural stream sections, no restoration required*
2. *Stream-side landscape unit with near natural stream sections, requiring small-scale or partial restoration*
3. *Slightly degraded stream-side landscape unit with near natural bank sections, where restoration encounters serious difficulties*
4. *Moderately altered stream-side landscape unit with partial necessity of restoration*
5. *Moderately altered stream-side landscape unit, where restoration encounters serious difficulties*
6. *Moderately or remarkably altered stream-side landscape unit, suitable for complex restoration*
7. *Moderately or remarkably altered stream-side landscape unit with small-scale or partial necessity of restoration*
8. *Remarkably degraded stream-side landscape unit with altered bank sections, where restoration encounters serious difficulties*

By defining restoration section I considered geomorphologic character of section and dissections made by hydrologic, hydrobiologic and even water planning point of view. ***Definition of restoration sections subserves in stream restoration the enforcement of landscape ecological and aesthetic principles used in landscape planning.***

9. Application of planning method on sample area

By the elaborated ***assessment method*** I revealed ***restoration possibilities of stream-side landscape of Hosszúréti stream at Budaörs and in the course of***

valuation I divided 29 restoration sections, classified in 7 section types. In the course of the assessment of the sample area I certified the practical application of assessment and valuation method. In the course of valuation of Hosszúrési stream I excluded the artificial still waters on the stream from the valuation, because their morphologic, ecological and landuse features notably differ from the features of running waters.

Conclusions and proposals

In the course of my research on restoration aspects of stream-side landscape planning I approached the theme primarily from the point of view of land use, landscape ecology and landscape scenery. The results of my research can be utilized on more areas of small watercourse research, landscape planning and landscape architectural education.

- My definitions and characterization of stream and stream-side landscape helps landscape ecological researches dealing with definition of stream-side ecological corridors. Linear landscape unit, which is based on hydrologic and geomorphologic conditions, integrates land use and can be visually divided and sensed, promotes explanation and functional and territorial definition of ecological corridors.

- Static and dynamic features defined in the course of the research and describing catchment area and stream-side landscape complete the landscape ecological characterization of catchment area as well as the stream-side landscape. Elaboration of landscape architectural methods of catchment area restoration related to stream-side landscape and definition of reconstruction tasks on the level of catchment area gives further research tasks.

- Critical analysis on historic and recent use of Hungarian stream-side landscape and on its landscape unit types as well as description of landscape scenery conditions completes landscape assessment of spatial planning and master plans. It helps the description of other elements of landscape assessment not only by expanding examination informations relating to stream valleys but also by giving method of revealing conditions.

- Planning method reviewed in the dissertation can be utilized by elaboration and development of construction and management methods of stream restoration.

- My research results relating Hungarian stream-side landscape, case studies I processed and which interpret foreign and Hungarian state of stream restoration as well as restoration principles I elaborated can be utilized in the education of the discipline of landscape restoration that is completed in point of planning method.

- Restoration principles of stream restoration as well as planning method – emphasized valuation aiming definition of restoration sectors – serves a basis for a planning handbook, which extends restoration to the whole stream-side landscape and completes the practice of stream planning.

In the course of my research I kept in view all along the researches of international and Hungarian landscape architecture and hydrology and water planning ended up in similar topic or area. Compared to landscape architectural principles I considered at the greatest rate the relating instructions of the European Union Water Frame Directive and the results of Hungarian researches on practical applicability. This is the most important directive relating to reconstruction of surface waters. As distinguished from other researches, I see the streamside landscape I defined as 'the landscape framework' of emergence of general landscape architectural principles, executability of certain tasks of landscape planning, as well as restoration of Landscape-Stream-Human relation in an other territorial unit.

Publications joining with the topic of the dissertation

Scientific articles, other issues

- Nagy, I.R.* (2001): Kisvízfolyások revitalizációs lehetőségeinek vizsgálata és értékelése. *Tájépítészet* **2** (3): 40-43.
- Báthoryné Nagy, I .R.* (2005): Kisvízfolyás-rendezések tájvédelmi szempontjai. *Tájökológiai lapok* **3** (1): 27-35.
- Nagy, I. R. – Novák T. J.* (2005): A kisvízfolyás helyreállítás geomorfológiai háttere és hazai megjelenése. *4D* **1** (1): 56-61
- Almás, B. – Nagy, I. R.* (2005): A szabadtér használat új dimenziói. *4D* **1** (1): 5-8.
- Nagy, I. R. – Novák T. J.* (2007): A hazai vízfolyás-helyreállítások fogalomhasználatáról. *Hidrológiai Közlöny* **87** (1): 40-45
- Nagy, I.R.* (szerk.) (2005): *Víz – Táj - Rendezés- Wasser-Landschaft-Inszenierung*. Tanulmánykötet. BCE Tájvédelmi és Tájrehabilitációs Tanszék. 66 p.
- Nagy, I. R.* (2007:) Az Ördögárok In: Novák T.J. (szerk)(2007): *Víz és Város – Budapest és Bécs. Waaser und Stadt – Wien-Budapest*. pp. 78-85.

Scientific proceedings and their publications joining with the topic

- Nagy, I. R.* (2000): A Hosszúréti-patak revitalizációs lehetőségeinek vizsgálata (absztrakt) Országos Felsőoktatási Környezettudományi Diákkonferencia 2000. április 17-19. Debrecen. p.168.

- Nagy, I. R.** (2000): Kisvízfolyások rendezésének tájépítészeti szempontjai (poszter) Lippay János-Vas Károly Tudományos Ülésszak (*Landscape architectural aspects of the planning of small watercourses – poster*) 2000. november 6-7. Budapest
- Nagy, I. R.** (2001): Kisvízfolyások revitalizációs lehetőségeinek vizsgálata és értékelése (absztrakt) Tavaszi Szél 2001 Konferencia. 2001. április 20-22. Gödöllő. pp. 120-121.
- Nagy, I. R.** (2001): A Hosszúréti-patak vízgyűjtőterület tájhasznosításának elemzése Szent István Egyetemi Napok 2001. augusztus 29. Budapest (*Analysis on landuse of catchment area of Hosszúréti stream*)
- Nagy, I. R.** (2001): Restoration possibilities of small creeks as significant infrastructural elements in Hungary (full paper) ECLAS Annual Conference, Arnhem-Velp, Hollandia, 2001. szeptember 13-16. Velp, Hollandia. pp.84-90.
- Nagy, I. R.** (2001): Kisvízfolyások revitalizációs lehetőségeinek vizsgálata a Hosszúréti-patak példáján (full paper) Magyar Földrajzi Konferencia. 2001. október 25-27. Szeged. pp. 1131-1135.
- Nagy, I. R.** (2004): Kisvízfolyások rendezésének tájépítészeti elvei és gyakorlat. A patakrendezés társadalmi vonatkozásai (full paper) V. Táj történeti Tudományos Konferencia – Víz a tájban. 2004. június 1-3. Szarvas pp. 127-131.
- Nagy, I. R. - Novák T.J.** (2004): A folyóvízrenaturáció nemzetközi gyakorlata és hazai megjelenése (full paper) Magyar Földrajzi Konferencia. 2004. szeptember 2-5. Szeged. pp. 1257-1267.
- Báthoryné Nagy, I. R.** (2004): A kisvízfolyás-revitalizáció tájvédelmi kérdései (absztrakt) I. Magyar Tájökológiai Konferencia, 2004. szeptember 17-19. Szirák. p. 47
- Nagy, I. R.** (2005): Urban Creek Restoration In Hungary (absztrakt) *Urban River Rehabilitation Conference* In: Tourbier, J.T. - Schanze, J. (szerk.)(2005): *Urban River Rehabilitation-Proceedings*. International Conference on Urban River Rehabilitation URCC 2005 (Absztraktkötet) Technische Universität Dresden és Leibniz Institute of Ecological and Regional Development, Dresden. pp. 316-318.
- Nagy, I. R. – Novák T.J.** (2005): A kisvízfolyás-rehabilitációk geomorfológiai alapjai és hazai gyakorlata Lippay János – Ormos Imre – Vas Károly Tudományos Ülésszak 2005. október 20-21. Budapest. pp. 98-99.
- Nagy, I. R.** (2006): Patakparti város - patak a városban. Városi patakok rehabilitációs lehetőségei (full paper) II. Magyar Tájökológiai Konferencia, 2006. április 7-9. Debrecen (in press) (*Streamside city – stream in the city. Reclamation possibilities of urban streams*)
- Nagy, I. R.** (2006): Fővárosi patakhasználatok történeti alakulása (*Historical development of streamuses in the capital*) VI. Táj történeti Tudományos Konferencia, 2006. június 28-30. Tokaj

Lectures joining with the topic

Nagy, I. R. (2003-): A vizes tájak rehabilitációja (20 x 45 perc). Budapesti Corvinus Egyetem, Tájépítészeti Kar, Tájvédelmi és Tájrehabilitációs Tanszék, tanévenként meghirdetett kötelező szakirányos tárgy *Tájrehabilitáció* tantárgy keretében (*Reclamation of wet landscapes – in the frame of subject of Reclamation, compulsory subject in every year for students at the Dept. Of Landscape Reservation and Reclamation, Faculty of Landscape Architecture, Corvinus Univ. Budapest*)

Nagy, I.R. (2003-): Kisvízfolyás – rendezés – történet (20 x 45 perc). Budapesti Corvinus Egyetem, Tájépítészeti Kar, Tájvédelmi és Tájrehabilitációs Tanszék, szemeszterenként meghirdetett fakultatív tárgy (*History of small watercourse planning – facultative/optional subject in every semester students at the Dept. Of Landscape Reservation and Reclamation, Faculty of Landscape Architecture, Corvinus Univ. Budapest*)

Nagy, I.R. (2007. július 11.): Ecological functioning of urban green structure – focusing on creek valleys (4 x 45 perc). International Summer School of Planning and Design Urban Green Structure. Warsaw University of Life Sciences – SGGW, Faculty of Horticulture and Landscape Architecture, Department of Landscape Architecture. 2007. július 9-22.

Plans joining with the topic

Nagy, I. R. (2000): A Hosszúréti-patak fővárosi szakaszának revitalizációs terve. Diplomaterv. Konzulens: Kincses Krisztina (*Revitalization plan of the section in the capital of Hosszúréti stream – Theses*)

M. Szilágyi, K. – Barcza D. – Nagy I. R. (2000): A Törőfej-völgy parkerdei fejlesztési terve és a Jósva-forrás revitalizációs terve. I. ütem: Programterv, II. ütem: Környezetrendezési terv. Megbízó: Aggteleki Nemzeti Park Igazgatósága. Saját munka: tervezési program, Jósva-forrás és a Jósva-patak helyreállítása, partváltozatok. (*Development plan in parkforest of Törőfej valley and revitalization plan of Jósva spring – 1st rate: programplan, 2nd rate: landscaping. Principal: Directory of Aggtelek National Park. Own work: planning program, restoration of Jósva spring and Jósva stream, bankvariations*)

Csima, P. – Nagy, I. R. (2002): A Veszprémi-Séd menti közterületek szerkezeti és szabályozási terve. Megbízó: Veszprém Megyei Jogú Város Polgármesteri Hivatala. Generál tervező: A.D.U. Építész Iroda Kft. Saját munka: szakági alátámasztó munkarészek, környezetvédelmi és zöldfelületi szabályozás (*Structural and regulation plan of public places*)

- along Séd stream in Veszprém. Principal: Mayor'Office of Veszprém. General planner: A.D.U. Architerct Office Ltd. Own work: professional supporting parts, green area and environmental regulation)*
- Csima, P. – Gyarmati, K. – Nagy, I. R.** (2005-2006): Veszprém turisztikai programkínálatának bővítése a Benedek-hegy és Séd-völgy zöldfelületi rehabilitációjával – Zöldfelületrendezési Tanulmányterv. Megbízó Veszprém Megyei Jogú Város Önkormányzata. Generál tervező: A.D.U. Építész Iroda Kft. Saját munka: zöldfelület-helyreállítási program, ökológiai folyosó terv, Séd rehabilitáció terve partváltózatokkal, környezetvédelmi munkarészek (*Expansion of touristical programs of Veszprém by reclamation of Benedek-hill and Séd valley – green area planning study plan. Principal: Mayor'Office of Veszprém. General planner: A.D.U. Architerct Office Ltd. Own work: green area restoration program, plan of ecological corridor, reclamation plan of Séd with bankvariations, environment conservation parts*)
- Csima, P. – Gyarmati, K. – Nagy, I. R.** (2005): Veszprém Séd-völgyének zöldfelületi rehabilitációja – Környezetrendezési tervek. Megbízó: Veszprém Megyei Jogú Város Önkormányzata 2005. Generál tervező: A.D.U. Építész Iroda Kft. Saját munka: Időpark környezetrendezési terve, Vidámparki-tavak környezetrendezési terve (*Green area reclamation of Séd valley in Veszprém –Landscaping plans. Principal: Mayor'Office of Veszprém. General planner: A.D.U. Architerct Office Ltd. Own work: Landscaping plan of Timepark, Environment plan of fun-fir pak lakes*)
- Csima, P. – Gyarmati, K. – Nagy, I. R.** (2005): Veszprém, Séd parti játszókert kertépítészeti engedélyezési terv. Megbízó: Veszprém Megyei Jogú Város Önkormányzata. Generál tervező: A.D.U. Építész Iroda Kft. Saját munka: program, környezetarchitektúra elemek terve (*Landscape architectural plan for approval, of playing garden in Veszprém, Sédbank. Principal: Mayor'Office of Veszprém. General planner: A.D.U. Architerct Office Ltd. Own work: program, plans of environment architecture elements*)
- Csima, P. – Nagy, I. R.** (2006): Döbrönte Bitva Park Szabályozási terve és helyi építési szabályzata. Megbízó: Döbrönte Község Polgármesteri Hivatala. Generál tervező: A.D.U. Építész Iroda Kft. Saját munka: alátámasztó munkarészek, környezetvédelmi és zöldfelületi szabályozás (*Regulation plan and local building regulation of Bitva Park in Döbrönte. Principal: Mayor'Office of Döbrönte. General planner: A.D.U. Architerct Office Ltd. Own work: supporting parts, environment conservational and green surface regulation)*