

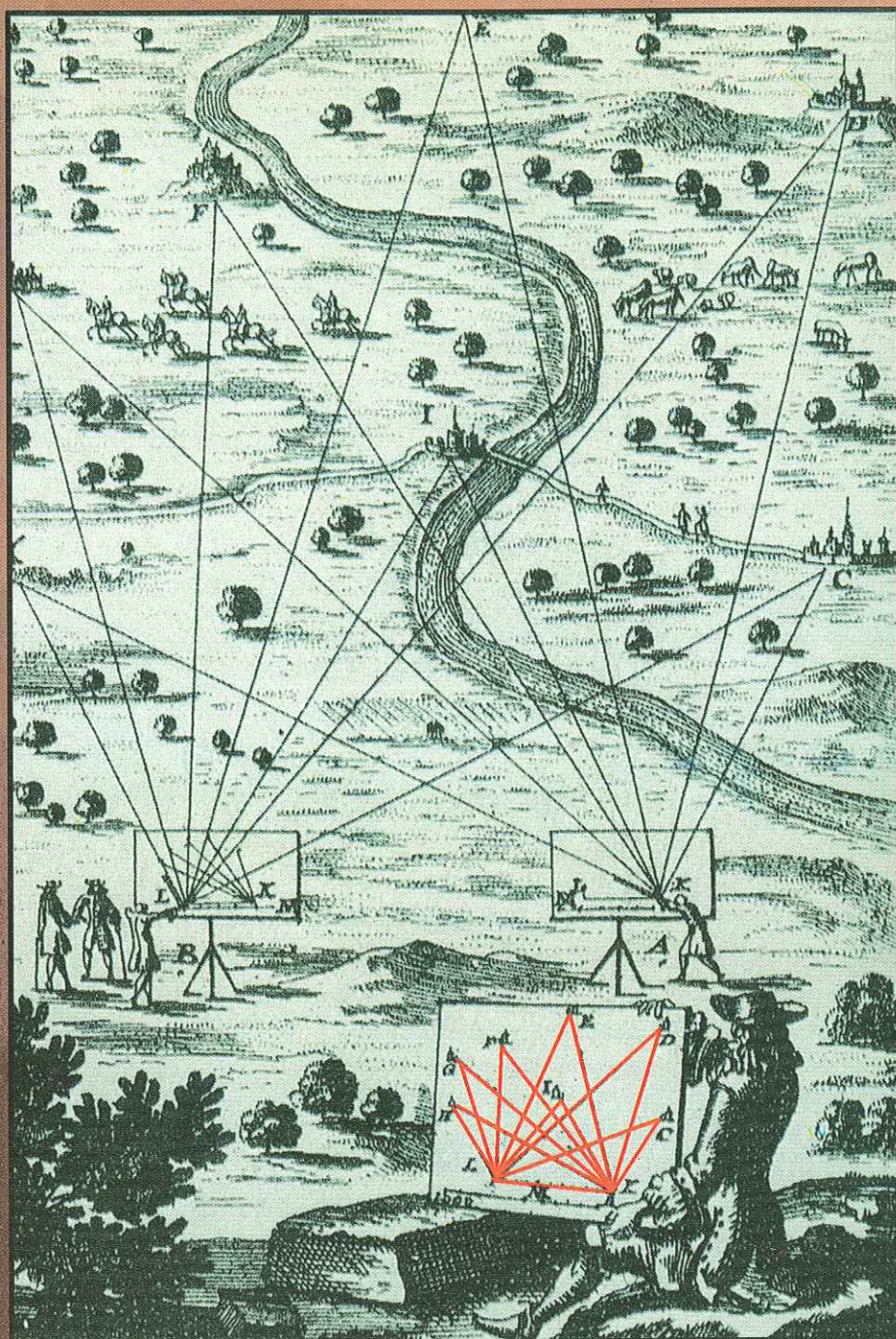
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SCOPE AND AIMS

The review is concerned with a multi-disciplinary approach to regional and urban planning and architecture, as well as with different aspects of land use, including housing, environment, etc. It attempts to contribute to better theoretical understanding of a new spatial development processes and to improve the practice in the field.

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APPROACH TO THE REGIONAL PLAN ELABORATION

-The Case of Kolubara District-

Dimitrije Perisic, Slobodan Mitrovic, Sasa Milijic

The explicit regional planning experiences in Serbia have been elucidated upon the case of the elaboration and implementation approach of the Kolubarski district regional spatial plan. Specific circumstances going along with the plan's elaboration demanded the advancement of the regional planning methodology with an efficient approach in defining a strong working team organisation, and clear temporal and spatial guidelines. Furthermore, the means were required for the communication improvement between planners and interested groups on the national, regional and particularly local level so as to determine development goals and mediate conflicting interests.

In the preparation and consideration of this spatial plan's elaboration phases, the cooperation between the planners and responsible authorities and expert agencies of the municipalities of Valjevo, Lajkovac, Ljig, Mionica, Usecina and Ub was particularly valuable and useful. The same goes for the Kolubarski district, the Agency for construction and development of the Kolubarski district affected by the earthquake and other expert institutions, organisations and enterprises from this planning region. The achieved cooperation provided for the quality and actuality of the planning propositions and the ensuing approval by the local communities smoothed the Spatial plan's implementation.

Key words: *Regional spatial plan, planning, implementation, Kolubarski district, local community, municipality.*

INTRODUCTORY REMARKS

The Spatial Plan of the Republic of Serbia planning propositions and guidelines and the Act on planning and spatial and settlement organisation foresee the regional spatial plan elaboration for one or more functional areas or districts. The regional spatial plan determines the spatial and socio-economic development goals and strategy, the regulations regarding the spatial organisation and sets guidelines for the plan's implementation. The regional spatial plan of the Kolubarski district (subsequently: Regional plan) is the first plan of its kind after the adoption of the Spatial plan of the Republic of Serbia (subsequently: PPRS). The preparation and the adoption of this plan is part of the further elaboration of the PPRS and its appliance.

The immediate reason for the elaboration of the regional plan were the earthquake's consequences additionally stressed by the damages caused by the NATO aggression. Under such circumstances, the major task of the regional plan is to offer development strategies and spatial planning responses, which would enable the safeguarding of values and this

area's long-term economic potentials evaluation. Moreover, the planning base ought to be proposed for a more rationale and efficient renewal and life quality enhancement in endangered areas.

APPROACH TO THE REGIONAL SPATIAL PLAN ELABORATION

The special circumstances and conditions of the Regional spatial plan's elaboration demanded an efficient approach, especially in preparatory activities, which comprised: an extraordinary working team organisation, determination of the partakers' responsibilities and relations with other subjects in the plan's elaboration, consultations with responsible authorities and institutions, preceding insight and verification of the available documentation and the program's conceptualisation for the Regional plan's elaboration.

The working team organisation included precise assignments for the planning expertises preparation, i.e.:

- The course of action from the point of temporal, spatial and contents points of view;

- The PPRS' excerpt for the Regional plan's area, verifying the actuality of postulated goals to serve as a platform of the plan's superstructure;
- Sectors assessment and goals innovation at responsible ministries and public enterprises, scientific and professional institutions at the Republic's tier;
- The assessment of the actual programs compatibility for the Regional spatial plan area with corresponding goals at the Republic's tier;
- The consideration and interpretation of the development strategy adopted by the Republic after the PPRS and the documentation from the public debate on the PPRS in the Kolubarski district;
- The requirements synthesis on additional information by the contributors of single expertises.

In the Regional plan's elaboration approach, particular attention was dedicated to the communication improvement between planners and interested parties at the national, regional and especially local level in order to determine development goals and reconcile

conflicting interests. In all preparatory and working phases, the emphasis was upon the engagement of responsible subjects of the Republic, municipal agencies, and professional institutions in the district with the aim of collaborating with the planners' team. This was not only for the sake of governing responsibilities and the official democracy tenet in the plan's preparation and adoption process but all the more for the will to partake in the planning process using authentic information, experiences and ideas of institutions and individuals, especially in district's municipalities. The extensive cooperation of the local governance subjects and the expert team, with an ample feedback in all working phases, substantially added to the quality, acceptability and feasibility of the planning propositions.

The operational communication and coordination of those working on the plan with the Republic's organs was conducted through the Agency for Spatial Planning and Urbanism of the Construction Ministry and at the local district tier through the Public Enterprise for the Construction and Development of the Kolubarski district. Furthermore, direct contacts were set up between planners and municipalities' agencies and commissions to facilitate the plan's preparation, assessment and adoption.

In cooperation with all six municipal expert authorities of the Kolubarski district following activities were carried out:

- The compilation of the planning documentation and additional data available to the municipal authorities;
- Interviews with authorised representatives of municipal assemblies with regard to development problems, goals and priorities and the compatibility assessment of the local programs with ongoing development policy on the Republic's tier; this was specially elaborated and passed on for the verification by municipalities; such initial identification of problems and interests of the local community significantly influenced the decision making in the ensuing planning;
- The organisation of terrain visits for all members of the synthesis team;
- Assigning coordinators for each municipality and forming municipal cooperation and supervision commissions.

The accomplished cooperation added to the planning propositions quality and actuality and through their acceptance by the local community to the Regional plan's implementation.

Regional plan's' subject matter

The Regional plan's subject matter is the territory of the Kolubarski district encompassing municipal territories of Valjevo, Lajkovac, Ljig, Mionica, Osecina and Ub, covering an area of 2474km² and ca. 200000 inhabitants.

This Regional plan as a long-term strategic development document with the temporal horizon until 2020 determines:

- Guidelines and modalities of socio-economic and spatial integration throughout the district, but also with regard to bordering districts, the Belgrade's metropolitan region, the Republic of Serbia and the Reblilic of Srpska;
- Long-term development conception and the organisation of construction, arrangement, protection and use of the Kolubarski district territory.

Regional plan's content

The Regional plan contains: the plan's documentation base, development strategy and the plan's draft.

The Regional plan's documentation base consists of: basic facts and maps from the analytical and documentation material, the synthetic assessment of the state of the art and developmental goals with an elucidation of the planning propositions conception. Moreover it consists of further documentation concerning the elaboration (conditions and prerequisites of responsible authorities and organisations together with the information on the working team engaged in the plan's working out), expert control, public insight and expert debate on the Regional plan's draft.

In the documentation base preparation, the Kolubarski district was covered together with parts of other areas determined by spatio-functional requirements of particular systems

and activities development or natural areas and tourism regions reach defined by the Spatial plan of the Republic of Serbia. Common spatial factors for the plan's expertises elaboration were: the Republic of Serbia, the District as an entity, mezzo-regional entities (plains and valleys up to 250 m height, hilly areas from 250 to 500 m and mountainous areas above 500 m), municipalities and rural areas.

In the development strategy determined were: the planning solutions (goals) proposal, priority list, policies and means for the plan's realisation, limits of the population and settlements development, natural resources use, economic development, technical systems development, tourism development and acceptable seismic risk planning.

The Regional plan's area development strategy and the plan's draft phase were considered and adopted by the responsible municipal assemblies, organs of the Kolubarski district, the Agency for the Construction and Development of the Kolubarski district afflicted by the earthquake, other institutions and organisations of the area in question and the Commission for the expert control of spatial plans of the Ministry of Urbanism and Construction. The standpoints and findings of this strategy were seen as a valid base for the Regional plan's draft elaboration.

The Regional plan's draft includes: the general objectives and rationales; natural resources protection and use (agricultural and forested areas, water, mineral and energy resources); population development projection; settlements and centres network organisation, public services organisation; industrial development; infrastructure plan (water management, energy, transport and telecommunication systems); development, organisation and arrangement of tourism areas; environmental protection, nature and cultural heritage protection; protection from elementary disasters; planned land use balances and regulations as to the appliance and implementation of the plan. Besides, the plan's draft also includes digital graphic presentations: the reference map 1 "Land use", the reference map 2 "Settlements, centres and infrastructure networks" and the reference map 3 "Tourism and spatial protection plan" with the scale 1: 50000.

The spatial plan's draft were pondered in detail and adopted by the responsible municipal assemblies, organs of the Kolubarski district, the Agency for the Construction and Development of the Kolubarski district afflicted by the earth-

¹ The Regional plan of the Kolubarski district was worked out at the Institute of Architecture and Urbanism of Serbia and the Yugoslav Institute of Urbanism and Housing. The working team for the Spatial plan elaboration were: Dimitrije Perišić, PhD, (conception and methodology) Slobodan Mitrović (team leader), Saša Milijić, MSc and Aleksandar Vukicević, MSc (team's coordinators), Aleksandar Veljković, PhD, Marija Maksin Mičić, PhD, Mirko Radovanac, Slavka Zeković, PhD, Dragiša Dabić, MSc, Vuk Radević, PhD, Milan Medarević, PhD, Marija Nikolić, PhD, Branislav Djordjević PhD, Nenad Djajić, PhD, Željko Jež, Dubravka Pavlović, Gordana Džunić, etc.

quake, and the Commission of the Construction Ministry. In October 2002, the Government of the Republic of Serbia passed on the Act on Regional spatial plan of the Kolubarski district.

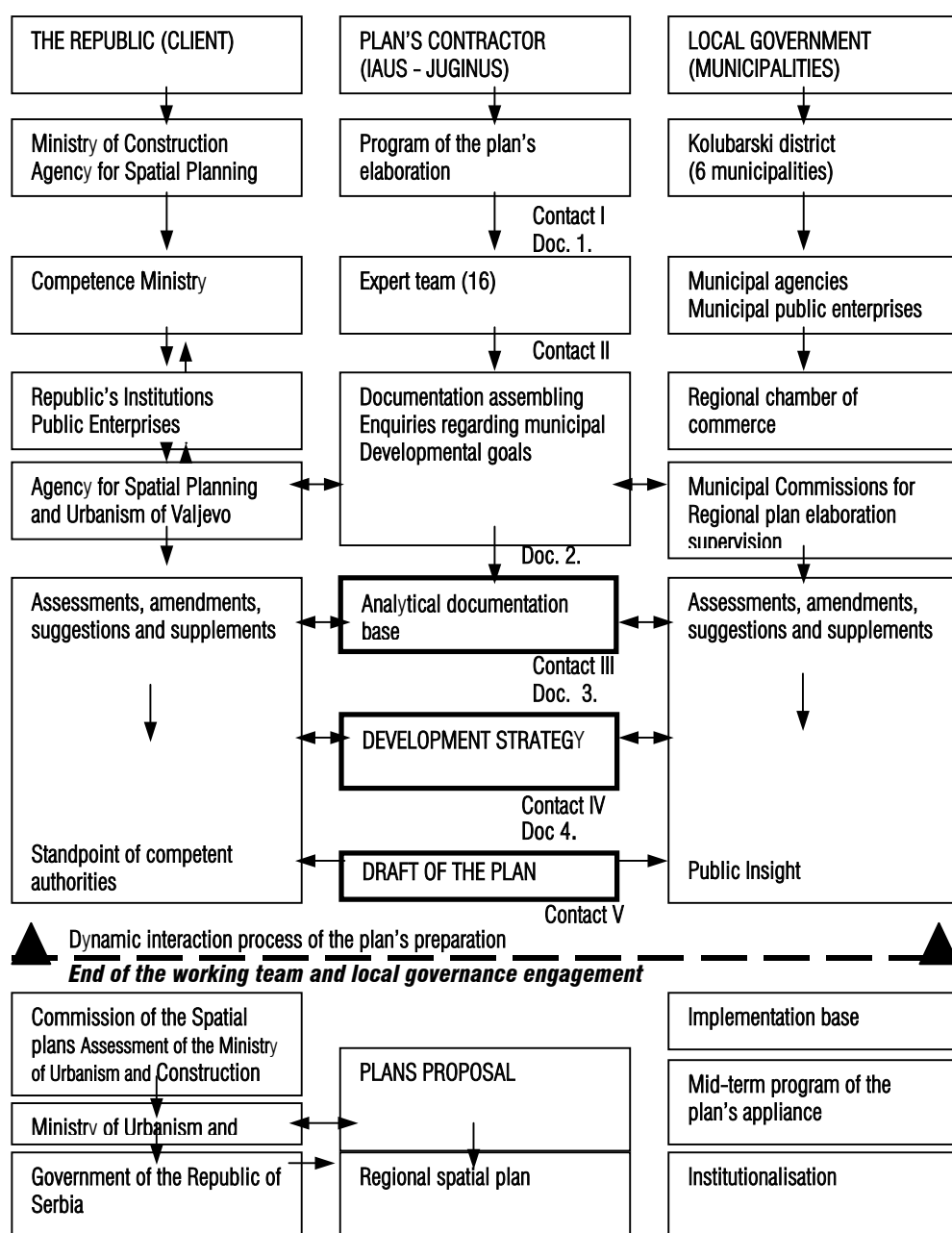
Unfortunately, because some relevant regulations in the existent legal acts were missing, in the procedure of the plan's propositions approval (without the participation of the local governance and the planning team), the compensation as the most important reclamation measure and local community development stimulus was blocked off. The introduction of

such balancing measures between local and national interests (particularly in the case of the lignite basin) is expected in the new legislative, as one of prerequisites of development planning documents implementation.

On the Fig.1, the cease of the planning process is evident at the point when the plan's draft is separated from the planning team and the local government. Namely, after the critical assessment of the expert commission of the Construction Ministry, the Ministry itself and the Government undertake further action of the

plan's adoption and implementation. This is the neuralgic point of the planning process, from which starts the "chill out" of the local government's participant actors in the plan's preparation and working out, by which their role in the plan's implementation is being marginalized. This discontinuity problem in the planning might be surpassed by the new legislative, therefore it is important to expedite this process so as to ensure the continuity of the planning subjects active participation.

Fig. 1. - The organisation of the Regional plan's elaboration



BASIC PRESUMPTIONS AND STRATEGIC INTENTIONS OF THE REGIONAL PLAN

General objectives

The general objective of the spatial organisation and arrangement of the Kolubarski district is the rational spatial use in correspondence to the real natural and created resources potentials and long-term economic and social development needs. The accomplishment of this objective is achieved with long-term responses and measures:

- Dispersed-concentrated development model, i.e. functions decentralisation from centre/seat of the district to municipal centres (6) and from the municipal centres to rural communities centres (20). The rural concentration ought to head into the opposed direction towards rural communities as the socio-economic development carriers and further towards municipal centres and the district. This should be achieved by a more dispersed population distribution, as well as the economic and other activities distribution, predominantly founded upon the resource base of the Kolubarski district. The prerequisites for this objective are: decrease of the population and activities concentration in areas of intensive occupation and support of small and mid-size processing capacities, wherever the resources, technology and the location admit it; encouragement measures from state and other funds for the local communities development programs through the local and regional infrastructure construction and profitable enterprises; development efforts, marketing and information agencies concentration in the district's centre and municipal centres, whereas development programs and clean technologies projects (in processing industries, tourism, agriculture, crafts, etc) would be situated in rural areas, complying with principles of interrelated technology and economic practicability;
- Containing depopulation and improving the population age structure not only with spatial planning, but also economic, social and other policies; to realise this goal, those Regional plan propositions are important, which have an effect on a faster economic development, rural development, the economic advancement of agriculture and agricultural producers, the infrastructure and social standard development in centres of rural communities and other settlements, the communal standard increase and legal regulations for an equitable relation of the

public and individual interests and their equal legal protection facing state organs;

- Economic development harmonisation in respect to the market based production, innovation and efficiency boost supporting entrepreneurship, adjustment of integration and production programs to meet the demands of nearby and distant markets;
- Organisation, arrangement and land use harmonisation in accordance with protection needs of territory, population, activities, and natural and created resources relating to earthquakes and other elementary disasters;
- Environmental protection by preventing further degradation of natural resources and assets and putting an end to illegal and ineligible spatial use.

Focal strategic determinants

The key strategic determinant is the achievement of a higher degree of functional integrity for the Regional plan's area with the territory of the Republic of Serbia. Given the passable geographic and transport location and the planned infrastructure systems development in this area, it has been deemed most important to ensure the conditions for a better transport and economic integration of the planned region and environs foremost with adjacent functional regions, districts and the metropolitan area of Belgrade.

One of the major prerequisites is the improvement of the transportation accessibility. The construction of the Valjevo-Loznica railway would play a key role in achieving better integration with surrounding areas, foremost the area of Podrinje and Republic of Srpska, whereas the motorway would establish links with Vojvodina and Monte Negro. A more apt transport position to be accomplished by the realisation of these main infrastructure systems will evidently reflect upon the major economic development axes of the area (east-west and north-south) and especially upon particular urban and industrial centres.

The attainment of the higher degree of the Kolubarski district spatial integration implies the sub-regional disparities decrease, i.e. quality changes in the spatial, economic and social structure, especially in the hilly and mountainous areas with distinct dysfunctions of the social and economic development. The pivotal points of the more balanced sub-regional development are: (a) acceptance of real development factors; and (b) introduction

of stimulating measures by the state and other funds for the construction and development of the Kolubarski district with the purpose to develop local communities, construct the local and regional infrastructure and encourage profitable economic schemes.

The most developed sector of the planned area is and remains the agriculture, with the available agricultural supply, land quality, tradition associated with this activity, built capacities and developed cooperative sector, making it one of the most important development resources. This potential might engage some part of the working population, but it can't be count upon the increase of the working extent, because of the agricultural labour force surplus. The agricultural development intensification, especially the farming and cattle breeding would enable a faster development and diverse processing capacities founding.

The industrial development, especially the metal processing industry, with all due restructuring remains the skeleton of the development, further production and economic interrelations of this area with Belgrade, Smederevo, Cacak, Uzice and other industrial centres.

Part of the Regional plan's area (UB, Lajkovac) will found its development on the exploitation and processing of coal resources. For the parts of the mentioned municipalities the exploitation and processing of coal also figures as a constraining factor. The reasons lie in putting pressures upon agricultural land, relocation of the population and parts of settlements, and changes in the water regime. Last but not least, those households members formerly employed in agriculture might now be left without the basic economic existence. The use of the compensation policy will transform the energy development into the alternative developmental function for the districts' special use areas.

The exploitation of the non-metal mineral deposits (quartzite, kaolin clay, sandstone) enables the disperse growth of production and processing capacities in a number of smaller centres in the municipal areas of Ub, Lajkovac, Ljig, and Mionica. This calls for the indispensable intensification of the research, balance and assessment of the economic profitability of these minerals exploitation.

The comparative advantages of this area in terms of tourism development intensification and supplementary activities are based upon tourism resources of national importance (Valjevske Mountains, spas, rural areas,

monasteries, etc) and the development of a specific and recognizable tourism offer so as to facilitate the activation of new tourism areas and centres, beside Divčibare, Valjevo and Spa Vrujci. The key factor of a more complete valorisation of the tourism potential is the market vicinity of Belgrade and Vojvodina.

The distinct set back of the tertiary economic sector ought to be compensated and further intensified and diversified in accordance with the particular centres' functions within the settlement network and in line with rural areas development priorities.

Starting from the existent model of low population concentration and activity diversification in most municipalities of the Kolubarski district, the settlement fragmentation and the domination of the regional centre Valjevo, the settlements development aims at qualitative changes of the economic and socio-economic settlement systems structure.

The selective encouragement and harmonisation of the economic development with the general and individual standard development (founding of small and medium sized processing factories, local road network construction, upgrading of public departments and services, etc) would include next priorities: 1) rural communities with rural communities centres and larger more developed villages; 2) municipal centres; and 3) regional centre.

Particular economic activities decentralisation as well as the decentralisation of public services and activities of Valjevo and municipal centres towards rural community centres would contribute to the new developmental model of the spatial-functional areas organisation in rural communities. This is important for the more rational governing and organisation of the public services, a more qualitative fulfilment of the common consumption needs and more efficient local communities activity coordination.

The life quality improvement and the more rapid economic functions and public services development ought to be achieved as a priority in lesser-developed municipal centres, such as Osecina, Mionica and Ljig. Suitable policies with regard to new jobs creation, entrepreneurship, financing and investment policies and others would stop the population growth in Valjevo relative to the growth in municipal and rural communities centres.

Valjevo's further development should lie in the provision of a higher quality of regionally

important urban functions, especially the service sector, education, health service, culture, information and similar sectors. Invigorating Valjevo's regional role corresponding to the objectives of the Spatial plan of the Republic of Serbia and reflected in the de-metropolisation of Belgrade would bring about a certain degree of "emancipation" in relation to Belgrade's metropolitan functions.

The investment decisions on material production should strictly respect the location, technologic, economic and environmental protection criteria, adopted on the national and international tier. Public services programs and the present network assessment must be attuned with the economic development, financing capability and local communities idiosyncrasies, but also with certain areas development objectives. Public services development programs connote an adequate support from other sectors (in the first place the transport infrastructure).

Rural settlements and areas development in the form of the multifunctional production, social and cultural spaces and the strengthening of the rural households is the pivotal issue of the more balanced future development of the planned area. All rationales and strategies leading towards rural development and solving the problem of population development and distribution are, in a sense, specific goals of the overall comprehensive objective embodied in the image of a well off agricultural producer. In the strategic sense, this calls for qualitative and quantitative changes in rural areas based upon subsequent premises:

- Land property enlargement;
- Better transport accessibility, upgrading the level of communal and other services provision and the overall rural organisation (building and ambience);
- The shift from agricultural to mixed or non-agricultural population in tune with real agricultural development needs;
- Development of processing capacities in villages, especially in rural community centres linked with passable technology systems in or outside the planned area;
- Agricultural production diversification as to physical and geographical zoning conditions (valleys and plain areas are predisposed for farming and cattle breeding while hilly and mountainous areas for fruit growing and cattle breeding), bearing in mind new European trends concerning genetically modified agricultural produces and organic

agriculture. However, advantages for growing organic food (which is rather expensive, but also more demanded on the western market) prevail on hilly and mountainous areas.

One of the Regional plan's strongholds relates to natural resources safeguarding, their rational use and protection, especially of those, which are deficient and those important for the betterment of the life quality. The overall balance of the water resources and their spatial and temporal distribution necessitates the careful use and granted protection system from pollution and non-planned uses. Among this plan's priority determinations are the agricultural land protection, in particular the strict land conversion restriction (I-IV class) into non-agricultural uses, but also preserving the land quality and fertility. Equally important is to afforest or restore and enhance the forest quality. With this plan, the ground for a more efficient construction, land use and control is established and norms and propositions for the settlements construction and communal provision defined. In order to reserve space on time for public interest objects/areas in terms of construction and rational utilisation, the corridor use and spatial protection regimes have been determined referring to infrastructure corridors (in the valleys of Kolubara, Ljig, Ribnica and Obnica), the energy resources exploitation areas, catchments areas and spaces for water accumulations but also protected natural and cultural assets.

Furthermore, the emphasis was put on the environmental improvement and protection, safeguarding of valuable natural heritage and the preservation of large special use areas vital for the biodiversity and environmental quality. In the cultural heritage promotion and protection domain, the endeavours aim at changing the foregoing practice, which was characterised by regional relativism, the neglect for the environs in relation to the monument protection and a narrowed choice in terms of historic periods and heritage types.

For the accomplishment of the Regional plan it is necessary to undertake actions and activities within and beyond the planned area, but in ensuing priority directions:

- Activities linked to the spatial governance and the overall development;
- Advancement of the information base, as the prerequisite for tracking, controlling and assessing the plans propositions implementation;
- Coordination and creation of adequate

cooperation between the national, sub-regional and local tier in the implementation of planning decisions.

THE REGIONAL PLAN APPLIANCE AND REALISATION

The Regional plan contains a special section on the direct appliance and realisation:

- General propositions on special policies, measures and instruments for the plan's realisation;
- First mid-term period of the plan's appliance;
- Guidelines for the Regional plan's appliance by other plans and programs;
- Propositions concerning the program, institutional-organisational, information and research support in the plan's realisation.

More detailed determinants for the Regional plan's realisation for the time span until 2005 will be defined by a special mid-term program (beyond the Regional plan), which the municipal assemblies of the Kolubarski district will prepare together with the Agency for Construction and Development of the Kolubarski district afflicted by the earthquake, the Urbanism and Construction Ministry and other responsible competent organs and public enterprises. They are to be adopted within eight months after the adoption of the Regional plan. According to the planners' team expert opinion, the program should contain: the dynamics, conditions and activities for the development priorities realisation; measures and means for the programs implementation; modalities, procedures and responsibilities for the district's expert agencies coordination with municipal assemblies, public enterprises and institutions from the planned area, thus ensuring the cooperation and support of responsible competent authorities, special organisations and public enterprises outside the planned area in the programs realisation; scientific institutions, expert organisations and/or public enterprises authorized by the responsible municipal assemblies to carry out the expert work relating to the information base formation together with the indicators system monitoring the plan's and program's realisation; and the means and tasks for ensuring the institutional and organisational support in the realisation of the Regional plan and program, with a specifically defined role of the planners team in the ensuing planning process phases, set off by the Regional plan. Based on the mid-term program, the annual development programs will be prepared affecting the

construction and arrangement of the Kolubarski district area.

The municipal assemblies of Valjevo, Ub, Lajkovac, Ljig, Mionica and Osecina agreed to assign the Agency for Construction and Development of the Kolubarski District afflicted by the earthquake with the monitoring of the plan's realisation, the plan's appliance in other resulting plans and programs, acts and projects and their realisation. This should be done with the expert assistance of this plan's working team.

The municipal assemblies ought to determine the local governance organs, or individuals from these organs, which will cooperate with the Agency for Construction and Development of the Kolubarski District (subsequently: Agency), working on tasks covering their municipal territory in compliance with the program adopted jointly by the municipal representatives in the Agency's governing board.

The realisation of the cited Program and the resulting tasks involve backing the changes, and the expansion of the organisational structure, strengthening the professional staff and financing the Agency's work, by which the present functions of this public enterprise linked to the earthquake's consequences elimination would gradually alter and broaden. Therefore, a special Agency Act /Constitution ought to be adopted with decisions on the organisation and governance and the mid-term working program. Furthermore, the municipal assemblies should determine the institution of "the Report on the state of the art and organisation of municipal organs' expert services for planning (urban and other planning) and the inspection, on geodetic plans, etc". The concluding part of this Report will entail propositions for the organisational, professional staff and material advancement of the municipal expert services.

The Agency should adopt "The Program for the indicators base creation and their updating designed for the Regional plan" so as to: use, monitor and assess the implementation, supplement and innovate the planning conceptions and propositions. The indicators' base creation will be conducted on the basis of the Regional plan and its "analytic and documentation base" (Book I, which contains numerous relevant indicators and information, with several thousand indicators to the cadastre level).

Simultaneously, the Agency and responsible municipal assemblies should also adopt "the

Program of the central information support system organisation and functioning for the plan's implementation supervision". The centralised information support system for the plan's implementation supervision implies the work on the indicators in the Agency, which were gathered and updated by the responsible expert services or specially formed municipal organisation units from the districts' territory. Above all, it is necessary to assemble information on activities and work pertaining to the spatial use, organisation, arrangement and construction on the district's municipal territories. Founded on the assembled indicators and information, in the Agency, the verification and compatibility assessment of the planned and achieved spatial changes will be carried out against the Regional plan's conception and propositions. For these tasks realisation, special attention will be paid to ascertain standards with regard to planning definitions and project solutions or indicators so as to enable their comparison.

Based on the permanent monitoring results as to the plan's implementation, at least once in two years, the municipal assemblies expert services ought to decide on a joint Report on undertaken activities and problems in the implementation of the planned conceptions, solutions, guidelines and measures determined by the Regional plan. This Report should also comprise of propositions for the more efficient plan implementation. The Report will be passed on to the Agency for Spatial Planning and Urbanism of the Ministry for Construction and Urbanism, which will inform the Government of the Republic of Serbia and suggest measures for the more efficient implementation of the Regional plan, i.e. assess the justification for the revision procedure and plan's amendment instigation or further elaboration of the planning propositions on the regulation plan level.

CONCLUSION

Formulating the premises and conditions of the sustainable development, according to the basic development (reproducible) resources, as the local communities' long-term existential ground, by which the spatial and profitable land management potentials are considered, points to the new approach in the Regional plan's elaboration. These spatial and profitable management potentials are based on the compensation and other measures, but always in function of the national, regional and local interests integration.

For the desired intensification of the local community's development, non-renewable natural resources were used, by rule being the interests' subject of neighbouring, more developed regions. In previous, non-market conditions, raw material producers and the local community had the least advantage of these resources, whereas the last (by rule extern) user benefited the most. In the present market conditions, the national, regional and local interests are levelled by development documents enabling the equitable resource benefits distribution in terms of a balanced regional development. The basic investment means sources for the realisation of development purposes are the compensations, concessions, loans and other sources (direct foreign investments, private sector investments, etc) and the basic commercialising resources are land, mineral raw materials, energy, water and preserved nature, i.e. "development generators", which are being put in function through "leading development programs". Economic subjects in the Republic and broader (national and international interests) display the interest to exploit/organise the "development generators" resources. These are: energy potentials, functional interweaving with the Belgrade's

area, infrastructure corridors and the tourism offer. "Leading development programs" are priority/real development programs, which with the fastest and most efficient socio-economic effects are being accomplished, introducing an array of development programs in the organised development process (for the Kolubarski district area ensuing priority development programs have been stressed: the lignite basin, the catchments area of the hydro-accumulation of Rovni, the motorway Belgrade-South Adriatic, Valjevo mountains, etc).

REFERENCES

1. Regional spatial plan of the Kolubarski district afflicted by the earthquake, Official Register of the republic of Serbia, 70/2002;
2. Analytical documentation base-Book I, Regional spatial plan of the Kolubarski district afflicted by the earthquake, Institute of Architecture and Urbanism of Serbia, Yugoslav Institute of Urbanism and Housing, Belgrade, 1999.
3. Enquiry on developmental problems, objectives and priorities of the Kolubarski district municipalities, Regional spatial plan of the Kolubarski district afflicted by the earthquake, Institute of Architecture and Urbanism of Serbia, Belgrade 1999.
4. Development strategy, Regional spatial plan of the Kolubarski district afflicted by the earthquake, Institute of Architecture and Urbanism of Serbia, Yugoslav Institute of Urbanism and Housing, Belgrade, 2000.
5. The Act on Spatial Planning of the Republic of Serbia, Official Register of the republic of Serbia, 13/96;
6. Perisic, D., On Spatial Planning, Institute of Architecture and Urbanism, Belgrade, 1985.
7. Petovar, K., Societal concept and population relocation determinants in zones of changed land use, p. 13-18, Saopštenja No 21, Institute of Architecture and Urbanism, Belgrade, 1990.
8. The Manual on the content and elaboration of the spatial plan (1999): Official Register of the republic of Serbia, 1, p. 2-55

INDICATOR BASED CONTROLLING OF CANTONAL GUIDING PLANNING IN SWITZERLAND

A model for more efficient sustainable planning instruments at the regional level

Marco Keiner

In the actual Swiss cantonal planning practice every 10 years in general, there is a review of the guiding plan. The plan's evaluation typically takes place shortly before the revision process. In the interstitial time, the guiding plan's effectiveness can only be anticipated. In the review, a survey of both, the desired and unwanted spatial effects are often absent. As a result, a thorough analysis of the effects and the direction of the spatial development cannot be accomplished.

A spatial plan that is geared to the principle of sustainability needs the outputs of such an analysis. Development assessments are required to verify the plans' effects, well-defined goals to assist in rectifying deviations, key indicators to identify efficiency potentials, and precautionary measures to allow for an adaptable and responsive planning methodology.

The instruments, which might assist in the cantonal guiding plan objectives implementation, do exist. Such instruments are monitoring, controlling and benchmarking (with the support of indicators). These tools can assist in ensuring the plan's overall value and the effectiveness and appropriateness of the ensuing development. By using these tools and a sound planning methodology, unsustainable spatial development can be tracked early and rectified with appropriated measures.

The control as this system's central instrument is presented here and its application opportunities in the cantonal guiding planning are discussed. In order to achieve a sustainable spatial development and a more dynamic guiding planning, the application of control and benchmarking is crucial.

Keywords: *Spatial planning in Switzerland, guiding planning, controlling, monitoring, bench-marking, sustainable development, indicators*

A SHORT OVERVIEW OF THE ADMINISTRATIVE FRAMEWORK AND THE SWISS PLANNING SYSTEM

With a territory of only 41'285 km² (less than half the size of Serbia) Switzerland is one of the smaller countries in Europe. Switzerland is a federal state consisting of 20 cantons, 6 half-cantons and 3021 communes. The cantons are mainly small territories with an average size of only 1'588 km². In the political hierarchy, the Swiss cantons represent the second tier, sandwiched between the Confederation and the communes. Each canton or half-canton has its own constitution, parliament, government and subsidiary legislation (for example, spatial planning). In this sense, a canton corresponds approximately to a State in the USA in terms of its administrative status.

Despite their small size, nearly all cantons are again subdivided into planning regions. There are 138 such planning regions throughout Switzerland. The responsibility for the regional development concepts and regional plans' compiling may be undertaken by the cantonal administration, nonetheless the planning is usually delegated to the communes (local administration).

COLLABORATION AND CO-OPERATION IN SWISS PLANNING

The Federal Law on Spatial Planning, adopted in 1979, aims to develop vertical and horizontal co-operation between the different administrative levels, so as to easier respond in case of spatial conflicts. This upholds the Swiss tradition that power should be concen-

trated at the lowest possible level, while accepting that many spatial conflicts in reality, especially those that extend beyond cantonal or communal boundaries, can only be solved by co-ordination on all levels.

According to this principle, the Confederation, the cantons and communes are jointly responsible for the efficient land use. They achieve this task by co-ordinating activities, which have spatial planning impacts, and by implementing planning, which is orientated towards the country's desired development (Muggli, R. 2001).

"They (federal, cantonal and communal governments) are to co-ordinate any activities that have an influence upon the physical environment and are to realise a settlement pattern which ensures the desired development of the country. They are to take account of the

natural environment and the needs of the population and the economy" (Federal Law on Spatial Planning, article 1.1)

The Federal Law on Spatial Planning is a "framework-law" which leaves the main responsibility for spatial planning in the hands of the cantons. The federal law defines the basic principles and instruments for spatial planning, but leaves the responsibility for the detailed plan elaboration to the cantons themselves.

The cantons are obliged to enact and organise the land use planning for the cantonal area. In the planning process, the cantons use localised studies on potential problems and issues as well as specific regional information, so as to determine responses for such issues:

- Selective sector planning for sector fields like agriculture, tourism, transport, energy, etc. and also for major projects within those fields;
- Descriptive and prospective evaluation of the current spatial condition (problems, conflicts, potentials);
- Guidelines for the desired form of spatial development.

There is a remarkable variety in the cantonal spatial planning laws. As the federal law does not specifically define rules, the interpretation of the principles varies widely and is subject to a subsidiary legalisation fragmentation. Consequently, neighbouring cantons may have a completely different understanding of common plans and development concepts. However, the cantons have repeatedly rejected calls for a better harmonisation, fearing their autonomy might thus be jeopardized (Muggli 2001).

CANTONAL GUIDING PLANS AS CONCEPTUAL PLANS

A principal outcome of the 1979 Federal Law on Spatial Planning was the distinction of two new plan types: the "guiding plans" (*Richtplan*, *plan directeur cantonal*) and the "land use plans" (*Nutzungsplan*).

Guiding plans (sometimes also called "structure plans", "*Kantonaler Richtplan*" in German or "*plan directeur cantonal*" in French) are conceptual plans, which pre-define the land use plans giving them the general framework. Guiding plans are worked out for several levels: the cantonal, regional, and communal. It is on the cantonal level that guiding plans become a powerful instrument to steer the spatial development. The cantonal

guiding plan is not an outline of the cantonal territory's envisaged final state, but a *process plan* for the spatial development co-ordination by steering the subsequent development pace.

Each canton issues a guiding plan. A cantonal guiding plan deals with areas of cantonal interest, for example, nature conservation areas, regional greenbelts, public transport networks, waste disposal sites and so on. Swiss federal planning law requires that all territory be categorised either as building land, or land, which is reserved for other activities (i.e. agriculture). It is the responsibility of the cantonal guiding plans to define these basic areas.

A guiding plan covers the entire cantonal area and conveys the envisaged spatial development guidelines. The plan also pinpoints how the different spatially relevant activities of the Confederation, the cantons, and the communes are to be mutually reconciled. During this harmonisation process, inconsistencies and conflicts are revealed and subjected to the problem solving procedure within planning (Monney 1997). Also, the guiding plan usually offers a survey of responsibilities and a time-schedule (who does what and when) for the implementation of the defined measures and the co-ordination tasks.

The guiding plan document consists of the text and the map, which mainly serve to clarify and give a spatial overview of the guiding plan's contents. Cantonal guiding plans are constantly updated according to the spatially relevant development and are to be revised at least every 10 years. To become effective, they must receive approval from the Federal Council. This approval is a legislative control to ensure that the plan fulfils its legal requirements, however, it is not a review of the cantonal strategy's appropriateness. If a canton does not co-ordinate activities with the spatial impact in the guiding plan, the Federal Council can refuse to approve the plan.

CURRENT DEFICIENCIES OF THE CANTONAL GUIDING PLANNING

Bearing in mind the ability of the guiding plan to head for sustainable development (e.g. Conference of the cantonal spatial planning departments of Roman Switzerland; CORAT 1993), several guiding planning deficiencies are known:

- Guiding planning is rarely perceived as a process of "continuous planning", but rather understood as a singular event or "obligatory

exercise" with revisions undertaken every ten years (Egli / Ringli / Schmidt 1995). The verification whether the guiding planning is meeting the target, and if the undertaken steps are effective, does seldom take place during a plan's lifespan. Consequently, the effectiveness of the guiding plan can only be presumed until the next formal evaluation, which is normally executed only shortly before the total revision. An outline of unwanted developments or overdue effects of measures proposed in the guiding plan is also frequently absent. As a result, the guiding plan is often a "static" instead of a "dynamic" instrument. With a "static" plan there is no feedback, which allows for suitable control and intervention throughout the implementation. Spatial planning which abide by the principle of sustainability would require such control facilities (Keiner / Schultz / Schmid 2001).

- At present, only few cantons have established permanent spatial monitoring. That's why the cantonal offices for spatial planning rarely have all necessary space-referred basic data available needed to support decisions with spatial impacts. The monitoring could supply the basis for the planning requirements identification as a continuous process, which may well result in new calls for action.
- Comparisons of the spatial development and the guiding plan's effectiveness with those of other cantons cannot be made, at least not in terms of a learning-oriented benchmarking.
- Specified, obligatory, target values and procedural instructions for the realisation of the sustainable spatial development are nonexistent in the guiding plans (C.E.A.T. 2000). The cantonal guiding plans often describe rather arbitrarily interpretable specifications (e.g. "... is to be improved"). Moreover, political stakeholders rarely want a definition of normative target values ("standards"), whose achievement (or non-achievement) could be evaluated.
- In many cases, the guiding plan is lagging behind the actual spatial developments, often assuming the role of minimising negative impacts rather than the intended proactive role of supporting proper development.

From today's perspective, the criticism that can be made to guiding planning focuses on the inability to prevent some unsustainable developments like the settlement sprawl, increased land demand or settlement structures based on private transport. Moreover, the guiding planning still suffers from the lack of effectiveness. However, from the "sustainability" viewpoint, a

retrospective evaluation of the guiding planning effects can be done only with reservations, since this term obtained its current meaning only a decade after the first legal definition of the Swiss spatial planning targets in 1979. Albeit, the mentioned examples of unsustainable spatial development, and the disregard of planning as the problem-solving instrument in the spatial decision-making processes, should not be misinterpreted as a declaration of the planning's shortcoming. The disregard of planning is a policy issue that must be addressed in a greater social context. Since planning is a construct of both policy and politics, the intentions may become quite diffused by the end of this process. Spatial planning, whether in practice or theory, must constantly refer to the risk of imparting action recommendations. On the other hand, planning cannot fulfil its objectives if it cannot enact necessary actions.

The inadequacies of the current system are principally due to the inconsistent use of proper spatial planning. Thus, a modification of the legal basis, and the introduction of new planning instruments or a change of the planning paradigms are not urgently required. What are required, are a general implementation improvement and an authentic planning appliance.

Planning has both the mandate and the potential to resolve spatial problems. Yet, the full range of possibilities, offered to the canton by the federal law on spatial planning, is still insufficiently used.

However, sustainable spatial development cannot be achieved through guiding planning alone. Good planning and development are strongly dependent on factors, which are not directly influenced by the spatial analysis, e.g. the degree of society's prosperity, changing values or macro-economic developments. It would also be too ambitious to try to use the guiding plan as an instrument of a "super-co-ordination" (Held 1997) or a panacea. The application scope and the guiding plan's effect are therefore limited.

Implementation approaches of the sustainable development principle on the federal level

With the integration of the sustainable development principle into the new Federal Constitution in 1999, the sustainability gained a strong foothold on the federal level. In 1996, the Interdepartmental committee Rio (IDCRio) had already published an inventory "sustainable

development of Switzerland" (BUWAL 1996) assessing the implementation of sustainable development in different policy branches of the Confederation. Spatial planning was identified as an action field for the realisation of sustainable development. The "Council for sustainable development" worked out an action plan for Switzerland (BUWAL 1997) with mid- to long-term objectives and recommendations for sector policies implementation. From this derived the Federal Council's sustainability strategy (Federal Council 1997). At present, with regard to the RIO+10 summit at Johannesburg in 2002, this strategy is about to be updated into an action plan as "strategy for sustainable development 2002" (Bundesrat 2001).

In December 1999, the new Swiss Federal Department [Ministry] for Environment, Transport, Energy and Communication (UVEK) presented a departmental strategy for sustainable development (UVEK 1999). This strategy is designed to ensure the early consideration of the three principals of sustainability - environmental, social, and economic factors - in cross-office co-operation. For "transportation", "energy", "communication" and "environment" specific objectives were compiled. These objectives include (but were not limited to) the environmental impacts reduction, a country-wide supply of basic public services, and efficient performance of the governmental services, social compatibility, and nature preservation. Spatial planning can contribute to the accomplishment of these objectives.

In a related resolution of the Federal Council from January 2000, the key dossiers of "sustainable development" and "alpine convention" were redistributed to the new Federal Office for Spatial Development, which consists of the former Federal Office for Spatial Planning and the former Federal Bureau of Transport Studies. The mandate of the Federal Office for Spatial Development is the overall co-ordination of sustainable development at the federal level. It also functions as the secretariat of IDCRio. With this administrative reorganisation, the spatial planning policy was strengthened at the institutional level and a close connection between spatial planning and sustainable development was created on the federal level. But, spatial planning has not been *explicitly* aligned with the principle of sustainable development so far.

THE CANTONAL GUIDING PLAN AS SUSTAINABLE DEVELOPMENT IMPLEMENTATION TOOL

A first approach to a more intensive consideration of sustainable development in spatial planning emerges on the cantonal level. Today, the cantonal guiding plan is perceived (although not always used as such), as the key instrument for the cross-section oriented planning, guidance, precaution, co-ordination, communication and co-operation. Thus, the guiding plan can weigh spatially effective interests against each other and resolve conflicts of functions and land use demands. Additionally, the guiding plan determines the actions and precautions frame for subsequent land use planning at the local level. With this spectrum of tasks the guiding plan is well suited to implement the principle of sustainability in spatial development.

Guiding planning may resolve several weaknesses in the concept implementation of sustainable development by recognizing some of the key principles:

- The cantons use the guiding plan as a strategic management instrument but also as a spatial concept. It reflects the entirety of the cantonal administration action claims regarding spatial development.
- Early co-operation and the guiding plans revision processes take place between the municipalities, regions, neighbouring cantons and the Confederation. This is the prerequisite for a broad consent, which favours a smoother implementation of joint measures.

It is clear that cantonal guiding plans are a suitable instrument for initiating and controlling the sustainable spatial development. Cantonal spatial planning cannot become sustainable simply by adhering to the relevant sustainability targets and resultant guidelines. A regulation mechanism is needed that includes measurable target values and allows steering interventions. It is necessary to detect the actual spatial development deviations from the objectives, and be able to apply corrective measures.

MONITORING AND CONTROLLING IN CANTONAL GUIDING PLANNING

The implication of including sustainable development into the cantonal guiding planning requires new methodological and operational specifications. Currently, in the context of "New Public Management", the instruments of

"monitoring" and "controlling" are already in use in nearly all cantonal administrations. These instruments, which originate from the entrepreneurial marketing and management process, are being employed to increase the public services efficiency, but are also suitable to be applied in spatial planning (Keiner / Mettan / Schultz 2002).

Monitoring (or "continuous spatial observation") raises continuous information (e.g. statistical and cartographic time series analyses) for spatial development. With this information, problematic developments can promptly be detected (monitoring as an "early warning instrument"). Monitoring allows for a dynamic view of the actual spatial development state at a given point in time.

The definition of "controlling" varies considerably dependent on the institutions, the outcome of which are typically ill-defined interpretations. In Western Europe, controlling was only adopted during the 1970's whereas in the USA, the controlling concept has existed ever since the 1930's. In the Anglophone literature on management procedures, the controlling function is presented as one management component process, to go along with "planning", "co-ordination", "organisation" or "direction". Presently, the controlling concept is perceived as a global and prospective instrument for the management of an enterprise. It focuses on the planning and implementation devices, and using them as a proactive strategy can make businesses more responsive to their markets.

Controlling assesses the goals defined by the management and the processes aimed at attaining them. The constant comparison between the goal and the current actual state allows the enterprise administration to determine whether the entrepreneurial objectives are being met.

Controlling can also be understood as a management review tool for the existing plans analysis. By using the controlling process, the management can determine their progress, accomplishments, and deficiencies. Through continuous controlling, the plan's working methodology may be changed, work methods simplified, and manpower adjusted mid-stream. Controlling is, in other words, "the part of planning after you've decided what you wanted to be doing" (McNamara 1999). It is a systematic approach to determine if the planners are achieving their intentions.

Together, monitoring and controlling can be combined to assess and evaluate spatial development. Using these tools, unsustainable

spatial developments can be promptly detected and corrected with suitable measures. Sustainable spatial development (and also an "ongoing" or "rolling" guiding planning) is not attainable without the use of monitoring and controlling (Keiner / Mettan / Schultz 2002).

However, a practical controlling implementation of cantonal guiding planning exists only at the inception stage so far (e.g. controlling concepts of the cantons of Lucerne, Grisons and Berne).

By pointing out the calls for action and necessary adjustments of the guiding plan, an indicator based controlling contributes to a dynamic management of the guiding planning. With the introduction of this automatic control loop, a faster reaction to unwanted (i.e. unsustainable) spatial developments is possible, and thus a higher effectiveness of the guiding planning can be achieved. Ideally, controlling is integrated in the cantonal guiding plan from the beginning. If implemented and enacted judiciously, the guiding plan becomes a real strategic control instrument for sustainable spatial development.

CONTROLLING LEVELS IN CANTONAL GUIDING PLANNING

The controlling process within the guiding plan distinguishes between the strategic level and the operational level. At the strategic level, the guiding principles are used to define the objectives control. At the operational level, the co-ordination measures of the guiding plan guide the plan's implementation and the overall effects.

The objectives control (strategic level) includes two aspects:

- **Objectives achievement control:**
By comparing the intentions (guiding principles) and the results (effective spatial development), relevant key indicators will reveal whether the objectives of planning are being achieved. This analysis can be made only if the guiding principles are concretely defined and the planning priorities adequately determined.
- **Objectives validity control:**
The basic guiding principals must also be regularly reviewed for efficiency and appropriateness. Do the guiding principles reflect entirely the principal assumptions of spatial planning? New trends and methods of spatial development should be considered and the guiding plan reviewed and revised to maximise its effectiveness.

The co-ordination measures control (operational level)

- **Implementation control:**
Assessing the implementation of the guiding plan ensures that the stated intentions are being carried out properly, and evaluates which resources are being employed for that purpose. The verification is typically done by using simple checklists or through the use of a database.
- **Effects control:**
By monitoring a set of specific key indicators in the implementation of the guiding plan, it becomes possible to assess the plan's effects and verify that they tend towards the desired direction. If the controlling reveals that the co-ordination measures cannot bring about the desired effects, then adjustments to the implementation can be made.

INDICATORS AND STANDARDS FOR THE MEASUREMENT OF SUSTAINABILITY

The indicators control (Blanchet / November 1998) is worked out to serve as the evaluation basis of the spatially relevant sustainability targets (guidelines) in the cantonal guiding plan. Thus, the controlling contributes to the objective of decision-making processes as well as to the plan's success. The indicators for sustainable development when used for controlling purposes become an indispensable component in the monitoring, controlling and benchmarking of the guiding planning (Keiner / Schultz / Schmid 2001).

An indicator is defined as a measure of a certain circumstance's status, which cannot be recorded empirically. The interest lies however not in the indicator (e.g. the ratio of all floor spaces sum to a plot area), but on the inferred conclusions (e.g. settlement compression). It is necessary that the relationship of the effects and dependency between the indicator and the derived conclusions stay clear (e.g. the higher the ratio of floor spaces to a plot area, the more compressed the settlement is). The indicators usefulness depends thus on their suitability, appropriateness, and the precision with reference to the conclusions (Blanchet / November 1998, Birkmann et al. 1999). The selection of indicators follows comprehensible criteria, but due to the varying interpretations of their qualitative results, indicator based analysis remains subjective to a certain degree.

Target values

In order to evaluate spatial development it is necessary to define specific, quantifiable, target values or "standards" for the objectives. Whether a project is meeting the standards will be revealed by the changes in the measured indicators. Due to the different topographic, demographic, and initial economic position of the Swiss cantons, as well as their different development objectives, the creation of a comprehensive Swiss standards catalogue is problematic. The final organisation and definition of objectives and the ensuing controlling must be specifically worked out for each canton.

Indicators limitations

Obviously indicators cannot measure all of the guiding planning objectives. They can only cover a part of the actual spatial development. Many indicators only indirectly reflect the existing causal relation in respect to the guiding planning, because the guiding plan is only *one* element among few that determines the spatial development. It is sometimes difficult to state with certainty that changes in spatial conditions are really the effect of the guiding plan. One should remember that it is only the indicators interpretation, which gives them their significance; hence any quantitative information must always be supplemented by qualitative ratings. It would thus be appropriate to evaluate to what extent a given development is influenced by the guiding plan appliance and to what extent does it depend on other influencing factors.

REALISATION OF THE GUIDING PLAN CONTROLLING

The guiding plan controlling can be performed in short intervals, with known and affordable costs. The controlling enables the projects to proceed unhindered, while still allowing for an understanding of the progress. As a result, controlling can be coupled with other tasks and become part of the overall project process.

Every four years the cantons must prepare a planning report to the Federal Council. This occasion also provides an appropriate timeframe to communicate the results of the controlling to the strategic level (objectives control, guiding principles adaptation). On the operational level, the controlling intervals may be shorter (e.g. each 2 years), because the measures aiming at ensuring co-ordination require continual updating, so as to maintain the dynamic character of the guiding planning.

BENCHMARKING IN GUIDING PLANNING

A system facilitating comparisons between all Swiss cantons would be a sensible complement to the controlling (Keiner / Schultz / Schmid 2001). Any proposed benchmarking would need to evaluate the differences between planning, should, however, not be perceived as a contest of "better" guiding planning.

The concept of benchmarking was introduced into entrepreneurial management at the beginning of the 1980s. The procedure calls for the comparison and continuous evaluation of the products, services and practices of the strongest competitors with those of the 'home' enterprise. Benchmarking is intended to reveal not only the inherent component differences, but also variations in the operating methodology. In assessing the differences in performance, one uses both quantitative indicators and an overall qualitative assessment. Benchmarking implies an evaluation whose goal is the search for "better practices" leading to the product or services improvement.

By using benchmarking to compare controlling plans, the cantons would have the opportunity to position themselves within the broader framework of the confederacy. They would have the ability to see how comparable cantons regulate their spatial development via the guiding plan, and with what results. There are four basic goals in using benchmarking in the guiding planning:

- resolve several weaknesses in the sustainable development principles implementation by understanding several key principles,
- improve the efficiency of the product (the "guiding plan"),
- structure the process and the organisation satisfactorily,
- show the actual level of sustainable spatial development being implemented in each canton.

The comparison between cantons would make it possible to learn from each other, help disseminate the "best practices". The cantons would generally become aware of possible planning deficits, and remedy them in time (Maier / Weber / Zuber 2000).

SUSTAINABLE CANTONAL GUIDING PLANNING AS A MODEL

In the development of the guiding planning it is mandatory, to use of tools, which constantly adjust and optimise the process towards sustainability. Sustainable cantonal guiding planning is not a re-orientation of the guiding planning, but rather a confirmation of the concepts of precaution, flexibility, and accessibility, thereby strengthening the guiding planning implementation. Politically driven (space-relevant) decisions which deviate from the recommendations given by spatial planning, will need to be justified more transparently in the future, and will obviously need to be directed within the public interests. (Keiner 2001b).

The availability and promotion of some relatively new methods and tools enables the cantons to increase the guiding planning dynamics, its transparency and ability to steer the spatial development towards sustainability. These tools include the visualisation of diverging or conflicting spatial interests considerations, mediation as a means for a better public participation, as well as the establishment of "planning with the public" workshops at the cantonal level.

Swiss cantonal planning has many similarities with regional planning in other countries, which may find it interesting to evaluate and compare the effectiveness of their own regional planning with that performed in Swiss cantons. Based on this, the planning bodies could assess whether it is valuable to consider tools such as controlling for the sustainable spatial development implementation.

CONCLUSION

Spatial planning is more effective if a monitoring of the spatial development is applied. The results of monitoring are a main basis for the review of spatial development plans on all levels. Once a plan with objectives and measures is established, it is the framework for the desired spatial development in the next 10-20 years. In order to enhance the impact of spatial plans on the actual spatial development, these plans have to be reviewed and re-adjusted from time to time, ideally every 2 to 4 years. This can be done by using an indicator based controlling tool. If developments that derive from the desired direction can be detected early, corrective measures can be taken before problems become unmanageable. Until today, few countries, such as Switzerland and Australia

apply the controlling approach. Doing this, planning gets more transparent to decision makers and public, and becomes more dynamic, pro-active and efficient in order to achieve sustainable spatial development.

REFERENCES

- Birkmann J et al. (1999): 'Indikatoren für eine nachhaltige Raumentwicklung. Methoden und Konzepte der Indikatorenforschung'. *Dortmunder Beiträge zur Raumplanung* 96. Institut of Spatial Planning, University of Dortmund.
- Blanchet C / November A (1998): 'Indicateurs du développement durable appliqués à l'aménagement du territoire'. Institut universitaire d'études du développement; CES. Geneva.
- Bundesamt für Umwelt, Wald und Landschaft (BUWAL; 1996): 'Nachhaltige Entwicklung in der Schweiz'. Interdepartemental Committee Rio (IDCRio). Berne.
- Bundesamt für Umwelt, Wald und Landschaft (BUWAL; 1997): 'Nachhaltige Entwicklung. Aktionsplan für die Schweiz'. Conseil du développement durable. Berne.
- Bundesrat (2001): 'Bericht des Bundesrates "Strategie Nachhaltige Entwicklung 2002". Draft of November 1, 2001. Berne.
- C.E.A.T. (2000): 'Du concept de développement durable à sa mise en œuvre'. Lausanne.
- Conférence des Offices Romands D'Aménagement du Territoire (CORAT; 1993): 'Succès et lacunes de la planification cantonale. Bilan des plans directeurs cantonaux'. Lausanne.
- Egli K, Ringli H, Schmidt U (1995): 'Auf dem Weg zu einer wirkungsvolleren kantonalen Richtplanung. Zwischenbericht 1995 aus einem ständigen Erfahrungsaustausch an der ETH Zürich'. *ORL-Bericht* 95. Zurich.
- Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation (UVEK; 1999): 'Departementsstrategie'. Berne.
- Eidgenössisches Justiz- und Polizeidepartement / Bundesamt für Raumplanung (EJPD / BRP; 1997): 'Der kantonale Richtplan. Leitfaden für die Richtplanung. Richtlinien nach Art. 8 RPV'. Berne.
- Federal Council (1997): '„Sustainable Development in Switzerland. Strategy of the Federal Council"'. Berne.
- Gresch P / Smith B (1985): 'Managing Spatial Conflict: the Planning System in Switzerland'. *Progress in Planning* 23:155-251, Pergamon Press, Oxford.
- Held T (1997): 'Wegmarken einer nachhaltigen Raumentwicklung'. ORL-Institut. Zurich.
- Interdepartemental Committee IDCRio (ed.; 2001): 'A future for Switzerland'. Berne.
- INFRAS / ORL / C.E.A.T. (2001): 'Kantonale Richtplanung und nachhaltige Entwicklung. Eine Arbeitshilfe'. Berne.
- Keiner M (2001a): 'Bauen im Landwirtschaftsgebiet. Nagelprobe für die Raumplanung in der Schweiz'. *RaumPlanung* 94/2001:36-38. Dortmund.
- Keiner M (2001b): 'Nachhaltigkeitsorientierte Raumplanung. Eine Gemeinschaftsaufgabe - zumindest in der Schweiz'. *Raum&Ordnung* 2/2001:14-15.
- Keiner M (2002): 'Wie nachhaltig ist die Raumentwicklung der schweizerischen Kantone? - Grundlagen für ein interkantonales Benchmarking als Positionsbestimmung'. *DISP* 150 (3/2002): 41-45.
- Keiner M / Schultz B / Schmid WA (2001): 'Nachhaltige kantonale Richtplanung'. *DISP* 146 (3/2001):18-24.
- Keiner M / Mettan N / Schultz B (2002): 'Le controlling dans la planification directrice cantonale'. *Geographica Helvetica* 2/2002.
- Maier J / Weber A / Zuber A (2000): 'Benchmarking auch in der Regionalpolitik? Was kann das Marketing für öffentliche Güter von den Erfahrungen der Privatwirtschaft lernen?'. In: Lehrstuhl der Wirtschaftsgeographie und Regionalplanung der Universität Bayreuth (ed.): *Arbeitsmaterialien zur Raumordnung und Raumplanung* 191. Bayreuth.
- McNamara C (1999): 'Management Function of Co-ordinating / Controlling. Overview of basic methods, <http://www.mapnp.org/library/cntrlng/cntrlng.htm>
- Monney A (1997): 'The spatial and regional planning in Switzerland' (unpublished lecture)
- Muggli R (2001): 'Spatial planning in Switzerland: A short introduction'. <http://www.vlp-aspan.ch/d/document.php?id=41>
- Schmid WA (1994): 'Nachhaltige Entwicklung und Raumplanung'. *Schweizer Ingenieur und Architekt* 21:400-404. Zurich.
- Schmid WA (1996): 'Raumplanung als wirkungs- und ökologisch orientierte Planung'. *Geographica Helvetica* 2/1996:96-98
- Swiss Federal Justice and Police Department / Swiss Federal Office for Spatial Planning (1998): 'Swiss Planning Policy Guidelines. A summary. Berne

Legal texts

- Federal Constitution of Switzerland: Bundesverfassung der Schweizerischen Eidgenossenschaft vom 18. April 1999 (Stand am 18. September 2001). Systematische Sammlung des Bundesrechts 101. <http://www.admin.ch/ch/d/sr/101/> (translated to English by Emmenegger, S.: http://www.uni-wuerzburg.de/law/sz00000_.html)
- Swiss Federal Law on Spatial Planning: Bundesgesetz über die Raumplanung vom 22. Juni 1979 (available in French, German and Italian language on <http://www.admin.ch/ch/d/sr/c700.html>)

CORRIDOR X IN SERBIA – APPROACH TO SPATIAL PLANNING

Sasa Milijic, Nenad Spasic, Marija Maksin Micic

For the infrastructural corridor's area, of the national importance, is predicted making spatial plans of area of special use, as the most complex instruments for the developing and arranging management of these areas. These plans should have an integrative and problem-oriented approach towards development planning and arrangement of such an area, and it is obliged to include: a complex evaluation of state and function of infrastructural system in the corridor; an analysis of infrastructural corridor influence on the development of the planning area and its surrounding; an alternative conception of long-term protection, improvement, organization and use of the planning area; a choice of the priorities and assumption of the realization phases; instructions for the implementation of the plan etc. The approach in making of this category of plans, as well as, experiences in planning, arrangement and use of multimodal corridors, have been considered on the example of Spatial plan of the infrastructural corridor E-75 section Belgrade-Nis area.

Keywords: *spatial plan, infrastructural corridor development, programs, implementation, accompanying contents.*

INTRODUCTORY REMARKS

European economic integration and the transition of the Southeast European countries take place through the modernisation and harmonisation of the transport infrastructure and services, as the main prerequisites of the societal and economic development. An efficient and high quality transport is indispensable for the international commodities exchange, business activities and the international tourism advancement. For these reasons, the transport infrastructure development is deemed as the priority economic sector of the European Union (EU), wherein a clearly defined road transport development strategy plays a dominant role. The geo-strategic importance of the traditional transport routes along the valleys of the Danube, Sava and Morava, the transport capacities construction level and the achieved transport demand are pivotal to the transport infrastructure development of Southeast Europe. In the European transport network development plans, the pan-European multi-modal transport corridor "X" has been set with the function of integrating the Central and East European transport system. The EU transport policy with regard to the multi-modal corridor development is the undoubted priority in the long-term development strategy of the transport infrastructure in this area to be implemen-

ted in following spheres: The construction/reconstruction, corridor equipment and preparation for public-private partnership investment; equity of access to transport services market; equity of conditions in respect to professional education for the participation in the services market; equity of services charging systems based on the rule that the infrastructure use is to be paid for; introduction of new management technologies (investment of scales in the field of telematics).

In Serbia, defining the strategy development of multi-modal transport corridors was based on the general transport flow growth trends in Europe for the period of 1998-2000 in view of: the road transport demand growth in the overall transport, with a rapid mobility growth ranging from 34% to 50% and freight transport in the Mediterranean and East European countries; the railroad transport growth in the overall transport from 15% to 23%, thanks to stimulating policies in EU countries; and the air transport annual growth rate of 5.9%.

Starting from the indicated tendencies, with regard to the development strategy of the multi-modal transport corridors, next general objectives are defined:

- Development of all transport means infrastructure ought entirely comply with

quality, efficient, safe and economic transport abiding by the sustainability principles and new technologies appliance as to transport flow management, motor vehicles development and information support advancement related to the traffic and transport process;

- A more rapid inclusion of Serbia into European tendencies by the unified market enlargement onto the whole European space and by directing the transport policy towards the creation of an integrated and compatible infrastructure attuned with the multi-modal corridor X and other routes linked to the pan-European transport areas (Mediterranean and Adriatic-Ionian basins);

- Securing the maximal available transport capacities use;

- Rehabilitation, reconstruction, increases of quality and transport system accessibility, financed by means of donations, favourable loans and/or concessions.

The long-term development of the pan-European multi-modal transport corridor X with the legs Xa and Xb on the territory of the Republic of Serbia will encompass:

- Construction of the motorway section from Leskovac to Presevo (the border with FYR Macedonia), from Nis to Dimitrovgrad (the

border with Bulgaria), the bypass around Belgrade (Batajnica-Bubanj potok) and from Horgos (the border to Hungary) to Belgrade (Batajnica);

- Motorway corridor equipment with complementary amenities in line with European criteria and standards;
- Reconstruction and construction of a two track railroad fitting for trains exceeding the speed of 200 km/h for the directions: Croatian border-Belgrade-Nis-Dimitrovgrad, Hungarian border-Belgrade and Nis- FYR Macedonian border;
- Reconstruction and modernisation of the existing railroad track through the correction of the constraining sections and linking of new tracks with parts of the network in accordance to the new railroad flows for the train traffic exceeding the speed of 120-160 km/h;
- Airport "Surcin-Beograd" and "Nis" equipment upgrading, and the increase of the domestic air transport growth rate;
- Development of multi-modal nodes and goods-transport centres;
- Complementing the main gas pipeline and the gas pipeline distribution network along the main gas pipeline, by which the number of gas supplied towns and settlements in Mid- and Southeast Serbia would significantly increase;
- Reconstruction and revitalisation of the existent and the construction of the new electric distribution network and the transforming stations;
- Reserving the space for the potential navigable corridor Danube-Morava-Vardar.

TRANSPORTATION AND CONNECTIONS

In Serbia, the natural predispositions from the physical-geographic viewpoint and the terrain configuration point to a favourable transport and communication position and a far greater potential as made use of by now. Its central place on the Balkans, with alluvial valleys and easily manageable and adaptable transport corridors links and interweaves Europe with Asia. Foremost, this is true for the Danubian-Sava direction, being effortlessly passable and connected with the centrally formed valley area of Great and South Morava, linking Serbia in the North-South direction. As a consequence of natural settings, the central transport node covers the aquatic area of confluent rivers: Save, Tamiš, Tisa and Great Morava, dominating by Belgrade's urban agglomeration with its spatial-functional, metropolitan importance

and the multifarious developmental impact upon the integration of Serbia's overall territory.

The strategic importance of Serbia's territory in view of transport is especially emphasised by providing an exceptionally favourable communication between Europe and the Near East. Via the continental connection, Serbia's territory interlinks the West European area, the Alps but also the Scandinavian, Baltic and Danube area with Southeast Europe (East Mediterranean) and Near East. In terms of establishing transport connections in European dimensions but also beyond of particular significance are the links within the former Yugoslav territory, especially two transport corridors: (a) along the river Save in the West-East direction with an almost complete, but conked out road and railroad infrastructure systems and (b) along the Adriatic coast by which the coastal areas have been connected with the eastern parts of the former Yugoslavia. These corridors' short and long-term lot is uncertain, however, their exceptional international geo-strategic relevance ought not be overlooked.

Serbia's mid position on the Balkan Peninsula and the mid section of the Danube area enables a more extensive interlinking and involvement into the international labour division. In spatial-functional and especially the developmental potential terms, the Danube-Save and Morava axes stand for the so-called "cross-concentration", i.e. development polarisation. This matter of fact is of crucial impact for the understanding and defining the key assumptions and factors affecting the organisation system, arrangement and use of Serbia's space.

By intensifying the links based upon the advantageous geographic and transport position with Central and West European, but also South and East European countries, i.e. by advancing and developing transit and mediating functions between Europe and Asia, the Republic of Serbia possess the potentials to rationally and efficiently develop its spatial-functional position. The centripetal and convergent features of the mid-Danube geographic area, particularly along the direction of Novi Sad-Belgrade-Pancevo-Smederevo, where Serbia's largest urban agglomeration with metropolitan forms and contents is located, together with the exit legs along the rivers Save and Morava act polarising upon Serbia's entire territory. This area's attractiveness is demonstrated through the production concentration of economic and non-economic activities and

consequently the agglomerating population.

On the other hand, the attractive power of the two-tangled development axes (the Danube-Save and Morava axes) works depleting in relation to the population of the broader border, i.e. peripheral and mountainous areas. The concentration of secondary and tertiary economy sector activities within the relatively narrow area has consequences upon the spatial use and organisation. Within Serbia's space, three territorial entities might be discerned. Vojvodina is the plain region of the mid-Danube area, where the prevailing concentration tendencies take place along its south ridge in the direction of Novi Sad-Belgrade-Pancevo-Smederevo. However, in view of the international labour division, the advantageous geographic and transport potential has not been exploited. The central part of the Republic of Serbia is a complex spatial entity, which along the north-south direction transforms from plain to more jagged hilly and mountainous areas. The Morava development axis stretches midway and is linked transversally with the West Morava axis with substantial developmental and spatial-functional potentials- determinants. This axis has been developed with broad activities potentials lessening the pressures upon Belgrade's metropolitan region. Onto this transversal development axis, via Nis as the macro-regional centre, follows somewhat lesser prominent axis along the river valley of Nisava towards the Bulgarian border. Kosovo and Metohija, as the territorial macro-entity show the most intricate geographic structure. The Kosovo ravine is relatively well connected with Serbia from the transport viewpoint and particularly compared with the Metohija ravine.

THE INFRASTRUCTURE CORRIDOR X

In the Spatial Plan of the Republic Serbia (subsequently PPRS), the transport corridors, and particularly the motorways and high-speed railroads have been determined as strategic determinants. Given that the transport network is part of the European network, one of major tasks is the spatial integration of Serbia with the neighbouring countries and further with other European countries but also the internal spatial integration.

In the European transport development network plans, the pan-European multi-modal transport corridor X has been defined (Salzburg-Ljubljana-Zagreb-Belgrade-Nis-Skopje-Veles-Thessalonica) with its two legs: Budapest-

Belgrade (Xb) and Nis-Pirot-Sofia (Xa). Incidentally, from 1990 Serbia's main link with Europe was realized via the road E-75 Belgrade-Novi Sad-Subotica-Hungarian border, whereas the road E-70 as the pivotal connection in former Yugoslavia linking Serbia with Europe was laid off. However, it is believed that with changed political and other relations, these roads will be rehabilitated in the economic and other connotations, which for it is important to solve the interconnection of the road E-75 Belgrade-Budapest and the road E-70 (Batajnica-Dobanovci).

From the standpoint of internal integration objectives, of particular importance is the more efficient linking of the E-70 motorway sections Batrovci-Belgrade with Mid and South Srem, north Save area and Macva. This is achievable by the improvement of the regional and local network and the more intensive use of the existent motorway entrances-exits.

Next to Belgrade, the interconnection of the corridor X with the transport route E-70 (Croatia, Belgrade-Vrsac-Romanian border) leading to Romania ought to be carried out. The road from Belgrade towards Romania has not been evaluated adequately as yet (neither in the planning nor in the project sense), although the long-term economic relations of Serbia with East Europe are superior compared to West Europe.

The corridor X section from Belgrade to Nis and further on to Skopje and Athens (E-75) is crucial for Serbia. This is the central communication in Serbia, replacing the ancient road to Istanbul-Djod. This time, the position of the Morava catchments area acts as the centralising power upon the entire Serbian space. Formerly existent motorway E-75 on this section did not have the expected stimulating impact on the economic development and the transport integration of Serbia. At the same time, the analyses show that there are either less or more motorway entrances from the surroundings as would be optimal for a road of such character and speed. The problem lies not only in the number of entrances/exits but also in the main and regional connection of the existent entrances/exits. Thus, a better use of the motorway Belgrade-Nis is to be accomplished by improving the regional and local connections network with existent entrances/exits.

In the road integration analysis of Serbia it has been known for a long time that there are no adequate "transversal links" between the

western parts of Serbia, via the Morava area with the eastern parts of the Republic. In the planning of new links, the motorway E-75, section Belgrade-Nis ought to become the skeleton of such interconnections. Therefore, in the PPRS some new links, especially those of East Serbia with the motorway are proposed. Present links operate only in one direction: Bor-Zajecar-Paracin. New links are planned via the future main road Bor-Markovac and the existent road Negotin-Kladovo-Pozarevac-the Motorway.

Along with the linking of the east part of the Republic with its central and west parts, the corridor is also very important for the regional and sub-regional development, mainly in respect to urban and economic centres in corridor's immediate vicinity and tourism regions and other areas of special use. The construction, equipment and arrangement of the motorway E-75 infrastructure corridor, section Belgrade-Nis, will contribute to strengthen the transport, economic and other functions of Belgrade, Kragujevac and Nis, Jagodina-Cuprija-Paracin, Aleksinac and numerous smaller towns. Consequently, this would facilitate the objectives achievement of the PPRS and the overall strategy of Serbia's development through the cutback of negative tendencies in demographic developments of the Central and Southeast Serbia. Thus, Serbia's metropolisation process would be trimmed down, inducing a more rapid development of Nis, the regional centres and smaller towns in regional entities east and west of the corridor. In the infrastructure corridor as planned in the PPRS, following main infrastructure systems for the Belgrade-Nis direction have been determined: motorway E-75 (M1); high speed railroad E-85 and the modernisation of the existent railroad; main fibre glass cable; main gas pipeline, long-distance power line 220V and 400V; objects for flood protection – protection dikes. Furthermore, some profound research is needed relating to the hydro-energy and navigable system "Morava", so as to determine actual potentials and conditions for their realisation.

Approach to the SPATIAL PLAN ELABORATION FOR THE INFRASTRUCTURE CORRIDOR AREA OF THE MOTORWAY E-75, SECTION BELGRADE-NIS

For the infrastructure corridor area of national importance, according to the Act on planning and organisation of spaces and settlements,

the Act on the Spatial plan of the Republic of Serbia and the Manual on the contents and spatial plans elaboration, it is foreseen to work out the infrastructure network plans as the most complex instruments for the development and organisation governance of these spaces. The plans should display an integrative and problem-oriented approach in the development planning and areas' organisation. They must contain: complex assessments of the infrastructure system state of the art and functions for the infrastructure corridor; the infrastructure corridor impact assessment upon the planned area's and surrounds' development; alternative program and planning concept for the long-term protection, advancement, organisation and use of the planned area; priorities classification and phases realisation proposition; plan's implementation guidelines, etc.

The approach in the elaboration of such plans category with experiences in the plan's appliance have been elucidated upon the case of the Spatial plan for the motorway E-75 infrastructure corridor area, section Belgrade-Nis. Bearing in mind the fact, that a considerable part of this motorway E-75 corridor section has been constructed more than 20 years ago, a particular problem was the non-planned construction of the motorway's complementary contents and objects in its protected zone. With the Spatial plan, a rational model for the equipment and arrangement of the motorway corridor has been planned, the implementation of which will depend on complying with and applying the planning criteria.

Spatial plan's subject¹

The content of the Spatial plan for the motorway E-75 infrastructure corridor area, section Belgrade-Nis (subsequently: the Spatial plan) is an area of special infrastructure use, stretching through the plain alluvial valleys of the rivers Great Morava and South

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Morava, covering an area of 1835 km². With the Spatial plan, long-term grounds for the organisation, use and arrangement of the infrastructure corridor area have been determined. The corridor is located in the zone of the most significant development axes of the Republic, passing by Belgrade and other larger settlements agglomerations, such as: Smederevo, S. Palanka, V. Plana, Jagodina, Cuprija, Paracin, Aleksinac and Nis. Within the Spatial plan's area, there is a substantial concentration of population, industry, and economic and other activities, bringing about numerous conflicting interests and the environmental degradation, i.e. the degradation of particular natural resources (water, soil, vegetation). Being an area of intensive development of particular importance as set in the PPRS (reference map II), it is necessary to consider the overall development and establish the planning instruments for the appeasement of development conflicts and constraints in the reconstruction, organisation, use and protection of the infrastructure corridor.

The Spatial plan's area development planning and arrangement concept is based upon the integrative and problem-oriented approach. Alongside the spatial factors, the *Integral approach* to the organisation and arrangement equally heeds the socio-economic and ecological factors of the infrastructure corridor's area development, i.e. towns and municipalities development along the corridor. The *problem-oriented approach* to this area's planning and arrangement demands a methodological specification of the planning approach with procedures and techniques aimed primarily at the functional use of the infrastructure corridor, i.e. the provision of spatial conditions for the optimal distribution, construction, and equipment and reconstruction of complementary contents for main infrastructure systems in line with international standards and criteria.

One of the important issues considered in the Spatial plan are the impacts/effects of the motorway and other infrastructure objects upon the overall development of the infrastructure corridor gravitation zone, principally from the regional standpoint. They were weighed upon the production/resources sub-regions, the existent production systems network, flow of raw materials and goods, but also in view of the future economic development projection, activities concentration, investment strategies and migratory flows. Moreover, it has been explored which activities are required to

achieve higher positive effects of the corridor upon: the economic development, tourism (spas and mountains) and the public services network, the overall economic and social integration of East Serbia with the territory of Central and North Serbia. The impact assessment upon the regional development of the territory in question was based on the objectives and propositions of the PPRS, the regional, town and municipal development programs for this area and other studies, plans and programs. Given that in the previous period, on the infrastructure corridor's area, a large amount of main infrastructure objects had been constructed, in the Spatial plan elaboration, the emphasis was put on the assessments and deliberations based on analyses referring to former motorway and other infrastructure systems impacts.

Because of the protection of natural conditions and assets, the cultural heritage and landscapes and before the final coordination of infrastructure systems routes and their elements (especially the motorway and the railroad) in the corridor, according to special regulations, it was necessary to work out a strategic environmental impact analysis. Consequently, the environmental impact assessment suggests measures as to the damages prevention. This analysis, for the needs of the Spatial plan elaboration, meant a special impacts synthesis upon the physical spatial attributes on the one hand, and upon the activities and life in the area in question, on the other. That's why all the results of the sector analyses (settlements, transport, economic flows, nature, environment, tourism, etc) have been involved into a complex environmental impact assessment, so as to entirely define the developmental constraints, interrelations and potentials, as well as measures for the prevention or reduction of negative environmental impacts.

The information base and the conceptual framework for the Spatial plan elaboration were the spatial plans for the organisation of broader territorial entities and other planning documentation (PPRS, regional spatial plans, municipal spatial plans, etc), technical-economic documentation (feasibility studies, investment programs, etc.), developmental strategies and programs of other special spatial uses and the technical infrastructure documentation for the corridor.

The technical documentation for the infrastructure systems in the corridor used for the

Spatial plan elaboration was of inconsistent quality and varying in the detail level. A satisfactory quality and detail level was displayed in the technical documentation for the motorway corridor, which was rather important in respect to suggested planning propositions, given the equipment priority and the motorway corridor arrangement. Therefore, in the Spatial plan for the motorway corridor, the planning propositions were decided upon with a higher reliability degree compared to other main infrastructure systems corridors (railroads, gas pipeline, glass fibres, navigable canals, etc). After the studies and technical documentation upgrading to the level of general, i.e. concrete project, adequate changes and amendments of the Spatial plan will be adopted. This encompasses also the detailed elaboration at the regulation plan level for the route, objects and contents of the main infrastructure systems in the corridor as to construction priorities.

The alterations occurred in the corridor since the commencement of the motorway operation until now indicate that for the needs of the Spatial plan elaboration it is indispensable to carry out some complementary terrain research:

- The survey of the motorway's functional contents state of the art, comprising the complementary contents for the motorway users' needs, in which the systematised data as to sections would cover: the objects use, the objects location (as stations from the main project), the content, covering area, capacity, communal amenities, ownership, territorial designation, existent objects documentation, etc.
- Enquiry in respect to problems, objectives and municipal development priorities for the Spatial plan area, the results of which were the starting point in defining the Spatial plan's objectives, planning solutions and implementation. The enquiry was executed with verified representatives of the municipal assemblies and referred to following domains: existent planning documentation, the standpoint in terms of spatial use and complementary objects in the narrower and broader motorway corridor, other infrastructure state of the art and development, economy, natural and cultural heritage, etc.

Contents of Spatial plan

The Spatial plan consists of: The Spatial plan draft, plan's documentation base and the Spatial plan's elaboration to the regulation plan level.

The Spatial plan's documentation base consists of: excerpt from the Spatial plan of the Republic of Serbia and other relevant development documents; the equipment and arrangement program of the motorway corridor, analyses and diagnoses of the state of the art; prognoses; planning definitions and elucidations of planning solutions; data, conditions and other documents from the preparation procedure, the public insight and expert debate and expert control of the Spatial plan with appropriate graphic maps and other documentation on which the Spatial plan is based. The Spatial plan documentation base is graphically shown on 15 survey sector maps. The equipment and motorway corridor arrangement program (subsequently: the Program) has been prepared upon the client's order (Ministry of Urbanism and Construction with the participation of the Republic's road agency), as the interstice between the documentation base phase and the Spatial plan draft. The Program's elaboration objective was to preliminarily identify and assess the justification of existent nodes and motorway's complementary facilities with proposals as to their betterment. Additionally, it was necessary to analyse the taken obligations and/or various local communities or potential investors requests pertaining to actual needs and planning criteria for the distribution of motorway nodes and complementary contents. The Program's decisions and findings were the ground for the elaboration of the planning solutions, location and priorities definition as to the construction and reconstruction of the motorway's complementary facilities, measures for the Spatial plan's appliance and its elaboration at the regulation plan level. Not all issues customary for the infrastructure corridor integrative planning were addressed, but the elaboration approach contained some methodological specifics by which it differs from former elaboration approaches for infrastructure corridor spatial plans. These specifics refer to defining the functional capacities of motorways' complementary contents, i.e. the defining of basic and specific criteria for the complementary contents location choice.

The Spatial plan draft consists of: general and specific objectives, long-term planning propositions for the organisation, arrangement and protection of the infrastructure corridor planning area, measures and guidelines for the appliance and realisation of planning propositions, as well as digital graphics of the Spatial plan. They entail: the reference map 1-Infrastructure systems location in the infra-

structure corridor-, the reference map 2-Land use plan-, reference map 3-Tourism development plan and environmental protection measures- and a special thematic map -Survey of the existent and planned motorway's complementary contents- in the scale 1:50 000.

The Spatial plan's component part will also be the detail elaboration at the regulation plan level for particular sections and objects of the motorway E-75 infrastructure corridor: enlargements, intersections, terminals, service contents and other objects in the motorway function.

SCOPE, OBJECTIVES AND TASKS OF THE SPATIAL PLAN

The Spatial plan's scope

The preliminary spatial scope of the infrastructure corridor area is defined conforming to the elaboration phases and the Spatial plan's contents:

- For the Spatial plan's preparatory activities and the documentation base (first phase), the motorway corridor gravitation zone (regional area) has been encompassed with varying spatial scope corresponding to the research subject (functional areas of main infrastructure systems and areas of special use, determined by the Spatial plan of the Republic of Serbia); particular emphasis has been put on the motorway's contact area (surrounds), i.e. the municipal and urban territory through which the corridor passes through and where the corridor's impacts upon the immediate surrounds and vice versa have been explored, covering an area of 8000 km².
- The Spatial plan draft (second phase) included entirely or partially the cadastre municipalities at the towns' territory of Belgrade and Nis and 15 municipalities through which the infrastructure corridor passes through (Grocka, Sopot, Mladenovac, Smederevo, Smederevska Palanka, Velika Plana, Lapovo, Batocina, Svilajnac, Jagodina, Cuprija, Paracin, Cicevac, Razanj and Aleksinac).

Encompassed with the Spatial plan in the draft version are:

- (1) Motorway E-75 corridor section Belgrade-Nis with the overall length of 317 km divided in:

Motorway corridor section from Bubanj Potok to Trupala, with the length of 216 km and the width of 700 km, which entails the route with protection belts (the immediate route and the complementary contents such as loops,

terminals, objects for the users' needs in transport, protective green, etc. and the broader protection belt);

Motorway corridor sections covered by the General plan of Belgrade: Batajnica-Zemun and Dobanovci-Bubanj Potok some 51 km long and the bypass Batajnica-Dobanovci-Ostruznica-Bubanj Potok-Vinca (Danube) some 50 km long and 150 km wide (encompassing the route with its immediate protection belt and complementary contents);

(2) Existent and planned main infrastructure systems with the route and protective belts (immediate and broader), which are within the spatial scope: railroads (with the overall width of 250m), gas pipeline (with the overall width of 200m), fibre glass cable (with the overall width of 4m) and the potential navigable road of Morava (with the overall width of 300m);

(3) Complementary infrastructure systems of the motorway-alternative road directions of the motorway E-75 (without the pay toll)

(4) The space between certain zones of main infrastructure systems, which are in the physical and functional connection with the motorway corridor (closest settlements, tourism and recreation objects and areas, etc), except for the area covered by the General plan of Belgrade, where the spatial scope of the Spatial plan is reduced to the motorway corridor E-75.

The elaboration area of the Spatial plan at the regulation plan level will encompass: the motorway infrastructure corridor (in the narrower sense), i.e. the area under the object with the protection belt along the main road (motorway) and complementary contents such as loops, terminals, objects for the users' needs in transport (gas stations, rest places, motels, etc.) auxiliary roads with catering, commercial, tourism, sports and recreation and other objects. The construction and arrangement conditions of these objects and areas will be precised with the detailed elaboration at the regulation plan level, based on propositions and criteria of the Spatial plan and the technical documentation at the design plan with the adequate feasibility study and the environmental impact analysis.

The elaboration areas of the Spatial plan at the regulation plan level have been preliminarily determined during the Spatial plan elaboration, at the end of the study and documentation phase and would entail the corridor section bypassing Belgrade the motorway corridor passing through Belgrade. If necessary, they

would also encompass other motorway sections, as well as motorway corridor sections with complementary contents, where needed (loops, bases, pay toll stops, motels, petrol stations, rest places, etc.).

It has been assessed that there is no need to plan in detail the already constructed motorway sections at the regulation plan level, neither for other infrastructure systems within the infrastructure corridor area encompassed by the Spatial plan until the study and technical documentation of these systems is not brought to the general or design plan level.

Spatial plan's objectives and tasks

In the last years (1992-1999), the transport system in our country has been in a poor situation. Insufficient investment in the road and railroad systems maintenance have been reflected upon the present quality and services level, which does not comply with current European requirements, especially those set for this system in future.

Therefore, the system's state of the art and the needs have been considered within the Spatial plan, i.e. within special sector analysis as well as the intervention types and scopes with the purpose to upgrade the system to the satisfactory level.

Alongside the reflection on changes in the previous period, in the Spatial plan, the achieved and expected transport flows until 2020 have been analysed, and were used as the ground for considering other Spatial plan solutions. Surely, the prognoses must be based not only on our overall development trends, but also on grounds of European strategies and development tendencies, as well as countries' development emerged at the former Yugoslav territory.

Following basic objectives of the long-term development, use and arrangement of the Spatial plan's area have been determined:

(5) Securing spatial conditions for the construction, reconstruction, equipment and functioning of main infrastructure systems in the corridor;

(6) Deciding on the optimal distribution of activities, physical structures and the population at the Spatial plan area with compliance to economic, technologic, environmental, social and spatial-functional criteria;

(7) Securing conditions for a better functioning of the existent production plants,

settlements and main transport objects, which are situated in the infrastructure corridor, envisaging also their displacement.

In the Spatial plan elaboration, the main tasks were to make planning solutions and appliance guidelines provide for:

(1) Transport (physical), economic and social integration of certain regional entities in the Republic, as well as the integration of the Republic with neighbouring countries;

(2) Assess effects of the intended and transit transport upon the local communities development (towns and municipalities);

(3) Assess effects of the infrastructure corridor upon certain activities (agriculture, industry, tourism, etc);

(4) Appease developmental, physical (spatial) and environmental conflict between the motorway (corridor) and the immediate surrounds;

(5) Coordinate and determine routes for the transport and other main infrastructure systems, determine the location and construction conditions and arrangement of the intersection nodes of single routes, with the intention of the inclusion into the European transport system;

(6) Determine the planning elements and criteria for decision making in respect to investments and location choice for new economic objects;

(7) Integration and synchronisation of the basic infrastructure corridors functioning, above all the motorway E-75, with the regional and local network at the Spatial plan's area and the surrounds. This task refers mostly to the road network in view of:

a) Integration and a more substantial role of the motorway E-75 in the local transport improvement, and thus in the impact upon the economic and social development of the area;

b) Alternation and enlargement of the regional and local road network role for the district and inter-district transport, aimed at decreasing pressures upon the E-75;

(8) framework for the elaboration of new and revision of existent spatial and urban plans at the Spatial plan's area, as well as the elaboration and adoption of other plans, programs and the technical documentation.

The immediate special task of the Spatial plan's elaboration was:

- To point at the motorway's positive and

negative effects, with the aim to endow the Spatial plan with development document attributes and not only technical;

- To record and assess the transport system's state of the art, motorway's complementary contents and suggest a rational model for the motorway's corridor equipment and arrangement;

- To explore the connections quality of the existent motorway with the main regional and local road network in the contact area and suggest consequent improvements;

- To determine norms for the infrastructure systems spatial use in the corridor and criteria for the distribution of the motorway's complementary contents.

CRITERIA FOR THE LOCATION CHOICE OF THE MOTORWAY'S COMPLEMENTARY CONTENTS

As to the function, two main groups of the motorway's complementary contents have been differentiated:

(1) Road transport's functional contents for the maintenance, management and provision of a faster, safer, more comfortable and more reliable transport of goods and people on the motorway: the road maintenance base, objects for control and management and pay toll stops

(2) Complementary contents for transport users' needs: petrol stations, motels, restaurants, shops, parking spaces, rest places, information centres, etc.

In the Spatial plan's elaboration, following criteria have been employed for the distribution of the motorway's complementary contents (E-75):

(1) The distribution of the complementary contents ought to provide for:

- Basic requirements in view of the present and future needs and the possibility of the phased realisation;

- Motorway users and complementary contents users comfort;

- Basic requirements as to the transport safety – critical are all those complementary contents locations at the traffic loops and in their vicinity, i.e. entrance and exit loops legs; the connections with the motorway are to be established by special entrance and exit transport tracks as to the criteria applied for traffic loops.

(2) Abiding by the principle –one dominant function one location; the appliance of this criterion stipulates more complementary contents

locations with less users, instead of less complementary contents locations with more users;

(3) Balanced functions distribution along the whole motorway section (because of the more equitable direct and indirect benefits distribution for the local communities);

(4) Complying with optimal functional distances between the complementary facilities, but respecting the inherited state of affairs;

(5) Because of the more frequented entry and exit transport at motorway's approaches to macro-regional centres (as to PPRS: Belgrade, Kragujevac and Nis) it is possible to deviate from the last two criteria;

(6) To rank the sections conforming to the utilisation probability of the motorway's complementary contents based on the annual average of the daily transport frequency and the characteristics of the gravitation area of the motorway section in question;

(7) Obligatory landscape arrangement and complementary facilities complexes maintenance.

Special criteria have been defined as to the motorway's complementary facilities placement¹:

¹ Criteria for location and motorway's complementary contents are derived from ensuing sources:

- Planning and designing main roads' complementary contents, Institute for Roads and Geo-technique of the Civil Engineering Faculty, University of Belgrade, Prof. M. Maletin, Prof. V. Andjus, Belgrade 1993.
- Equipment analysis and program base for the construction and reconstruction of complementary facilities for the motorway Belgrade-Nis, Road Institute Belgrade, Agency for Transport and economy, B. Borojevic, Belgrade 1997.
- Autostrade I.R. in Italia, S.p.A. Roma (Gruppo I.R.I.) Dicembre 1980.
- Spatila plan draft for the infrastructure corridor area Nis-FYR Macedonian border, Institute of Architecture and Urbanism of Serbia, 2000.
- Conception proposal for the motorway's complementary facilities (Commission for the expert control of Spatial plans of the Ministry of Urbanism and Construction), Institute of Architecture and Urbanism of Serbia, 2001.
- Motorway E-75 traffic prognosis, section Belgrade-Nis;
- Adriatic Motorway-Transport-urbanism study, Road Institute, Lj. Kuzovic, S. Mitrovic, I. Albreht, Belgrade 1969.
- State of affairs and expected road network development of SR Yugoslavia with the emphasis on directions belonging to the TEM network and pan-European multi-modal transport corridors and transport areas, Prof. Lj. Kuzovic, D.

- Road maintenance bases: settlements vicinity, possibility for the communal infrastructure equipment, environmental correctness; functional distance 50-70 km; possibility for vehicle manipulation (traffic loops, pay toll); available space of at least 2-3 ha;

- Rest places: the location at or in the vicinity of a valuable natural ambiance, with special parking spaces; local road and/or rural settlement vicinity; location suitability for communal infrastructure equipment; functional distance of 10-15 km; available space of 0.5 – 3 ha (depending on the type);

- Gasoline stations: functional distance of 20-30 km; organisation of independent gas stations of two types: type I (gasoline-service station) and type II (gasoline - passengers station), whereas these station types usually alternate as independent both-side gas stations; existent gas stations for petrol supply positioned by a motel of lesser capacity serve the motel guests and are not planned for capacity enlargement; at locations planned for motels new gas stations are not planned except for the motels in tourism-recreation complexes; green inter-space; possibility of two way access (from the motorway and regional and/or local road); available space of 1.5-3 ha (depending on the type);

- Motels: functional distance of 30-60 km; the location is stipulated by natural and built assets, settlements vicinity, the linking possibility with existent regional and local roads, i.e. near significant transport nodes and turns towards important tourism destinations; motel organisation in two types: type I (standard motel) and type II) motel in the tourism-recreation complex); green inter-space; number of parking spaces (one parking space for one person in the motel or one parking space for four seats in the restaurant) or depending on the scope and structure of the transport frequency; available space of 5-15 ha (depending on the type);

SPATIAL PLAN'S APPLIANCE AND REALISATION CONCEPT

Spatial plan's appliance approach is based upon the belief that the objectives, planning conceptions and propositions of the Spatial plan will be implemented by the appliance of: defined criteria; particular policies, measures

and instruments; defined norms and standards; elaborated and incorporated planning propositions through development plans and programs of municipalities, smaller territorial entities, settlements, public enterprises, as well as other programs and projects; research and planning continuation, technical documentation elaboration, spatial changes monitoring and the operationalisation of fundamental Spatial plan conceptions.

In the planning objectives and conceptions implementation, as well in the appliance of defined criteria, measures and instruments, norms and standards the priority is given to:

(1) The provision of indispensable conditions and reduction of spatial construction constraints to an acceptable level, infrastructure systems equipment and functioning in the corridor compliant with Spatial plan's legal regulations, general development determinations and postulates;

(2) Removal of emerged damages caused by the existent infrastructure systems and future rigorous prevention of direct and indirect negative impacts;

(3) Social, economic and environmental population protection in the infrastructure corridor affected by the infrastructure systems construction and function;

(4) The appliance of spatial-planning, urban, and environmental measures defined by the Spatial plan, general acts in view of the environmental protection and immediate technical-technological protection measures;

(5) Stimulation through fiscal and financing measures of those activities, which boost up employment and procure benefits for the planned area;

(6) Provision of institutional, organisational and information conditions for the Spatial plan implementation, as well as conditions for the continuation of commenced researches, programs, plans and projects elaboration from interest for the area's development.

Spatial plan's appliance phases

On grounds of possible phases assessment, along with the justification evaluation and in compliance with the propositions and criteria defined in the Spatial plan, the first phase priorities in the Spatial plan's appliance have been precised for the ensuing fields:

- The construction of new and equipment and arrangement of existent sections with functional contents (road maintenance base,

Radosevic, IV Congress of the Yugoslav road society, Budva 2000, Magazine of the road society: Road and Transport, Belgrade

pay toll gates) and complementary contents for the motorway E-75 users' needs (rest stops, gas stations and motels). In line with the available means, within the planning period, the possibility of phased construction of the motorway's complementary contents has been given. This will be defined by the more detailed elaboration of the planning propositions to the regulation plan level.

- Construction, modernisation and reconstruction of certain main corridor and regional roads sections, but also railroad connections of regional and sub-regional development importance;
- Water utilisation and protection and water energy infrastructure;
- Reconstruction and revitalisation of the existent and the construction of the new electric distribution network and transforming plants, the main gas pipeline and the gas pipeline distribution network and telecommunication infrastructure;
- Environmental protection by the erection of new forests and protection belts;
- Detailed elaborations of the Spatial plan to the regulation plan level.

Obligations in the appliance and activities in the supplement of the Spatial plan

With the plan's appliance guidelines, the obligations have been specified and termed as to the harmonisation of the existent urban plans for encompassed urban building areas and other plans, programs and documentation of responsible public enterprises and special organisations with the Spatial plan's propositions, regulations and guidelines.

The priority measures and activities for the implementation of the planning propositions and guidelines are defined by précising responsibilities, specifying and terming the departmental organs' obligations, together with those of public enterprises and special organisations (the republic's Road Agency, Railroad enterprise "Belgrade", NIS "Energogas", public enterprise "Elektroprivreda Srbije", public enterprise "PTT Srbija", public enterprise "Srbijavode"), expert services of the Danubian, Sumadija, Morava, Rasinski and Nis districts, commercial chambers, the cities of Belgrade and Nis, responsible town assemblies and municipalities in the control and spatial use of the existent and planned corridors of main infrastructure systems.

A special attention was paid to précising the obligations of responsible public enterprises, special organisations and the local government level in view of providing updated information and expert interpretations and instructions to the local population. These information relate to the preparation, adoption and realisation of mid-term and annual spatial rehabilitation and arrangement, environmental protection and compensation provision to afflicted spatial users (as to objects removal, rights constraints in the immovable goods use, damages occurred during the works or exploitation of infrastructure systems) in the immediate protective belts of the main infrastructure systems defined by this Spatial plan.

The obligation to periodically inform the Ministry of Urbanism and Construction on the actors' undertaken activities and problems is specified as to enable the Government of the Republic of Serbia to pass measures for a more efficient implementation of planning solutions, guidelines and measures defined by the Spatial plan.

The grounds for the Spatial plan supplements and probable amendments have been determined. For specific main infrastructure systems in the infrastructure corridor this means the completion and/or alteration and verification of the technical documentation at the general project level. The Spatial plan supplements through the detailed elaboration of the planning solutions at the regulation plan level for planned main infrastructure systems might be realised subsequent to the provision of the technical documentation at the design project level. The responsible public enterprises and special organisations release such information grounded on guidelines determined in the Spatial plan. For the planning solutions elaboration at the regulation plan level a guidelines package has been set, defining exact locations, intersections levelling of the motorway and railroad, water and environmental protection.

CONCLUSION

The Spatial plan's elaboration approach of the infrastructure corridor area was elucidated upon the case of the Spatial plan for the motorway E-75 infrastructure corridor area, section Belgrade-Nis as an example of integral infrastructure corridor planning. The elaboration of planning solutions was based on the problem approach appliance directed primarily

to the provision of the functional infrastructure corridor use, i.e. the optimal distribution, construction, equipment and reconstruction of the motorway's infrastructure corridor complementary contents together with the motorway's connections improvement with the surrounds.

The planning conceptions and Spatial plan's propositions will be implemented through the appliance and in compliance with the determined criteria and measures as to the defined priorities and phases. The obligations and mandatory tasks for the planning propositions implementation have been specified intended for the Ministry of Urbanism and Construction, Republic's responsible public enterprises and special organisations, the district's, town's assemblies' and municipal expert agencies.

REFERENCES

1. Spatial plan's elaboration program for the infrastructure corridor area Belgrade-Nis, Ministry of Urbanism and construction, 2000.
2. Spatial plan of the Republic of Serbia, Official Register, N° 13/1996.
3. The Act on planning and arrangement of spaces and settlements (Official Register of the Republic of Serbia, N° 44/95, 23/96, 16/97 and 46/98).
4. The Manual for the contents and spatial plan elaboration (Official Register of the Republic of Serbia, N° 1/99).
5. Spatial plan for the E-75 Motorway infrastructure corridor, section Belgrade-Nis, Spatial plan draft, Institute of architecture and urbanism of Serbia, 2001.
6. Spatial plan for the E-75 Motorway infrastructure corridor area, section Belgrade-Nis, Documentation base, Institute of architecture and urbanism of Serbia, 2001.
7. Spatial plan for the E-75 Motorway infrastructure corridor area, section Belgrade-Nis, Equipment and motorway corridor arrangement program, Institute of architecture and urbanism of Serbia, 2001.

NEW URBANISM

A New Approach to the Way America Builds

Zeljka Pavlovich Howard

New Urbanism has been characterized as the most important phenomenon to emerge in American architecture and planning since the Modernist movement. Like any movement promoting ideas that challenge long standing practices, New Urbanism has received its share of criticism. This article focuses on the positive aspects of these movements. It provides an overview of the movement and looks into the lessons that could be learned from the application of its ideas to the design and development of cities.

Illustrative of many New Urbanism ideas are the efforts undertaken in Europe during the last decade of the twentieth century. The charter outlines a new vision of the spatial and physical form of the contemporary built environment promoted by New Urbanism and defines the principles and development policies that support that vision. Then, the Charter refers to regions as "fundamental economic units of the contemporary world" and calls for coordination of public policies, physical planning, and economic strategies to deal with this new reality.

New Urbanism brings to fore the importance of an integrated approach to rectifying the problems of urban growth and to bring about change to the unsustainable pattern of the current urban landscape. It, also, asserts that the process for effecting changes in the urban structure and public policies should be based on developing close partnerships and cooperation among various disciplines, interest groups, and citizens. There is, also, an idea on Reaffirmation of the Traditional Urbanism principles that have guided design of cities for centuries. New Urbanism, of course, does not offer solutions to all ills of the American built environment, however, it has inspired significant changes in the approaches to planning and development.

Keywords: *planning, movements, application, design, integrated approach, problems, growth, built environment, coordination.*

New Urbanism has been characterized as the most important phenomenon to emerge in American architecture and planning since the Modernist movement (New York Times, 1996, 27). This movement boldly challenges American planning policies and development practices and offers a compelling alternative to the current urban landscape of sprawling developments. The results have been a renewed interest in the fundamental attributes of town planning and design, and radical changes in the way America builds and restructures its cities.

New Urbanism starts with the basic premise that the current spatial structure of the American-built environment is dysfunctional and unsustainable – socially, economically and environmentally – and must be reformed to efficiently serve the society and preserve the environment. New Urbanism advocates the reintegration of all components of community life (working, living, shopping and entertainment) into cohesive developments comprised of neighbourhoods and cities which are linked

with transit and set into a regional framework. The cities and neighbourhoods should be diverse, compact, and pedestrian oriented, provide alternative transportation modes, include a mix of uses, and promote social integration. To reach this goal of social, economic, physical, and environmental unity, New Urbanism calls for the return to the timeless principles of traditional urbanism and design solutions based on traditional urban forms. These solutions should be adapted to the needs of modern institutions and technology and reflect the local historic heritage and building traditions. The implementation process would be guided by a complex set of design-based principles that operate at all scales of the urban hierarchy – from buildings, blocks and streets, to neighbourhoods, districts and corridors; and, ultimately, to cities and metropolitan regions.

The explanation offered by the movement for the complexity of today's dilemma is the assertion that government policies and Euclidean-based development regulations of the

last half of the twentieth century have encouraged a sprawling pattern of the placeless and disconnected single use suburban developments. Such developments, in turn, have contributed to a myriad of ills: environmental degradation, loss of open space, social segregation, irreversible environmental costs, diminished aesthetic qualities, excessive cost of infrastructure and services, inequitable distribution of economic and social resources, and loss of community identity. The exponents of New Urbanism view these problems as "one interrelated community-building challenge".

This challenge, however, could not be resolved within the current regulatory system. The ultimate goal as stated in the Charter of New Urbanism is to "restructure public policies and development practices to support the restoration of urban centres and towns within coherent metropolitan regions, the reconfiguration of sprawling suburbs into communities of real neighbourhoods and diverse districts, the conservation of natural environments, and the

preservation of our built legacy”.

Like any movement promoting ideas that challenge long standing practices, New Urbanism has received its share of criticism. This article focuses on the positive aspects of this movement. It provides an overview of the movement and looks into the lessons that could be learned from the application of promoted ideas to the cities' design and development.

HISTORY OF THE MOVEMENT

The ideas promoted by New Urbanism are not entirely new. Many have been an integral part of the approach to the design and development of western cities for 5,000 years. Intellectual roots of these ideas can be traced back to, among others, Plato and Aristotle and their ideas about the optimum size, layout and design of cities, Camille Sitte's valorisation of organic towns, and many twentieth century movements seeking solutions to the problems of modern cities. Among these are the movements inspired by the ideas of John Ruskin and Ebenezer Howard at the beginning of the twentieth century in England, and critical commentaries by Jane Jacobs and Lewis Mumford in the mid twentieth century in the United States. An equally important influence on the New Urbanism ideas formulation can be traced to the contextualism of Rob and Leon Krier and the Italian morphologists in the later part of the twentieth century.

Illustrative of many New Urbanism ideas are the efforts undertaken in Europe during the last decade of the twentieth century - *The New Charter of Athens* 1998, adopted by the European Association of Urbanism, and *Towards the Urban Renaissance*, a study prepared by the British Urban Commission in 1999. Interestingly, the Charter of Macchu Pichu, drafted by the International Association of Architects and Urban planners in 1977, was an early promotion of the principles underlying the visions espoused by the ensuing charters adopted in the late 1990s by both, the American and the European architects and urban planners.

New Urbanism first appeared on the scene of American urban planning and architecture in the early 1980s in the ideas espoused by two concurrent movements - *Neo-traditional Planning* and *Transit Oriented Development*. The two movements were initiated in different parts of the country, but employed similar design principles and shared a common premise and overall goals. *Neo-traditional Planning* started

on the Atlantic Coast and was first popularised by the writings and projects of architects Andres Duany and Elizabeth Plater-Zyberk of Miami, Florida. Their ideas promoted a return to the principles of traditional urbanism and the design of cities that fosters a sense of community by providing places for all aspects of community life in an aesthetically pleasing spatial structure. *Transit-Oriented Development* began on the Pacific Coast and was popularised by the works of a Berkeley architect and urban planner, Peter Calthorpe. Calthorpe emphasized a regional approach to urban development that promotes the integration of transit systems on a regional basis. In this regard, Calthorpe advocates the building of compact, mixed-use development surrounding transit stations.

In 1991, the followers of these two parallel movements met and formulated a set of principles that embodied the essence of their shared ideas. These principles are known as the Ahwahnee Principles, named after the hotel in Yosemite National Park in California, where the meeting took place. The widespread acceptance of the Ahwahnee Principles broadened the support of the two movements, and two years later, in 1993, another meeting had been held, this time in Alexandria, Virginia, which led to the creation of a unified movement today known as New Urbanism. Members of this movement formed a non-profit organization - *The Congress for the New Urbanism (CNU)* - and in 1996 adopted a set of principles, which are defined in *The Charter of the New Urbanism* (the Charter).

It is noteworthy to mention that the CNU is often compared to the *Congres Internationaux d'Architecture Moderne (CIAM)* even though these two organizations have diametrically opposing views on many issues. Both CNU and CIAM focus on similar issues: restructuring the existing urban environment disorder, improving community life through urban design and linking economic, social, and physical elements into the cities' design. Furthermore, the charters of both organizations contain principles that outline their respective visions of human settlement patterns.

Unlike CIAM, however, which offers a vision of the functional city accommodating cars, as an antidote to the chaos of the early twentieth century European cities, CNU focuses on neighbourhood design and the impacts amelioration of the automobile upon urban development patterns. The two organizations

promoted diametrically opposite ways of accomplishing their respective visions—CIAM advocated a break from history and traditions and mandated a strict separation of uses, while CNU advocates the respect for the history and the return to traditions believing that cities should provide a diverse mix of uses.

A further distinction between the two organizations is CNU's efforts to use its power as a movement to broaden its base and gain support among all professional organizations that deal with the built environment, including public officials and non-design professions. Collaboration with building professionals - developers, lenders and builders- has proven to be instrumental in much of the success of New Urbanism. CNU also seeks cooperation among all interest groups and solicits participation and input from local citizens. CIAM, on the other hand, excluded non-design professionals from its ranks. Both organizations enjoyed a successful relationship with government organizations. However, while CIAM's primary leverage was “top down”, derived from large state-sponsored projects, CNU relies on a “bottom-up” approach, and focuses on the impact at the local level through restructuring codes and regulations.

CNU's impact has also extended now into the political arena. Its underlying goals and principles defined by the Charter can be found on the list of state and national programs and political agendas of public figures. For example, the US Department of Housing and Urban Development has adopted the principles of New Urbanism as key elements of the federal program known as HOPE VI (Housing Opportunities for People Everywhere) whose purpose is to transform distressed residential areas into mixed-use neighbourhoods. The United States General Services Administration, Environmental Protection Agency and the Urban Land Institute have also developed collaborative efforts with the Congress for the New Urbanism.

CHARTER OF THE NEW URBANISM

The Charter outlines a new vision of the spatial and physical form of the contemporary built environment promoted by New Urbanism, and defines the principles and development policies, which support that vision. The Charter sets out 27 principles to guide planning and design, public policy, and development practices. These principles are organized into three categories, containing nine principles

each, that address the three scales of the urban hierarchy. They start at the scale of the *region* (including the metropolis, cities and towns) followed by the *neighbourhood* (including districts and corridors) and finally the *block* (including streets and buildings). New Urbanism adherents point out that these principles should be considered as a comprehensive sequence dealing with the built environment at every scale. The following is a brief description of the salient points of each set of principles.

The Region: Metropolis, City, and Town

The Charter refers to regions as “fundamental economic units of the contemporary world” and calls for the coordination of public policies, physical planning, and economic strategies to deal with this new reality. Many issues facing the metropolitan areas, such as equitable use of environmental resources, designation of land for open space and agriculture, transportation and economic development, have regional ramifications and thus cannot be effectively resolved at the local level. Since all the elements of the region are interdependent and mutually reinforcing, only a well thought out design of the region can provide parameters for growth in a way that will ensure social, economic, and environmental sustainability of its cities, neighbourhoods and districts.

The regional spatial structure should consist of multiple centres comprised of cities, towns, and villages. Each regional centre in turn has its own identifiable centre and edge. A regional transportation framework interconnects the centres and minimizes the dependence on the automobile by providing pedestrian and bicycle systems and access to transit. Public institutions and services need to be centrally located and accessible to all residents. Cities and towns within the region should support the regional economy that benefits the diverse population. At the same time, individual cities and towns must provide a wide spectrum of private and public uses that accommodate the residents’ needs for work, housing and recreation. Physical geography of the region is defined by the elements of topography, hydrology, open spaces, and farmlands.

All development and redevelopment within the regions must be integrated with the existing urban pattern and should respect the local cultural legacy and building traditions.

Neighbourhoods, Districts and Corridors

The Charter considers neighbourhoods,

districts and corridors as “the fundamental elements of development”. This, the middle scale of the urban hierarchy, best illustrates the key challenges of New Urbanism: the reaffirmation of urbanism’s traditional principles and the conflicts resolution between the traditional urban form and the needs of modern institutions and technology.

The focus is on the neighbourhood, which is considered to be “an essential building block” of the cities’ social and physical structure. The Charter addresses two types of neighbourhoods: 1. *Traditional Neighbourhood Development (TND)* based on Clarence Perry’s concept of the neighbourhood unit introduced in the First Regional Plan of New York in 1929 and modified here to reflect the contemporary institutions, markets and infrastructure needs (figure 1); and 2. *Transit Oriented Development (TOD)* as originally formulated by Peter Calthorpe (figure 2). These two types of neighbourhood development have a common premise and share similar characteristics.

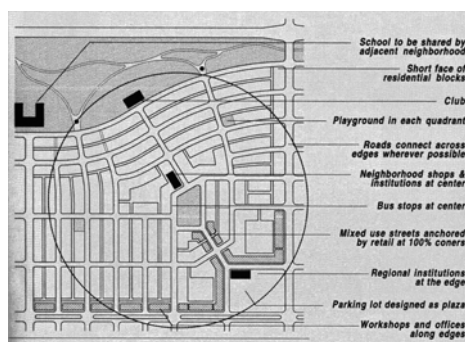


Fig.1. Traditional Neighbourhood Development
Source: Duany Plater-Zyberk

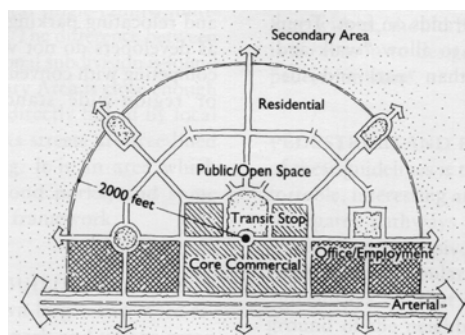


Fig.2. Transit Oriented Development
Source: Calthorpe Associates

The neighbourhood structure should be compact, incorporate mixed-use development, contain a variety of housing types, and be designed

to foster social interaction. A quarter mile distance from the centre to the edge, which can be covered in a five to ten minute walk, defines the optimal size of the neighbourhood. Within this convenient walking distance is located a mass transit stop (bus or light rail) and all neighbourhood activities and services necessary to meet the daily needs of its residents. Neighbourhood streets are designed to foster pedestrian use, with street trees, wide sidewalks, and street furniture. They also provide for street parking and accommodate cars and bicycles. Street edges are defined by low to medium high buildings, which are set close together and close to the sidewalks. Open spaces are dispersed throughout the neighbourhood.

The focal point of the neighbourhood is the centre, which contains civic buildings, public gathering places, retail and entertainment establishments. The edges of the neighbourhood vary, depending on their location relative to the main urban centres. In suburban locations the edges are marked with open spaces; conversely, in dense urban settings, neighbourhoods are often bounded with wide streets or boulevards along which commercial centres are located.

Neighbourhoods could be created as isolated entities, as parts of infill projects or city’s extensions. The town of Seaside in Florida designed by Andres Duany and Elizabeth Plater-Zyberk was the first development that employed the neighbourhood design principles (figure 3). A master-planned community designed by Peter Calthorpe, Laguna West, exemplifies the principles of the Transit Oriented Development (figure 4).

Block, Street and Building

Blocks, streets and buildings, the smallest scale of the urban hierarchy, are viewed as the essential elements of the traditional urban context. “A primary task of urban architecture,” states the Charter, is creating “the physical definitions of streets and public spaces as places of shared uses”. Integration of streets and blocks creates a fine-grained structure of public and private spaces. Neighbourhoods designed along these lines have sufficient flexibility to transform over time, building by building, as needed to accommodate change. Current suburban subdivision designs, by contrast, are not suitable for incremental transformation and can only be changed in their aggregate form.

Design of neighbourhood buildings, the street layout, and delineation of blocks reflect the

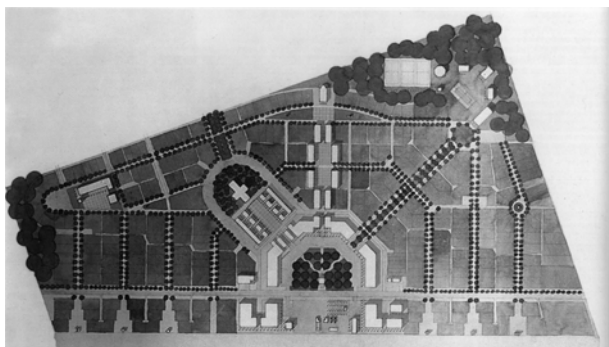


Fig.3. Plan of Seaside

Source: Duany Plater-Zyberk

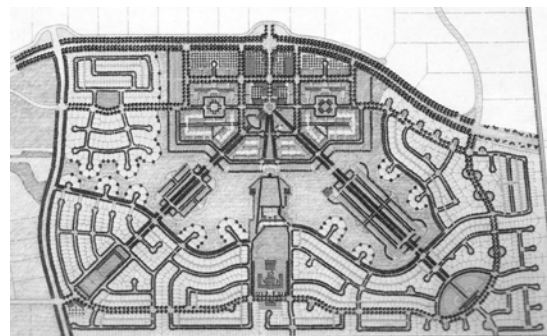


Fig.4. Plan of Laguna West

Source: Calthorpe and Associates

local history, environmental characteristics and indigenous building practices. Attention is given to the creation of a unified whole where individual buildings and blocks are not isolated objects but contribute to the definition of public spaces and a sense of place creation.

The landscape design has also received renewed attention. It is used to span all three scales of development and ties them together with a system of public spaces including parks, open spaces, promenades, and squares.

LESSONS LEARNED

Integrated Approach

New Urbanism brings to light the importance of an integrated approach to rectifying the problems of urban growth and leads to changes in the unsustainable pattern of the current urban landscape. This approach calls for the integration of all factors shaping the built environment –social, economic, ecological and physical. As they are all interrelated, they must be addressed together to reach successful solutions.

The key element in this approach is a regional perspective. The region, as asserted in New Urbanism, is the critical factor in the life of all its integral parts—from cities, neighbourhoods and districts, to blocks and buildings. Without the consideration of all factors effecting the entire region's development, even developments designed to conform to the New Urbanism principles might end up being nothing more than part of faceless urban sprawl.

The application of a regional perspective was first introduced by Patrick Geddes and embraced by Ebenezer Howard at the end of the nineteenth century in England. Daniel Burnham, Lewis Mumford and the Regional Plan Association of America continued this

tradition in the United States. However, while planning within the regional context remained an accepted approach to planning in Europe, it received little attention in America with the exception of the plan for Chicago in 1909 and the First New York Regional Plan in 1929.

In America, in the early 1990s, the works and writings of the CNU members, most notably Peter Calthorpe (Calthorpe, 1993), brought a renewed attention to the importance of the regional perspective. During the last decade of the twentieth century, the regional perspective has increasingly gained support among planning professionals, politicians, environmentalists and the general public for dealing with problems related to growth, environmental problems, and quality of life. In fact, the support for the regional approach has become strong enough to give impetus to an emerging movement in its own right: "New Regionalism".

Cooperation

New Urbanism asserts that the process for effecting changes in the urban structure and public policies should be based upon developing close partnerships and cooperation among various disciplines, interest groups, and citizens. Cooperation is the key element for building support for the change and creating solutions that are responsive to local conditions and wishes of all local stakeholders. Such participatory process is now rather common in the United States. In many states, planning laws authorise citizens to become actively involved in many aspects of the planning and decision making process. But, in contrast to many planning efforts where only completed development proposals are exposed to public review and comment, New Urbanism incorporates public participation throughout the planning and design process. The community involvement plays an important role starting with the discussions about the creation

of a common vision, the formulation and selection of alternative plans, and ultimately to the creation of implementation strategies.

Professionals who employ various methods including visioning workshops, visual preference surveys and weeklong urban design charrettes usually facilitate the participatory process. The use of visual methods –drawings, diagrams, photographs– helps clarify design concepts to laymen who are not familiar with the professional jargon and terminology. Design ideas are communicated in two-dimensional plans representation and three-dimensional representation of buildings and urban spaces to better facilitate an understanding of how the proposed plans relate to the area's context. These techniques serve to both educate and engage the public in a meaningful dialogue about the community planning and design issues and help visualize and evaluate alternative proposals.

Reaffirmation of the Traditional Urbanism

New Urbanism has reminded American planners, public officials, and the community, that design matters. Innovative design concepts and visionary proposals are required to reflect the needs of contemporary life, and they should be integrated throughout the regional, city, neighbourhood, and site scales of development. The movement also stresses the value of traditional urbanism principles that have guided city's design for centuries and created many memorable monuments of our urban heritage. The Charter calls for "a return to our obligation to carry on the traditions of the tested craft of traditional urbanism" (CNU, 2000).

The ideal structure of cities and neighbourhoods, as described in the Charter, is achieved through the planning and design process that recognizes the need to accommodate multiple

sets of activities in a physical setting of a human scale, and at the same time provides opportunities for efficient functioning of modern institutions and corresponding infrastructure systems. This view is reflected in the principles indicating how the elements of the city must be developed –from the correlation between the individual buildings and the street to the way in which local land uses and densities relate to the regional system of mass transportation. These planning and design principles are applicable in the reconstruction of the existing urban areas, renovation and development of new urban centres, development on the urban fringe, and design of new master planned communities and new towns.

Not surprisingly, New Urbanism has been criticized for the attention it gives to the physical design, which has rekindled the long-standing debate on the relationship between the built environment and human behaviour. Design alone can't make community life flourish, critics say, but as past experiences have proven, neither can the policies downplaying design. These policies produced some of the most telling development examples that failed both aesthetically and socially, in the inner cities as well as in fringe developments. In fact, most of the American post W.W.II "faceless" and "any place USA" development is a testimony to the inadequacy of these policies. New Urbanism recognizes the limitations of one-sided development policies, and clearly relates design of places to social, economic and environmental aspects of urban life. The preamble of the Charter clarifies the New Urbanism's stand on this point: "Physical solutions by themselves will not solve social and economic problems, but neither can economic vitality, community stability, and environmental health be sustained without a coherent and supportive physical framework."

Integration of planning, design and implementation

New Urbanism emphasizes the importance of a coordinated approach to planning and development that integrates planning, design and implementation. Many urban problems, claim the New Urbanism supporters, relate to the absence of coordination between planning at different development scales and the lack of a clear correlation between planning goals and development policies. The conventional zoning currently widely used as the basic regulatory framework in America is not promoting high-

quality planning. On the contrary, it regulates out sustainable development and encourages the separation and dispersal of development. Further, the proliferation of conventional Euclidean-based codes for guiding development creates serious barriers to implementing alternatives correspondent with the current development patterns.

New Urbanism offers various alternatives to the conventional mechanisms of the regulatory system. Many new codes and regulations were developed to guide planning and project development. These codes translate the goals of the master plans into specific guidelines for planners, developers and architects. Unlike traditional zoning, these guidelines indicate building typologies appropriate for various locations within the neighbourhoods and districts, and call particular attention to the design and location of civic buildings as well as buildings and structures defining public places. These guidelines are typically presented graphically in a series of diagrams that are very easy to understand. This is yet another departure from the conventional regulations which are often presented in thick volumes and require legal experts for clarification.

New Urbanism, with its concept known as "transect" planning, offers a very powerful alternative approach to the conventional regulations. The transect approach provides a new way of classifying development and open spaces based on the spatial distribution of urban elements along a geographic cross-section of a region. Its underlying principles are based on the ecological theory, which view rural and urban conditions as interconnected parts of a system requiring different forms depending on where the development is located.

The transect methodology involves making a horizontal cut through a landscape from the rural setting with the lowest land use intensity and continuously extending it to the urban core with the highest development level. Thus, the transect defines a sequence of environments that reflect a range of varying development intensity levels providing a comprehensive framework for defining interrelationships between all scales of the rural-to-urban continuum. Using this framework and the geographical settings characteristics along the continuum (rural, suburban and urban), appropriate development intensities can be defined for each transect zone. Each zone's development would be guided by a set of planning and development policies that specify development

plans types pertinent for each zone, development intensities and urban morphology, including the streets, buildings, and public spaces typology.

The advantage of the transect approach, New Urbanism promoters believe, is in campaigning for the creation of sustainable urban patterns with urban forms that are interconnected with rural areas and other parts of the city. Moreover, this leads to a better integration of local and regional building traditions. Equally important, transect planning integrates procedures for plan preparation with design and development policies. Consequently, another crucial advantage of this approach is that planning and design goals are reflected in the implementation devices, which is absent from the current development policies.

Duany Plater-Zyberk & Company (Duany Plater-Zyberk, 2001) recently developed a transect model code *-the Smart Cod-* which has been implemented on several locations in the United States (figure 5).

CONCLUSION

New Urbanism, certainly does not offer solutions to all ills of the American built environment. For example, neither does it contemplate the programs for economic development, programs for affordable health and social services, nor does it have the power to override market forces and insure housing supply that meets the needs of a diverse population. New Urbanism simply offers an alternative approach to developing solutions in respect to the growing challenges of contemporary cities with clearly defined planning policies, design principles, and implementation strategies.

At present, New Urbanism enjoys wide support in the ranks of architects, urban planners, educational institutions, academics, politicians, developers, and the general public, and has inspired significant changes in the approaches to planning and development. In many parts of the country, the regional and city plans, and development policies are undergoing change including the New Urbanism principles into their development codes. Also, the key principles of New Urbanism are now incorporated in the principles and policies of other movements interested in finding solutions to the effect of sprawl and improving the quality of the natural and built environment. They include Smart Growth, Liveable Commu-

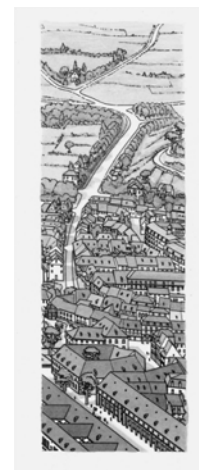
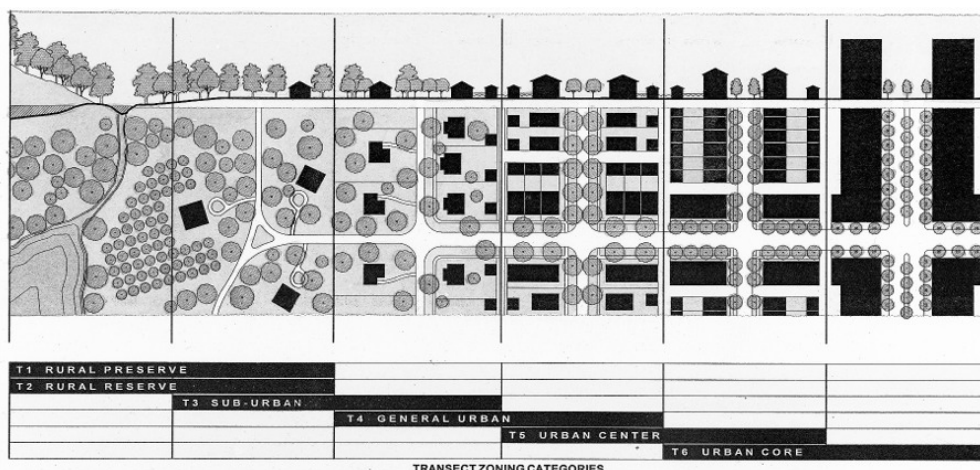


Fig.5. Rural to Urban Transect

Source: Duany Plater-Zyberk & Company

nities and national environmental organizations. The impact of New Urbanism has extended into the political arena as well—its underlying goals and principles can be found on the list of state and national programs and political agendas of public figures.

Probably the best testimonies of this movement's importance are the numerous projects, whose planning and design are guided by the New Urbanism principles. In 1999, Time Magazine recognized the existence of more than 150 developments in the United States and other countries including Philippines, Australia and Finland complying with the New Urbanism principles, while 200 such projects were on the drawing boards (Time, August 16, 1999). They include: the redevelopment of high density residential projects in large cities, the revitalization of commercial centres in existing urban areas (grey-fields), the development of urban areas and urban fringes which were contaminated (brown-fields), the new master planned communities and new towns outside of existing urban areas

(green-fields), and affordable housing developments.

The jury is still out. It is as yet early to make a reliable evaluation of the lasting impact of this movement. However, in spite of its shortcomings, the critics agree, New Urbanism is very effective in the restructuring of urban development patterns and curtailing sprawl. It is undeniable that a model which respects the regional context, creates a sense of community, advocates compact development around transit stations, promotes social integration, and calls for development of diverse neighbourhoods with mixed uses, is far more superior than the current alternative. Today's suburbs and cities characteristics with regard to their economic prosperity, physical character and impact on the natural environment, are a good illustration of the shortcomings of the current model shaping the American built environment.

New Urbanism offers a set of ideas expressed in the charter with no real power. "But, ideas

ultimately can have more power than money, profit or the political bureaucracy if enough people believe in them" (Sacramento Bee). Therein may lay the answer.

REFERENCES

1. *The Charter of the New Urbanism*, The Congress for the New Urbanism, McGraw Hill, New York, 2000.
2. Duany A., Plater-Zyberk E., and Speck J., *Suburban Nation*, North Point Press, New York, 2000.
3. Calthorpe P., *The New American Metropolis*, Princeton Architectural Press, New York, 1993.
4. Dutton J., *New American Urbanism*, Skira editore, Milano, Italy, 2000.
5. Duany A., and Talen E., Transect Planning, *Journal of the American Planning Association*, 68-3, 2002.

SOME PROBLEMS OF INTEGRATING THE LANDSCAPE PLANNING INTO THE SPATIAL AND ENVIRONMENTAL PLANNING IN SERBIA

Marija Maksin Micic

A short review has been given of Serbian spatial and environmental planning, and in particular of relevant legislation. Attention has been paid to the landscape treatment within legislative grounds, and correspondingly in planning practice. Few assumptions have been made, upon the lack of methodological and integrated approach to the landscape protection and management. Strategic plans (spatial and town master plans), sectoral plans and policies (for soil, forestry etc) have been reviewed in attempt to verify the stated assumptions. The problems of landscape and open green space protection and maintenance have been brought up. In reference to the EU recommendations, legislation and instruments have been investigated regarding the entrenchment of the landscape concept and landscape planning into the spatial, environmental and related sectoral planning. Prior to the landscape concept implementation is the survey and establishment of regional landscape diversification so as to differentiate regional approaches to landscape planning.

Key words: *spatial planning, environmental planning, landscape planning, survey, and landscape diversification, landscape protection.*

INTRODUCTION

In the waves of transition and recent changes to political system and regulatory planning mechanisms in most Eastern and Central European countries, the Serbian planning practice is discovering new avenues trying to develop original activities within the framework of economic, political and professional independence.

Planning in Serbia has lost its former legitimacy, but has not yet achieved the new authority and role in directing and controlling the development.

After periods of centralization (before 1974) and decentralization (1974-1990), in the last decade of the 20th century and at the beginning of the 21st century the whole planning system, but foremost the socio-economic planning collapsed, leaving spatial/physical planning to muddle its way through (without basic inputs from socio-economic planning), and environmental planning system in the unfinished state.

The widespread rejection of planning since early 1990s inflicted the disregard of its pertinent role in the transition period. On the other hand, the planning system and practice have long been in need of a radical reconstruction; consequently the present changes only reiterated such an urge.

The main idea of this paper is to discuss the present state and problems of the Serbian spatial, environmental and landscape planning practice, to develop possibilities to improve the landscape planning practice and to integrate it into the planning system, while being in the re-definition and re-conceptualisation phase. The necessity to adopt and implement numerous EU frameworks, legislation and instruments might be working to the benefit of the processes in question. At the same time, this approach would reflect how the Serbian planning community might improve its "own values" whilst looking forward to creating a modern and efficient planning mechanism.

KEY PROBLEMS OF SERBIAN SPATIAL, ENVIRONMENTAL AND LANDSCAPE PLANNING

Spatial planning

Legal grounds for spatial utilization, protection and construction, in comparison with the European countries, ought be classified into the category of extensive non-codified legislation. Some parallels might be drawn to Greek, Italian and Portuguese state of affairs because of the lack of codification, actuality, consistency, uniformity and circumstances of the legal solutions. (The EU compendium of spatial planning systems and policies, 1997.) The hyper-production and non-codification of laws and secondary legislation represents a real drawback of Serbian society and the planning system at all levels. For example, nearly 40 laws have direct or indirect impacts on the spatial utilization, protection and construction. Legal grounds, both in the previous period and in latest attempts during 2001-2003, failed to establish the necessary principles and mechanisms, so as to gain the

executive powers in terms of coordinating different interests, influences and activities in urban or rural areas.

In comparison with the planning practice in European countries, the spatial planning in Serbia is relatively developed in respect to the contents and the representation of various strategic and regulatory plans foreseen for different planning levels. As a binding and indicative framework, strategic planning includes: national, regional and local (for communes) spatial plans, spatial plans for special purpose areas (i.e., areas of natural and cultural heritage, infrastructure corridors, lignite basins or open cast mining, water basins, tourism areas, etc.) and town master plans. In the past, spatial plans for communes, plans for special purpose areas, as well as town master plans played the most significant role in view of the land use, spatial development and protection. Due to over-centralization, since 1995 the spatial plans for communes have been abandoned, with sound claim for its restoration ever since.

The expectations of the planners that the passing of the strategic planning framework on the national/republican level (The Spatial Plan of the Republic of Serbia, 1996), was to bring about an important improvement in the changing role of the spatial planning, which would incite the re-definition of the planning system in Serbia have failed.

The current social problems and those of the planning profession within frequently changing legal conditions are well documented by Perisic and Bojovic (1997) who say that "we can help society only to the extent society, i.e. its political factor on its behalf, understands the problems and wishes to solve them". They further claim that we are far away from political consensus on the goals and a strategy concerning the development of the national territory, towns and cities, because everyone believes their interest to be the most important and most legitimate. Consequently, the ruling elite does not consider the physical planning and urban manifestations of public interest as societal preferences. That is as true now as when it was written.

Subsequent to passing of the Spatial Plan of the Republic of Serbia, the elaboration of the strategic and regulating planning grounds has stagnated. Instead of the planning bases, which ought to guide the spatial development, utilization and protection, and coordinate various interests, planning instruments are

widely used to ensure the interests of groups and individuals in the spatial organization and utilization. The category of urban development and comprehensive (town) master plans, which existed for almost 50 years, were replaced by the so-called urban design projects. Perisic and Bojovic (ibid) argue that in practice, today's urban planning is almost nonexistent, as are corresponding urban analyses and reports. Technical documentation (most often infrastructure design projects) has often been considered as adequate substitute for urban plans, enabling the granting of planning and building permits by the state and local authorities. Due to the planning activities decrease, in Serbia, a wide-spread spatial disorder has evoked numerous illegally erected or adapted buildings, encompassing mostly individual housing units, and small business premises, as well as a number of large state/publicly owned assets.

In relation to the planning systems of the European countries, the spatial planning system in Serbia can be classified as incomplete and inefficient comparable to the Greek, Italian, Portuguese, and Spanish (The EU compendium of spatial planning systems and policies, 1997), especially in view of the inefficient implementation of strategic and regulatory planning grounds.

The need to regard the preparation and implementation of plans as two interrelated components of an integrated professional and legal development process, rather than as two separate activities, has not been emphasized in the Serbian political and socio-economic practice, moreover it was neglected/avoided in the current legislative. Therefore, the activities of the state and the social community in the provision of corresponding support to the effectuation of the plan implementation are missing. Crucial problems of the organization and accomplishment of the plan implementation are insufficient and slow coverage of the space with appropriate strategic and regulatory plans, absence of programming, information and monitoring support, insufficient and extensive institutional-organizational arrangements on all levels of management etc. A specific problem resides in the lack of important policies (regional, land, housing, etc.), or in the deficiency of measures and instruments of various policies that might serve to control and curb the spatial use (fiscal, credit, investment etc.). On the other side, the disregard of the local population in view of providing proper information and education,

the lack of professional help and organization of the local public and private sector's participation is more than obvious. (Maksin-Micic, 2000)

Environmental planning

Similarly to the spatial planning system, legal grounds for environmental protection can be classified into the category of extensive non-codified legislation. In the mid-1990s, new aspects in the environmental policy and planning came to force. A number of the ex ante EIA procedures was prescribed in the preparation of urban design projects, technology programmes and technical documentation. An effort was made to prescribe, in legal terms, an approach pertinent to sustainable development. The practice has been lagging far behind normative protection, producing poor environmental conditions, thus in a sharp contrast to both a dense web of legislative and other environmental regulations, and achieved level of socio-economic development in Serbia.

With regard to the relation between environmental policy and spatial and town planning policy, the key characteristics of the existing situation could be specified. In practice, the level of harmonization between different planning processes and procedures is relatively low. This, in particular, applies to the ex ante planning and environmental evaluation assessment. Therefore, it could be stated that the environmental protection is not sufficiently integrated in the decision-making on spatial development and other related matters. This is partly caused by rather undeveloped methodology for integrating planning policy and environmental policy. Both in spatial planning and environmental policy, there has been almost no example of a systematic ex post or ex continuo evaluation/assessment, the ex ante evaluation/assessment being practiced by far the most frequently. The majority of ex ante evaluation studies, however, handle a rather narrow scope of impacts, inferred costs and benefits. Likewise, the assessment of a single (anticipated) development and protection option dominates over the evaluation of alternative strategies.

The National Assembly of the Republic of Serbia is in the ratification procedure of the new "umbrella" environmental law, with strengthened attempts to insure the overall coordination of spatial, environmental and sectoral planning. As for the planning and environmental evaluation assessment instru-

ments and procedures, for the first time the SEA and ex-post EIA are stipulated. Following the EU directive, SEA is connected with the spatial, town and sectoral planning processes and procedures, and ex-post EIA with the investment projects realization. The methodology for SEA preparation being still under way may be a serious handicap for its application.

Key problems of integrating the landscape planning into the spatial and environmental planning

Cvejic, Vider, Prokic (2001) argue that the landscape planning has not yet become a properly defined planning field within the planning system and practice. This is mainly due to the lack of an adequate legislative framework. The way that landscape is treated and integrated in the planning systems in European countries has never gained acceptance and turned into tradition in Serbian practice, contrary to some of the former republics of the FRY (e.g. Slovenia, Croatia). Nevertheless, since 1970s some experts, not only from the biology disciplines (Bogdanovic, 1973; Milinkovic, 1978; Jankovic, 1987; Gostovic, 1989 etc.), have spoken in favour of advanced approaches to the landscape treatment.

The landscape as a specific planning aspect, and related planning field has been neglected not only in the spatial and sectoral planning, but also even in the environmental planning. The landscape concept and landscape planning have neither been adequately embedded within an array of Urban and Regional Planning Acts, and Environmental Protection Acts, nor by the related legislation on natural resources (agriculture land, forestry, water, mine etc.).

In the current Urban and Spatial Planning Act, as well as in the Act in preparation, it is not provided for the element of landscape, neither of landscape planning, protection and management within the planning process, nor of the landscape as a binding component of the strategic plan's contents. Furthermore, not even the provision of open green spaces as a component of regulatory plan's contents has been suggested. This has partly been bridged by the secondary legislation, however only in the regulatory plans and instruments (design projects) for urban areas. On the other hand, not a single provision related to landscape or open green spaces has been stipulated when speaking of the regulatory plans and instruments for rural areas.

In the current Environmental Protection Act, the landscape concept has been related exclu-

sively to the natural heritage, as one of the prerequisites for its establishment. At the same time, landscape protection and management are not mentioned in any of prescribed environment and nature protection related policies, plans or programmes, not even in those associated to natural heritage preservation. Similarly, the forthcoming "umbrella" environmental law, though relatively ambitious and progressive, failed to forward the approach to landscape treatment vis-à-vis previous legislation. In fact, environmental legislation, with the "umbrella" law is first and foremost essential for the creation of the landscape concept, landscape planning, protection and management, but also for contriving interrelations with other planning fields, their planning processes and procedures.

In the spatial and town planning, the landscape treatment has been fragmented and reduced to particular landscape components. Spatial planning at all levels has completely neglected the landscape, its ecological, cultural, socio-economic, aesthetic and other values. This is the case with the Spatial Plan of the Republic of Serbia, as well as with the spatial plans for the specific purpose areas with intensive spatial/physical and socio-economic transformations (i.e. construction of regional water reservoir or highway, open cast mining etc.). Any attempt to analyse and assess expected impacts, and to steer and reduce landscape changes and damages have been avoided. For example, the spatial plan for lignite basin deals with the problem of the revitalisation and restoration of damaged areas after mining. At the same time they deal very little with the landscape damages and arrangement. So far, the first attempt of the kind has been undertaken during the preparation of the Spatial Plan of the Pan-European Multi-modal Transport Corridor "10." - Section Belgrade-Nis (2001). The idea was to analyse the highway construction and exploitation impacts on landscape, and to prescribe measures and actions for landscape protection and management. Nonetheless, the first problem has been the already caused landscape damages due to the fact that the highway section has been constructed a decade ago. The second problem has been the lack of the basic research of the landscape typology at the national, regional and local level. In such circumstances the spatial plan could deal only with the presumptions of different landscape types and alterations, and measures for their recovery or restoration, and arrangement. The other spatial plan for the Corridor "10." -

section Nis-FRY Macedonian border, has taken into consideration the landscape design at the level of regulatory plans for highway sections and different kinds of highway facilities (e.g. gas stations, motels, resting places etc).

Vider (1996) discussed the spatial planning practice of the natural heritage areas, some of which have been competing for or listed at the Ramsar and MAB list etc. She pointed out that from the nature protection and preservation standpoint, the spatial plans for natural heritage areas (e.g. national parks, wetlands, gorges etc.) were deficient in terms of the landscape functions and complexity treatment, especially in regard to the eco-biological component.

So far, interceding the integral approach in the spatial planning methodology has been incomplete, considering the missing comprehensive treatment of the landscape protection and management in the planning process. In the process of preparation and evaluation of planning options and concepts the landscape valuation and landscape plan deficiency has been evident. When introducing the SEA into the planning process, the landscape plan should be considered as an instrument for the alternative planning strategies and variant planning options evaluation assessment.

Essentially, Serbian territory has very diversified landscape, from distinctive plains and valleys, to hilly and mountain areas. So far, neither basic comprehensive and systematic research of the landscape typology has been undertaken, nor the regional diversification and classification of the landscapes (or landscape units)¹ has been established. As a result, serious limitations have occurred to creating protection policies and management frameworks for diverse landscape types, as well as to prescribing adequate recommendations and measures to the spatial, environmental and sectoral planning.

Cvejic, Vider, Prokic (ibid, p. 37) emphasize other problems of the Serbian planning practice. In the first place, they underline the undeveloped application of the landscape methodology and methods into the planning

¹ For example, in the Strategy of Spatial Organization of the Republic of Croatia (1997) the 16 regional landscape units have been differentiated, and the accompanying propositions and measures for the lower-level of the spatial planning prescribed.

process, which they assume is partly the result of lacking landscape data base, and techniques for their preparation and appliance (e.g. GIS, cadastral register, vegetation maps etc.). Secondly, they stress out the insufficient public education and information on the landscape diversity values, and their protection and management.

Somewhat better is the state of the town planning practice despite the insufficient legislative provisions for master plans. As a legacy of relatively successful and long tradition of the urban planning practice, foremost of the planning methodology established during the "golden age" of urban planning in SFRY and in Serbia (the end of 1970s and 1980s), a particular form of the landscape planning application has since been in practice – the plan of the open green and recreation spaces. On the other hand, the neglect of the aquatic landscapes and of diverse landscapes of the peri-urban zone has been one of the main weaknesses of the master plan preparation. Problems arose in regard to the extent of the pollution, land use pressures, and land speculation to which landscapes in this areas have been exposed. They cannot be addressed with fragmented measures of sectoral policies, without integrating landscape protection and management policies into the problem solving process.

As for the open green and recreation spaces the strategic urban planning practice can be valued as satisfactory, but the same does not stand for the regulatory plans and instruments, especially in Central Serbia. Both in Vojvodina and Central Serbia, the regulatory plans and instruments for urban districts display serious deficiencies, often defining open green spaces as "leftovers", only after all other land uses and activities have been defined in plan concepts.

A drastic handicap from the functional and landscape viewpoint, not in relation to the strategic but the regulatory plans level (for urban districts, peri-urban zones and rural areas), are the inadequate and incompatible constructions, encompassing mostly individual housing units, and small business premises. For example, Negotin is the outstanding traditional-cultural region in the Eastern part of Central Serbia, with a rich construction tradition and cultural heritage correlating with distinctive plain landscape. At the same time, this is the region of a high emigration rate. First migrations were to Slovenia, afterwards to Austria and Germany, and eventually Sweden.

Each migration brought a new life style and a non-critical adoption of the construction types characteristic to the Alps or other mountain landscapes. Today in the Negotin region, the visitors are visually misled as far as new building and construction types are concerned, unable to discern whether they are in the plain or some mountain area.

Similarly to the plan implementation limitations in other planning fields, the problem lays in the implementation of planned open green and recreation spaces. Opposite to the "golden age" of urban planning, with a good practice of green space arrangement, particularly for the new housing within urban areas, the early 1990s have been the turn-point in abandoning the previous practice. The dearth of financial and other investment resources led to the decrease of public investments in building, usually by cutting down the budget costs for erecting the planned public open green space, or their maintenance. Nevertheless, planned public green or existent open green spaces have become subject to all kinds of speculation. As a result, degradation and loss of the made public green spaces has expanded over the last decade. The planned public green spaces have neither been created, nor have they been protected from re-planning for other land uses, mainly for building. Since the cadastral register of the green space systems has not been established, it makes it easier to re-plan the land use according to particular interests, rather than to public interests. At the same time, this deficit limited the strategic and regulatory plans preparation, and hence the monitoring of the plan implementation of open green space. Land speculation and spill over of the illegal and unplanned construction in urban areas, especially prevailing in peri-urban zones, has brought up an extremely poor practice of disregarding the citizens' needs for the open public green spaces. The same goes for leaving any reserve space for the creation of new ones in the future.

The landscape planning and protection have been absent from sectoral planning and policies. Such a practice is unacceptable in consideration of the utilization and protection of agriculture land, forestry and deforested soil, open mining, transport infrastructure and other land uses with enormous impacts on the landscape protection and management.

According to Cvejic, Vider, Prokic (ibid, p. 37), the environmental planning and policies, in particular those related to natural heritage

preservation, show differences between the landscape protection and natural heritage protection/preservation concept, which have not yet been resolved. Moreover, divergences are evident on the subject of the criteria for defining the boundaries of the protected area, and of its buffer zone. Therefore, the research and establishment of the natural heritage areas have not taken into consideration the survey of the landscape typology, of landscape sensitivity and vulnerability, of their potentials and constraints for different activities development. Hence, it was not deliberated upon the protection measures and buffer zones adjusted to various landscape types. The same stands for the cultural heritage protection practice.

POTENTIALS OF INTEGRATING THE LANDSCAPE PLANNING INTO THE SPATIAL AND ENVIRONMENTAL PLANNING

Ahead of us is the period of the planning system and planning methodology confirmation, and the re-establishment of its legitimacy and effectiveness. The confirmation of the planning system and relevant legislation should be done in reference to EU legislative and frameworks for common areas, in the planning field in particular. This circumstance may be an advantage, which will contribute to defining the role and position of the landscape planning within the future planning system development.

Such a presumption is in accordance with at least two of numerous EU documents, which set the framework and instruments, namely with ESDP (European Space Development Perspectives, 1999) and with ELC (European Landscape Convention, 2000). ESDP has underlined conservation and wise management of natural resources and cultural heritage as one of three fundamental goals of the European policy. Further on, as for the creative management of cultural landscape, it is stressed out that policy options will be: (i) the increase of the value of cultural landscapes within the framework of integrated spatial development strategies; (ii) improvement of the development measures co-ordination, those which have an impact on landscapes. (Ibid, p.34) In ELC general measures refer in particular to: (i) the recognition of landscapes in law as essential components and an expression of the local diversity and identity; (ii) integration of landscapes into regional and town planning policies as well as sectoral and other policies of direct or indirect impact on landscape. (Ibid, p.3)

Bearing in mind the proposals and prescriptions of the EU frameworks and regulations, and taking into account the necessity of re-defining the Serbian planning system, some of the promise for landscape treatment improvement could be predicted, in particular in the spatial planning field.

Prior to all will be situating and defining the landscape concept and the landscape treatment into the environmental law and legal instruments. Consequently, the next step will be defining the landscape planning and protection as a specific planning aspect of the spatial planning and relevant sectoral planning processes, i.e. the landscape treatment as a binding component of the strategic plans concepts.

As for the landscape treatment positioning in the planning methodology, two opposite approaches figure so far. The first, delivered by experts from the landscape disciplines (Cvejic, 1996; Vider, 1996; Cvejic, Vider, Prokic, 2001), has pledged for the landscape plan as a sectoral plan, which would be a binding foundation for strategic plans preparation, in reference to landscape planning practice in the German land Nordrhein-Westfalen. The second, being promoted by experts from the biotechnology disciplines (Jovic, Medarevic, 1996), disagrees with first, seeing the landscape plan as a particular planning aspect or as component integrated in the sectoral strategic plans, i.e. forestry management plans.

From the spatial planning standpoint there are at least four problems that should be taken into account: (i) Sectoral lobbies are powerful, especially those of forestry management, transport infrastructure, water management etc. (ii) The planning lobby has an inferior position within the political and economic decision-making hierarchy; Landscape architects have not yet been in coalition with any of the existing lobbies, apparently not having enough strength to establish one of their own. (iii) Strategic planning has been in a deep crisis, which affected the sectoral planning less than other planning fields, especially in comparison to the landscape planning. (iv) The re-definition of the planning system, and of the spatial planning system in particular, would have to establish the legal requirement and the legitimacy for integrated and inter-disciplinary supervised spatial development. In that sense, different approaches to the landscape treatment within the planning system and planning process ought to be reviewed.

In this respect, the approach to the landscape treatment as an integral component and specific aspect of the spatial and environmental planning, as well as the element of sectoral planning fields with predictable impacts on the landscape seems more realistic and operational.

Essential to introducing the landscape concepts into the spatial planning practice is the establishment of regional landscape diversification and of diversified regional approaches to landscape planning. In Serbia there is at least 10-15 regionally diverse landscape types (units). In achieving the desired improvement of the strategic planning, a systematic basic survey of the landscape typology and regional landscape diversification will have to be undertaken. The outcomes of such a survey would set up the framework, measures and propositions for strategic plans, i.e. spatial, environmental and sectoral plans and policies at the national/republic, regional and local level. This survey should be focused on the essential components and characteristic values of particular landscape types (units). In strategic plans i.e. in the spatial development planning, in land use and organization, and construction, the major issues preferably will be the protection of the diverse landscape values, natural and cultural ones, being recognized as essential spatial characteristics. Besides there are other imperative reasons: ecological, cultural, aesthetics etc.

The outcome will possibly be the introduction of the landscape protection and management as an instrument for spatial planning and environmental evaluation assessment, both within the ex-ante and the ex-post planning policy evaluation. As for particular methods and techniques, in the light of the increasing relevance of interest planning aspects, as well as of the claims to integrate environmental concerns into strategic planning, plausible seem various combinations of approaches in the tradition of SCBa (Social Cost Benefit analysis), on the one hand, and those from the now emerging SEA (Strategic Environmental assessment), on the other. Predictably, the landscape protection and management may easier define its position and role in such combinations.

CONCLUSION

Despite at times very critical words, the main intention of this article, from the physical planner's standpoint, was to give a positive

outlook of the current planning system changes in Serbia.

As far as the planning system is concerned, the socio-economic planning, which used to be the dominant planning mode, has collapsed. As regards the spatial/regional and urban planning, it is expected that the legal shortcomings and planning system deficiencies will be removed. In this respect, it is believed that the landscape concept and treatment will get a real chance of integrating into the spatial planning, sectoral planning and environmental planning processes and procedures.

The assumption is that the shift from solely economic and physical planning relations to the introduction of environmental impact assessments, feasibility studies, GIS, social cost and benefits analysis, will initiate qualitative changes of the existing planning system, which might work to the benefit of the landscape protection and management.

In addition to this, there is also a strong necessity for landscape architects to establish interest coalitions with physical planners and environmental lobbies at the start, so that concept lobbying can be promoted, agreed upon and efficiently implemented.

REFERENCES

1. Bogdanovic B., 1973. Urbanisation and endangered cultural and landscape values in Serbia. In: *Man and Environment in Serbia* (Serbian edition) Belgrade: Serbian Academy of Science and Art
2. Cvejic J., 1996. Landscape planning. In: *Landscape planning and management* (Serbian edition) Belgrade: Serbian Urban Planners Association, pp. 17-29
3. Cvejic J., Vider V., and Prokic S., 2001. Landscape Planning and Nature Conservation – Practical Experiences. In: *Spatial and environment planning and normative protection* (Serbian edition) Belgrade: Serbian Association of Spatial Planners & Serbian Urban Planners Association, pp. 33-40
4. The EU compendium of spatial planning systems and policies, 1997. Regional development studies. Regional policy and cohesion. Luxemburg: European Commission
5. European spatial development perspectives, 1999. Potsdam: European Commission

-
-
6. European Landscape Convention, 2000. Committee of Ministers of the Council of Europe.
<http://www.nature.coe.int/english/main/landscape/conv.htm>
 7. Jankovic M., 1987. Landscape as ecological and geographical category and its importance for man, nature and society. In: The role of the landscape architecture in Serbian development and arrangement (Serbian edition). Belgrade, pp. 27-32
 8. Jovic D., and Mederevic M., 1996. Foundations and concepts of spatial and landscape planning of forestry areas. In: Landscape planning and management (Serbian edition). Belgrade: Serbian Urban Planners Association, pp. 73-83
 9. Gostovic M., 1989. Rural territory arrangement (Serbian edition). Belgrade: Faculty of Civil Engineering.
 10. Maksin-Micic M., 2000. Space protection and reservation – normative regularity and practice (Serbian edition). Belgrade: Faculty of Geography.
 11. Milinkovic S., 1972. Landscape planning in the regional planning process. In: Landscape planning (Slovenian edition). Ljubljana
 12. Perisic D., and Bojovic B., 1997. Planning, construction and spatial development, in Proceedings of the 20th Anniversary Symposium. (Serbian edition) Belgrade: Department of Urban and Regional Planning, Faculty of Geography, University of Belgrade, pp. 1-9.
 13. Vider V., 1996. Landscape plan in nature heritage protection and development implementation. In: Landscape planning and management (Serbian edition). Belgrade: Serbian Urban Planners Association, pp. 65-72
 14. Spatial Plan of the Republic of Serbia, 1996. (Abridged version). Belgrade: Ministry of Construction of the Republic of Serbia
 15. Spatial Plan of the Pan-European Multimodal Transport Corridor "10." - Section Belgrade-Nis, 2001. (Draft version). Belgrade: Serbian Institute of Architecture and Urban Planning.
 16. The Strategy of Space Arrangement of the Republic of Croatia, 1997. Zagreb: Ministry of Spatial Organization, Construction and Housing.

WEBSITE APPLICATIONS IN URBANISM AND ARCHITECTURE

Danilo S. Furundzic

In the context of rapid technology development, followed by Internet spreading worldwide, the amount of information related to urbanism and architecture has remarkably increased. This paper lists a website selection with the aim to present the state of Internet based information sources on urbanism and architecture. The idea is to help colleagues cope with numerous available on-line contents. The websites are, according to their contents, classified into following categories: associations and institutions, international documents, urban planning and design, information and communication technologies in urbanism, on-line available magazines and books, civic networks, architectural design, famous architects and best examples.

INTRODUCTION

The search of cyberspace, in order to find the best websites dealing with urbanism and architecture, seems to be a never-ending job. The problem is not only finding necessary information, but recognizing the right one as well. This difficulty is even more emphasized in subjects that cannot be easily systematically listed, and where data basis regarding the content, effectiveness of presentation and design, are not strictly specified [5].

The subject of urbanism and architecture is just like that. Therefore, organizing a list of high quality sites found on the web has to be done in accord with the desirable goal. This paper's aim is to make a list that will serve as a starting point for further search, a starting point for professionals and non-professionals who are interested in contemporary applications of Internet based sources on urbanism and architecture. While using these listed sites, colleagues can easily analyse current trends or get some practical training in finding necessary organizations, people and theory examples.

The listed sites demonstrate a practical way for valid expertise and experience in finding information on urbanism and architecture issues. They can also be used as a basic learning tool to help search the web for common technological, social, environmental, economic and specialized problems in the architectural profession.

The listed samples are selected depending on the performed variety of represented data that describe different development and practice subjects about urbanism and architecture. These sites are considered to be the essence of professional links on the Internet library, and thus the best examples of information about:

- Urban planning and design
- Information and communication technologies in urbanism
- Associations and institutions
- International documents
- Urban planning and design
- Information and communication technologies in urbanism
- On-line available magazines and books
- Civic networks
- Architectural design
- Famous architects
- Best examples (that are further forked on urbanism and architecture subjects)

All the presented sites were active in February 2003. They are collected by use of the Internet search engines such as Goggle, Yahoo and Alta Vista. The sites differ in available content, information, and types of interactive communication, structure, presentation mode and referent users. All of the sites presented here aim to promote the Internet as a potential source of information and knowledge, necessary for further efficient planning and design development.

PROBLEMS OF WEBSITE SELECTION

Internet Information Sources

For being professionally competent, it is necessary to be constantly informed and supplied with new knowledge. With the intention of finding new information knowledge about ideas, facts, assumptions and technical solutions, experts explore all the existing sources.

Today, the existing information sources on every topic might be distinguished into:

- Classical sources
- Internet based sources

Classical information sources

Classical information sources are usually considered to be published papers (bibliographies, books and magazines) and scholarly works (educational systems, advocacy planning, public debates). For these sources, synchronized participants' presence and time of activity are the prerequisite. Time is lost in organizing classical learning activities, and these arrangements always cost money. Classical information materials also demand a certain amount of professional vocabulary and therefore cannot be understood easily by non-professionals. Consequently, classical information sources are accessible just to a selected group of experts, for a short period of time. Also, by the time the experts get information, they are out of date. The present definition of a community as a united informa-

tion source, makes the classical methods of acquiring knowledge on urbanism, old fashioned.

Internet based information sources

Today, the fact that every kind of information is on-line helps Internet sources overcome this problem and surpass the classical method of learning. This is more emphasized because Internet sources enable efficient processing by use of visual presentation, which is accepted in urbanism. Furthermore, with the Internet direct contact among participants looking for knowledge is successfully achieved. Thus, it gives new information not existent in classical sources.

Problems of Choice

The influence of the Internet on life and work is considerably complex. The changes are manifested in different activities (education, transactions etc.) enabling cultural diversity on one side and global governing on the other. In all mentioned areas, the Internet serves more as a supplement than a complete substitution of the existing medias. The use of the Internet is first adapted to the present patterns, and then introduced to urge innovations and changes [4].

The basic problem of all researches has always been the access to information. The problem of Internet based search is of a different nature. The access to information is very easily and creatively kept up. Today the challenging task is not the access, but the choice of quickly changing and increasing information multitude. This constant selection is integrated in our search as well. At the beginning of every data search, researchers face two problems:

- How to recognize information?
- What is the necessary relevant knowledge for this recognition?

The solution of these problems is the same as in the classical research methods. The recognition of data must be performed by referent sources selection. This selection is usually done by a choice of authors (persons and institutions), content, proper area of research, or by the researcher's impulse. The novelty of the Internet is that there is the possibility of key words search. This search can easily organize the huge available information basis. The difficulty of the key words search approach is that considerable previous knowledge is needed. Only when data content is acquired, can the sources be

recognized and the information identified. Therefore, the quality of the Internet search depends mainly on the researcher's knowledge and skill.

Definition of the Source Selection

The selection of the websites is difficult in every Internet search. The problem is to recognize valuable resources and then present them. This paper focuses on providing urban planning and architectural design practice site list that can serve as a background for further research. The problem of such a list, as everything concerning the Internet is, that the list must be constantly updated and can never cover all specified sources.

Because huge Internet information on urbanism and architecture contents is available, the selection must be strictly specified. The presented information survey is listed in categories aimed at giving a comprehensive overlook of the subjects found on Internet. So the list can help planners and architects develop search skills and encourage them to try out new technologies. Experts who support and intensify Internet usage may implement the acquired experience afterwards.

1) Associations and Institutions

The associations and institutions sites group presents the most important international institutions. The information about some remarkable spatial development plans, strategies and global programs are contained on these sites.

2) International Documents

This selection presents published documents on urban development. The sites contain only documents that are accepted by the majority of experts and outline basic strategic planning.

3) Urban Planning and Design

This site selection lists data that cover a large field of different topics on urbanism. It includes different sites that can support Internet urbanism search. The sites content varies, but the sites' research area usually concentrates on comprehensive urban planning activities and actions. The listed planning websites are the key category of our register.

4) Information and Communication Technologies in Urbanism

Information and communication technologies sites are separated from strict urbanism sites because the topic of ITC is considered to be especially important for further urban planning systems development. The ITC sites are usually restricted just to the Internet and therefore are a category of their own. The listed sites explain changes directly provoked by ITC in the city, and give information about different Internet based communication techniques. These sites also contain topics on computer application in urban planning and design (Civic Networks, Simulations, Virtual reality, Modelling).

5) On-Line Available Magazines and Books

This group of sites lists selected on-line available published texts (bibliographies, books and magazines) on contemporary urban development and architectural design. They are recognized as the most significant theory examples and can be downloaded from the Internet as a whole.

6) Civic Networks

The best examples of Civic Networks (CN), as a particular application of the Internet in city governing, are represented in this selection. The sites are parts of an organized system that provides information collecting and exchange, which enables cooperation of city residents. They are the only fully adapted Internet planning applications and are especially important examples of Internet based urbanism [2].

7) Architectural Design

This site selection contains information on different architectural issues. The included sites are considered to be the most regarded and innovative Internet architectural sources. They bring architecture history archives, pre-views of contemporary architecture, research reviews in architectural theory and appliance of new technologies. Some of the selected directories provide categorized works of famous architects and links to other resources.

8) Famous Architects

This selected list of sites collects official homepages of well-known, influential and innovative architects. The websites give a preview on the designs, biographies, chrono-

logical dates, texts and essays of famous architects. The main characteristic of the listed websites is the superb web and graphic design that presents the author's work and thought appropriately.

9) Best Examples (on urbanism and architecture)

This site selection is especially important, because it shows various Internet usage experiences on urbanism and architecture from different parts of the world. The listed sites also enable insight into practical use as to different contexts. This practice is even more stressed since contemporary urbanism urges global unification. The listed sites present an array of particular examples that show best implementation results. The intention is also to demonstrate the increasing number of Internet urbanism and architecture applications and their successful practice in various social and economic environments.

SELECTION OF INTERNET BASED INFORMATION SOURCES

The list of the most significant websites is presented according to the previously explained categories. This information can serve as a search database for urban planners and architects. These websites are the essence of urbanism and architect Internet based information and are best examples of site implementation.

The website's address (Url) and the author's name are given before the site's basic description. The [www.](#) prefix in the Url extension was deliberately skipped, so in case of using the list as referent site source please notify the mentioned prefix before Internet search.

Please, review the list and send your comments about the sites you like best.

1) Associations and institutions

Un-Habitat

Url: [unchs.org](#)

Author: United Nations Human Program

This website shows the contribution of the UN in implementing sustainable ideas in urbanization. The site contains different publications, catalogues and declarations. It serves global urban monitoring and is useful for getting practical information, policies and programs concerning world wide human settlements.

The Europe Union - Community Research and Development Information Service

Url: [cordis.lu/en/home.html](#)

This is the main website of the Europe Union that lists all actions of the Union. The site gives access to information databases (documents, declarations, published papers) of all new projects and researches concerned with European development. The site is useful for defining general strategies in urban planning.

Activities Of European Union

Url: [europa.eu.int/pol/ener/index_en.htm](#)

The website lists all programs of the European Union that indicate sustainable development being a key factor of Europe's competitiveness and economic development. This site is useful for planners because it contains the legal framework and set of laws. It also introduces issues of trans-European energy networks that influence Third World countries relations.

2) International documents Agenda 21

Url: [un.org/esa/sustdev/agenda21.htm](#)

Author: United Nations

This website contains the whole Agenda 21 declaration of the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro, 1992. This document is a comprehensive plan of actions on global, national and local levels. The declaration is essential for planning and has already been adopted by more than 178 governments.

The Habitat Agenda

Url: [unchs.org/unchs/english/hagenda/index.htm](#)

Author: United Nations

The website contains the program draft papers from the Istanbul Declaration on Human Settlements Conference. These papers explain commitments and strategies for human settlements development implementation that are interesting for planners. Topics concerning sustainable development, adequate settlement shelter and healthy productive environments are also listed. This website is a good example of a global document offering help to people living in poverty or belonging to vulnerable and disadvantaged groups. The site can be listed in French, Spanish and English.

Guide For Governments And Committees For The Implementation of the Habitat Agenda

Url: [unchs.org/unchs/english/hagenda/natcoms.htm](#)

This committees for the implementation of the Habitat Agenda website can assist partner groups to establish guidelines for national and local monitoring and evaluate the Habitat Agenda implementation.

The site explains how to mobilize and balance resources of support and find financing partners for the realization of national strategies at local plan level. The site also lists different authorities, associations and civil society organizations that offer help in planning and governing strategies to implement the Habitat Agenda.

Johannesburg Summit 2002: Planning and Governing Problem

Url: [johannesburgsummit.org](#)

Author: World Summit of Sustainable Development

The United Nations website presents declarations of the Johannesburg Summit. The main issues are difficult planning challenges - including improving people's life quality and conserving natural resources in a world of growing population and demands. The site can be used to download all the important documents, highlight actions, programs and news of implementing sustainability.

Urban 21

Url: [urban21.de](#)

Author: A. Muller, G. Stellmann

The website contains a final declaration of topics and goals, which were discussed at the Global Conference of the Urban Future. This site can help experts to become fully aware of the present worldwide city problems. It lists problems, new trends, principles, priorities and actions of the future governing that supports the improvement of life quality and environmental conditions in urban areas.

Partnership for Central Europe

Url: [changenet.sk](#)

This website serves Eastern countries in view of international environmental protection and sustainable development partnerships. The site contains useful strategic planning information and regional programs in order to provide fast, effective and non-bureaucratic financial and technical support for local environmental action. It also lists topics such as landscape stewardship, sustainable rural development, energy alternatives, advocacy, greenways for central Europe and cross-border programs.

Urban Planning and DesignCyburbia

Url: [cyburbia.org/index.html](#)

Author: D. Tasman

Cyburbia (formerly called PAIRC - The Planning and Architecture Internet Resource Center) contains comprehensive directories of Internet resources relevant to planning, architecture and urbanism.

This website focuses on cities, their metropolitan areas, with impact on government

policies, private sector actions and national trends in building safe environments. The site also contains related mailing lists, newsgroups and several interactive message areas. It is considered to be an interactive information presentation for professional architects, urban planners, public authorities, journalists and planning companies.

Planetizen

Url: planetizen.com

This website is the best source of urban planning news, job opportunities, commentary and events. The site provides links to professional associations, publications and data on urbanism. It exchanges information for interested public, developing a planning information base.

Yahoo Directory of Urban Studies About Planning

Url: dir.yahoo.com/UrbanPlanningandDesign

A core directory service of the web's search engine that searches the Internet for websites related to urbanism. This is a very important searching site that contains straightforward information about the most popular planning and design sites. This directory might serve as a starting point for attaining non-professional information, and therefore it is often used by laypersons interested in the subject of urban planning and governing.

Rudi- Recourse Urbanism Design Information

Url: rudi.net/news.cfm

This on-line library offers high quality text content, reference sources and directory information about good practice in urban design. The website contains full text documents and valuable expert contacts, related to urban design. This site includes significant and unique items and information that are difficult to locate, and can fill gaps about urban design practice. Although the site provides strictly professional information, it can serve the interested public as well.

Planum

Url: planum.net/webcompass/menu.html

A literature search website that lists new topics in urbanism, planning and governing. The search is based on finding archives, journals, news and associations on the web. The worth of this site is that it contains planning related publications with plans, projects, policies, laws, lists of public bodies and planning firms. The website can be listed in German, and is very useful for gathering literature information.

Planners Network

Url: plannersnetwork.org/index.html

Author: C. Hartman, T. Angotti

The site contains all the latest issues on urban planning. It lists magazines, case studies and working papers. The website illustrates urban management as the component part of the international task of creating large-scale governments that control rapid urban growth. This site is useful for planners because it shows a short course of specialized training programs, consultancy and research on urban management.

Community Planning Website

Url: communityplanning.net/index.htm

Author: H. Jorgon

This is a planning website that guides city governing. The site helps residents get involved with professionals in shaping their local environment. This website provides easily accessible practice information of international examples of governing supervision. The site gives an overview of new community planning methods. It is aimed to ensure that communities become safer, stronger, wealthier and more sustainable.

About Planning

Url: planneronline.homestead.com/NewPlanningMeridian.html

A catalogue website that contains general information about different urbanism sources: publications, essays and news. It lists some 3 million websites, and some especially interesting sites about land use planning, growth management, comprehensive planning, smart growth and new urbanism theory.

New Urbanism -Professional and Research Links

Url: netsense.net/~terry/newurban.htm

Author: J. Terry

This website contains helpful information about classical and on-line publications in urbanism. It has over 150 links to projects, people, articles, book reviews, organizations and other resources concerning planning. The site is interesting because it has a strong design component with direct references to New Urbanism issues such as urban sprawl, sustainability, growth management, downtown revitalization and transportation.

Royal Town Planning Institute

Url: rpi.org.uk Author: Royal Town Planning Institute

The website promotes public participation in planning through environmental education, award schemes, publications and aid schemes. This site lists advices, publications and policies. It is useful for planners and people

engaged in community planning. It brings together professional town planning associations and institutes, and presents the new English planning vision.

Programs In Urban Management

Url: cities.canberra.edu.au/CCourses.htm

Author: Center For Developing Cities

The website contains various materials concerning global contemporary politics with impact on the city. This site is especially important for planners because it displays designs with explanations. It can serve as a short course and special training program on urban management as part of the major international task of urban growth in the developing World.

3) Information and Communication Technologies in Urbanism

Casa

Url: casa.ucl.ac.uk/env.htm

Author: University College London, S. Doyle

Center for Advanced Spatial Analysis website (CASA) is a search centre for advanced spatial analysis. In other words it is a review of 3D city modelling.

The website contains information about developing computer technologies and disciplines, which deal with space design. It is about the integration of two apparently diverse fields, architectural history and computing. The site has different interesting directories such as Town Centres, Geographic Information Systems, Based Modelling, Spatial Decision and Planning Support Systems and Internet research on the planning system.

Online Planning

Url: casa.ucl.ac.uk/online.htm

A website covering different issues relevant for developing a planning system on the Internet, and this system's impact on urbanism.

This website aspires to cover various examples of Internet based technology, which have a wide range of implications on urban planning and design. The site is a best place to get information about all kinds of traditional and new web formats used in urban design and modelling. Because of the detailed analyses of different data exchange techniques, this site is useful for architects and planners in terms of practical application.

The World Foundation for Smart Communities

Url: smartcommunities.org

The site lists contemporary ideas and theory problems concerning the Internet pheno-

menon, developed by present network communities. The illustrated reports consider whether smart networked communities are the future of the cities.

Collaborative Spatial Decision-Making

Url: faculty.washington.edu/nyerges/csdm.h

Author: T. Nyerges

An on-line paper that describes future Internet based decision-making development in urbanism. It contains information related to the emerging research field the so called Collaborative Spatial Decision-making computer technologies, which involves group based problem structuring, and applications of digital spatial information facilitating urban planning.

This website is a central information point, linked to different cities. It contains topical areas like geographic information systems (GIS), spatial decision support systems (SDSS) and spatial decision support systems for groups (SDSS-G), multi criteria decision modelling (MCDM), group support systems (GSS), decision support systems (DSS), computer-supported cooperative work (CSCW) and human-computer interaction (HCI).

Barry Wellman Homepage

Url: chass.utoronto.ca/%7EWellman/main.html

Author: B. Wellman

The website studies Information Communication Technologies and their impact on community, communication, computer technology and society. It is a survey of researches and lists many tutorials about these topics. The site is very useful for societal strategies planning in cities and regions.

UrbanSim

Url: urbansim.org

Author: Metropolitan Planning Organizations

The website presents information about the simulation game called Sim-city. Urban Sim is a software-based simulation model for integrated planning and analysis and is very useful for planners. Experts can "test out" urban development strategies, and learn more about corporation and interaction of market land use, transportation, development and public policy.

This website contains information, description, papers, and what is most important, downloads of different test policy issues. It also contains alternative governmental plans and policies interesting for the planning process.

4) On-Line Available Magazines and Books

Ctheory

Url: ctheory.com Author: M. Kroker

This on-line magazine has a list of articles related to new contemporary theories of

understanding the web. Among these articles, some new issues related to Internet urbanism applications and methods of global implementations are included. These fragments of new topics can be very interesting for on-line urban planning theory.

Urbanistica

Url: planum.net/journals/ns-uri.html

An online magazine that promotes, regulates and diffuses the planning studies in Italy. This magazine assembles significant autonomous texts suggesting guidelines to overcome the planning crisis. It shows the differences of particular solutions and illustrates how to deal with urban problems in the future. This magazine is also valuable because it reflects the metropolitan and regional planning roots and demonstrates a good theory and practice.

A City is Not a Tree

Url: rudi.net/bookshelf/classics/city/

alexander/alexander1.shtml

AUTHOR: C. ALEXANDER

A book website concerning new planning theories and future planning problems. This book presents newly developed conflicts that emerged after introducing global interactive planning concepts. The site is important for the public especially interested in complex theoretical questions and continuous exchange of information between different professions.

City of Bits

Url: mitpress2.mit.edu/e-books/City_of_Bits/index.html

Author: W. Mitchell

The website contains an international anthology of urban planning. This key book explains early ideas about possible influence of the computer information revolution on planning structures. The book was the first paper to introduce basic concepts of communication technologies, from which many are still used today. The significance of this site is that it describes the development of interactive urbanism, which is today accomplished by the Internet.

Decision Support and Urban Planning

Url: geog.ucl.ac.uk/~pdensham/SDSS/s_t_paper.html

Author: M. Batty, P. Densham

This on-line paper describes new developments of on-line decentralized decision-making software, showing all what is now possible in planning. The issue of importance is the effective use of the emerging graphic, processing and network communicational software in practical urbanism.

This site can be used for learning spatial decision support systems (SDSS), planning support systems (PSS) and geographic information systems (GIS) program applications.

The Environmental Documents

Url: changenet.sk/epce/docs.htm

The site contains download texts from books: "A Decade of Nurturing the Grassroots" and "Caring for the Land". These books research history and changes concerning the new idea of the Environmental Partnership in Eastern Europe. The text lists problems of rural development, community revitalization and development of a vital civil society in post Communists societies. This site is useful for planners because it provides an informal look at some impressive issues of the East European region.

An International Anthology of Articles, Conference Papers and Reports

Url: library.cornell.edu/Reps/DOCS/homepage.htm

Author: J. Reps

An outstanding online bibliography of materials documenting the history and development of urban planning. The collected work in this site is equivalent to a 600-page book, containing journals, conference reports, books, official documents and other written sources used in urban planning. This site was originally established to serve educational purposes, but now it serves academics and professionals to read historic planning papers.

Urban Design Compendium

Url: rudi.net/whatson/desguides/udc/udcomp.shtml#

Author: English Partnerships, L. Davies

A website that contains a guide book on urban design, that serves the idea of stimulating and making neighbourhoods active places in which residents feel comfortable and safe. This site aims to provide accessible advice to developers, funding agencies and partners on the achievement and assessment of the quality of urban design for the development and regeneration of urban areas. The website is written to provide a source of best practice to all those involved in the regeneration and development industries.

A-matter

Url: a-matter.com/eng/index.asp

Author: a-matter

This website is an architecture on-line magazine that provides analyses of projects, articles and essays on architecture theory with well selected examples. A-matter is largely focused on appliance of new technologies in architecture and presentation of new forms. This site also contains resources and news about education. It covers all major events about architecture in Europe. The website is a fine example not only of collectible data, but a linked base source where certain architectural issues are presented in a practical standard way.

Domus

Url: edidomus.it/domus/avvio.cfm

This is a web site of the famous Italian magazine Domus that has texts about new events and notable people in the world of architecture. The site can be viewed in Italian and English, and features exclusive interviews with architects, projects and past issues of the magazine. Worthy of note is every issue's cover page that is being designed by prestigious architects and designers.

5) Civic networks

Civic Networks

Author: Epitelo Network

Url: eurosur.org/epitelo/urbanas.htm

The website introduces basic concepts of Urban Civic Networks. It lists best examples of implementations and texts that explain how to create Civic Networks. This site has interactive mailing applications and is available in Italian, English and Spanish.

Amsterdam

Url: amsterdam.nl

Author: City Government

Amsterdam city government was the first to recognize the possibility of Internet decision-making, so this site is a well-checked implementation of a Civic Network site. The website is a very useful not only for residents' use, but for other interested parties. The site presents Amsterdam from various aspects, and allows residents participation in governing.

Singapore

Url: ura.gov.sg

Author: Urban Development Authority of Singapore

This website contains information about developing plans and programs of Singapore. It is a useful example of how a city planning program can have all activities converted into computer media on the Civic Network. This site gives insight into the citizens information mechanisms and transparency of Internet public planning.

Bologna

Url: ccomune.bologna.it

Author: La Rete Cívica di Bologna

This website is the best example of a Civic Network that informs residents about different urban development problems in their city. Not only that this site gives access to information, it also offers possibilities of citizens cooperation and government. Additionally, the website lists various illustrative subjects for planners.

6) Architectural Design

Archinect

Url: archinect.com

This website is a well-known resource on

matters of architecture, design, commentary and events. The site provides categorized links to other web resources. It has a large number of articles that are linked to other Internet sources that cover the same subject of architectural design.

Great Buildings Online

Url: uildings.com/gbc.html

Author: Artifice, Inc

This web site is one of the largest online sources that offer information about well-known architects, with a large library of their work, timescales, photographs of buildings and well-reproduced 3D model of all-important houses in the history of architecture. The buildings and periods are historically classified. The website is also a great starting place for detailed research on different works of architecture. It contains all important links to architectural homepages.

ArchInform

Url: archinform.ne

This website is an architecture directory that presents over 10 000 projects. The site contains a database organized by searchable locations of buildings and authors. This Site also reviews published sources and subjects related to architecture, and offers advanced search and keyword references. It is a very useful means for a fast gathering of quality information.

Library of Royal Institute of British Architects

Url: riba-library.com

This site library is the largest and most comprehensive resource in the United Kingdom for research and information on all aspects of architecture. The website contains latest news from the world, collections of on-line books, publications, drawings, photographs, manuscripts and reports from exhibitions. It lists a video selection offering on-line screening of videos about all fields of architecture.

Architectural Record

Url: archrecord.construction.com/Default.asp

Author: The McGraw-Hill Companies, Inc.

This site is often updated and is organized like a magazine that offers interesting articles and sections on different aspects of architecture, design and interior design, which are supported with fine examples and analyses. This site also presents news and interviews of famous living architects. The archive and architects profiles, listings of architecture firms, forums and opinions make this website not only an information gathering source, but a useful point on the Internet for contacting and exchanging different views.

Archinet

Url: archinet.co.uk

The website provides architectural news, building reviews and links to famous architects and designers. This site is a fairly practical source with up to date news and exclusive articles, with competitions and listing of job offers, community members and forums. Because of the interactive application it is specially recommended to students of architecture.

7) Famous Architects

Foundation Le Corbusier

Url: fondationlecorbusier.asso.fr/

The homepage of Foundation Le Corbusier lists all relevant information and material about Le Corbusier, his work, projects, ideas in urbanism, foundation itself, etc. The site has a large collection of blueprints, plans' elevations, urban plans, furniture and paintings designed by this famous and influential architect. A detailed biography is provided with texts and articles. The foundation's programs are presented, offering various consultations.

Norman Foster

Url: fosterandpartners.com

This is a homepage of one of the most influential architects of our days, Norman Foster, who along with his colleagues from his design studio is presenting his work in the field of architecture and interior design. Previews of some designed commodities can be reviewed, services that this studio offers, and online consultancy. The website has classic design and contains plans, elevations and photographs of great quality.

Santiago Calatrava

Url: calatrava.com/indexflash.ht

This site presents the work of the famous Spanish architect and constructor Santiago Calatrava. The site is superbly designed, with perfect presentations of buildings, bridges, railway stations, etc. It can be a great experience for people wanting to discover architectural and structural design as well.

Frank O'Gehry

Url: frank-gehry.com

On this website one can pay a visit to Gehry's buildings from 1960s until today. The designs are interestingly listed via the Frank Gehry's World Map, sorting out the buildings into different countries, including a more detailed map for the US States, especially focusing on the Los Angeles area and California. The site also contains interesting information about the personal life of the architect.

Eric Owen Moss

Url: ericowenmoss.co

A homepage of the well-known architect, supporter of the deconstructive concept presents the timeline of his projects along with photographs both from the realization period and the aftermath. The publication regarding his work can be found on this site. It is the best place to have an insight on the problems of using deconstructive design.

Degree Zero

Url: degzero.com/dz20/IE_NS6.html

The website of the modern trend architecture group with new approaches to design, but also innovative solutions in the theory field. Offered works are very successfully presented with computer models, various projections and photographs. This site with its out of the ordinary ideas of an inspiring architecture is worthwhile visiting.

Electronic Shadow

Url: electronicshadow.com

This is a website of the French architecture and design group inclined to the new media and technology appliance in architecture. The site itself is a great design work of this team. Projects presented on this site are all released, however not all as buildings, but also as parts of new interior, information networks, and installation sculptures but always in correlation to architectural concepts. In some parts, the site is dedicated to the research of virtual reality and holograms. This site gives an insight into future architecture.

8) Best Examples on urbanism

Best Practices

Url: bestpractices.org

It is a magnificent database of different solutions for social, economic and environmental problems of the urbanizing world. Analysing current trends, this website lists best-implemented examples of contemporary theories. It demonstrates the practical ways in which public, private and civil society sectors are working together to improve governance that supports economic development, and safeguards the environment. This website is the best place for finding information on current human settlement issues and other case study facts.

Public Space

Url: cccb.org/espurb/index.htm

Author: Centre de Cultura de Barcelona

The website tries to provide the information resource and debate platform for those interested in regeneration of urban public spa-

ces in European cities. Thus, this site serves as an Internet archive on urban design. Nations, cities and public spaces types have been organized within the database. Every file has maps, descriptions and pictures of the designs. This site is interactive, so urban experts can chat and debate about city's public spaces. It can be listed in Spanish as well.

Barcelona Economic and Social Strategic Plan

Url: bcn2000.es

Author: Barcelona planning institute

The site contains the strategic metropolitan plan of Barcelona, with all the authors, ideas and work. This site serves to promote Barcelona as a dynamic European metropolis, and is an example for other Spanish and Mediterranean cities. What is more important, are the sites' downloads of all the attended papers such as agendas, bulletins, inscriptions, surveys of governing bodies, documents and plans.

Your Town Planning and Design Studies Handbook

Url: bsu.edu/web/CBP/resources.htm

Author: J. Segedy

The website is a guide for the community based planning approach that can solve problems, and help plan future. It illustrates techniques such as land analysis, issue identification, needs assessment, strategic planning, consensus building and communication network enhancement. The site explains how to use the theory-planning supplements on different themes within an educational University setting.

Cheshire County Council

Url: cheshire.gov.uk/cheshpln/la21/home.htm

Author: City Council

This website represents Cheshire's introduction of Agenda 21 and the making of the Community Strategy programs as related projects. The site has chapters that serve central government, local government, business and non-government groups. It is a useful example of establishing local strategic partnership in the community, with further links to different organizations.

City Council of Winchester

Url: winchester.gov.uk/la21/sustainablewinch.htm

Author: City Council

The website is the best example of how to implement Agenda 21 at the local level. Since this site aims to educate citizens of Winchester, it can be used as a guide that explains sustainability to non-professionals. For planners it is a tested implementation example of the new theory of sustainable city planning. The site is also an interactive information network with services, plans, documents, governing information and city guides.

Agenda 21 for the Baltic Sea Region

Url: ee/baltic21

Author: Governmental in the Baltic Sea Region

The website illustrates sustainable development in the Baltic Sea Region, encompassing economic, social and environmental programs. This site provides general and detailed introductory information of cooperation in this field. It is important for planners because the Baltic Sea Region is the first region in the world to adopt common goals for sustainable development, and so is the best website example in practice. The site covers different goals and an action program for sustainable development in various sector fields.

Professional and Research Links

Url: umanitoba.ca/faculties/architecture/cp/Pages/student&carres.html

Author: University of Minnesota

This website's intention is encouraging students as to professional experience and extending the practice involvement during planning education. It provides students with links for planning studies and further urbanism careers. It is the best place for finding contacts to professional planning organizations, governments, development agencies, on line libraries and indexes. This website also lists directed studies, internships, mentors and interaction with professionals.

9) Best Examples on architecture

Achitecturemag

Url: architecturemag.com/architecture/index.jsp

This website is an online source that provides information about new designs and trends in architecture, containing business updates from this field. The site also covers all major architectural conferences and events, and gives an overview of new products. It is very useful for professionals in view of getting all the latest information related to architecture in a business manner.

Vitruvio

Url: vitruvio.ch/

Vitruvio is web resource guide to architecture, which includes links to major sites in history, theory, design and famous architects. The site also presents cad, dwf and vrml models of many different projects. The links section is not only classified by web sites, but according to the subject matter of articles, so research is more efficient. This website is one of the most useful architecture Internet places with contents that bring much more than a quality design help tool.

Daniel Libeskind

Url: daniel-libeskind.com

This site contains projects and photographs from the architect that is best known for his project of the Jewish Museum in Berlin. Moreover, the site itself is considered to be a great theory instruction because the website contains extensive stories on buildings designed by this famous architect. The texts are leading in theory of architecture deconstruction in and interior design.

Amphibian Arc

Url: amphibianarc.com

This is a simple but effective site in Flash presenting this architecture group in the best light. The projects are lined in ribbon design and feature the fields of interior design, residential housing, administrative building, as well as some unreleased projects of skyscrapers. The group is dedicated to non-orthogonal fluid architecture for the new millennium. It is the best example of contemporary futuristic architectural design.

Morphosys

Url: morphosis.net/morph.html

Author: Garden Digital

This great website has interesting design downloads and a free site structure with a creative approach to presenting data. Information presenting Morposys' work is of great quality and useful for professionals. The website features a few interesting movies from construction places, that show the process of building. This group of architects from California is often presented in many contemporary and respected architecture magazines and publications so the site has many direct links. Therefore, it is considered to be very useful in practice.

CONCLUSION

This paper raises a series of questions about the fundamental significance of on-line Internet information, not only in terms of a professional urbanism and architecture information base, but also as an essential application tool in the contemporary practice.

Essentially, the Internet enables new communication techniques and new aspects of increasing knowledge about different professional issues. It gives an insight to different ways of understanding various subjects, and in that way, contributes to finding more accurate solutions. If applied to urban planning and architectural design, the Internet can improve professional practice. But because the large quantity of information, which is provided by the Internet, certain information overloads occur [6].

More direct and accurate listing tools that point directly to the wanted information can surpass this. The presented list is hopefully such a support. However, the experience indicates that the use of Internet is not accepted broadly and with too much joy. There are still large parts of population who are nervous about using the Internet or have no access to it. The Internet participation in urbanism and architecture will be considerably affirmed by the next generation of professionals.

The experience of searching the Internet for different websites on urbanism and architecture shows that there are communication improvements considering the number of computer returned information. But the evaluation and experience of the present application show that Internet based site information sources will not replace classical information forms of sources in future. They should be primarily improved and not strictly replaced by Internet on-site applications. Generally, the Internet usage will be globally recognized, and extended as a media tool application.

To conclude with, the presented report of different websites facilitates gaining new experience, to be easily implemented in practice. Furthermore, the presented website selection offers great opportunities for urban planning and architectural design professionals to update their knowledge. The listed information within the site sources represents not only a data base but also a diversity of new information forms. Different progress levels and Internet material values are easily recognized, and can therefore, urge Web

design experts to define necessary Internet development strategies.

However, the Internet information application in urbanism and architecture must be supplemented by an extra professional component in future. Doing so, the greater effectiveness of future applications will encourage the next generation of experts to develop new usages of the Internet as a managing tool, which will take an active part in their profession. Some of the presented facts and ideas may help urban planners and architects to recognize the quality and importance of websites as Internet based information sources. Regarding such a role of the Internet, this paper may stimulate further research in that direction.

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REFERENCES

1. B. Wellman, 'Computer Networks As Social Networks,' Science vol 293, sciencemag.org, 2001
2. D. Furundzic, D. Milovanovic 'A Survey of Internet Based Information Sources on Urbanism,' conference SSGRR2003W publication, La'Aquila, Italy, 2003.
3. D. Furundzic, 'Internet application in planning,' Website published paper, 2001.
4. V. Moere, 'Virtual library' in 'Bits and Spaces: Architecture and Computing for Physical, Virtual, Hybrid Realms,' Engeli M.
5. R. Rogers 'Architecture: A modern View,' Theams and Hudson, London, 1990.
6. S. Graham, S. Marvin, 'Splintering Urbanism: Networked Infrastructures, Technological Motilities, and the Urban Condition,' Routledge, 2001.

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