Introduction

The aim of this paper is to discuss recommendations worked out by the participants of the European Programme entitled: Cost CAction 11 Zielona infrastruktura i planowanie miast Green structure and Urban Planning. This discussion is going to be presented from the point of view of contemporary problems of green structure development in Polish cities. The term green structure is used both in the name of the Programme and in this article in order to emphasize the specific approach to the green problems of cities. Definition and reasons for its use will be introduced later in the paper.

The transformation of the Polish political and economic situation that took place at the beginning of the 1990s has changed rules of the game in green open spaces planning, development and management. The old problems has been combined with new ones caused by market economy.

Worldwide evolution of the approach to urban planning, attempts to implement sustainable development principles and compact city ideology among them also influence the way of thinking about green structure development.

So, it seems worth describing and discussing, if and on what conditions, Polish urban planners, landscape architects and city authorities could or should take into consideration the recommendations prepared on a ground of experience and opinions of 40 experts from 15 countries gathered on the basis of 8 field visits in different cities.

Methods and Materials

The recommendations mentioned above form a point of departure for this paper. They had been discussed at the Programme closing meeting, but finally worked out by Sybrand Tjallingii [2005]. Thus, his paper and the way he structuralized the outcomes of the Programme create general background for discussion of Polish problems.

Polish problems are identified on the basis of publications printed after 1990, and particularly after 2000 – the beginning of the Cost C11 Action. One can assume that they describe problems and solutions characteristic for market economy and self-government conditions. That enables to compare our Polish situation with other European countries. Also the results of research completed within the framework of Cost C11 by Szulczewska, Kaliszuk [2003, 2005a] are going to be taken into consideration.
Term Definition: Why Green Structure Instead of Green Open Spaces?

The term *green structure* is not very popular among urban planners, landscape architects and other specialists and is not widely used in professional as well as scientific publications. In fact, until the Cost C11 it had been launched almost at all. Bernard Duhem – the chairman of Cost C11 in his *Introduction* to the Final Report admits that it might be rather confusing and really difficult to translate it properly into other languages [Duhem, 2005].

Looking into term interpretation and the way it has been used by the Cost C11 participants Kaliszuk, Szulczewska [2005] identify that green structure was considered as idea (general concept), object (composition of elements), multifunctional entity, quality (necessary to improve quality of urban space), action (part of sustainable development strategy).

But still it does not help to define green structure precisely. So, why did the Cost C11 participants decide to deal with such a blurred term, instead of focusing on the old, well known green open spaces? The reason for that is very much connected with the main premise of the Programme: a shared understanding that green structure is something more than green open spaces, because of its role and place in the city. The term has been used in order to emphasize the complexity of this phenomenon, which could be described as physical structure forming the city space that at the same time plays a few different roles: in biodiversity protection, water management, local climate conditions improvement on one side and as social infrastructure for leisure, relaxation, human interactions on the other.

Recommendations – the Concept and the Scope

Tjallingi [2005] structuralized the recommendations as three perspectives important for relations between a city and a green structure:
1. sprawl versus *compact city* – the challenge and the choice for European cities;
2. defence or integration – the more efficient strategy for green structure protection;
3. bottom up or top-down planning approach for green structure.

Then, he summed up his considerations in specific recommendations for designers, managers and maintenance, planners and researchers.

The scope of recommendations clearly points out the role and place of green structure as the way of thinking about present and future development of cities. Crucial concern is up to convince all interested parties that green structure should be considered as a sort of infrastructure that shapes or re-shapes the city space. As one can easily notices the recommendations refer to very general questions and point out general solutions. In fact, field visits, which were the integral part of Cost C11 agenda, convinced the participants that working on more detailed principles is useless as each city is so much specific with its “own” problems. However, all towns have do cope with general dilemmas mentioned by Tjallingi (2005) as three perspectives. And, in solving these dilemmas complexity of the phenomenon named *green structure* have to be noticed and observed.

In my opinion, the principle to see the role of green structure with its complexity and individual performance as the driving force for development or re-development of the city could be considered as the most important recommendation for European cities.

In order to obtain proper quality of green structure and to observe its complexity while the city is developed or re-developed a co-operation between different parties is required. As the most important parties in these process Tjallingi [2005] points out: designers, managers, planners and researchers. So, the specific recommendations are aimed at them.
Sprawl versus *compact city*

Tjallingii [2005] reminds, that the concept of *compact city* was introduced to the practice in the early 1990s, through many papers and policy documents. Its leading idea was to increase density of existing cities or develop them in a compact way in order to prevent an urban sprawl. Almost at once the common opinion appeared that this *compactness* might be dangerous for citizens quality of life. The debate on priorities started and as result to decide: to prevent sprawl (and protect natural resources) or to create good environmental quality. Nevertheless, Tjallingii [2005] points out that these two priorities shouldn't be seen as contradictory. There is one, very important argument: if we wanted to keep people inside our cities we should have created good quality of the environment. And the very green areas are an important part of the required “quality”.

To outline the discussion on the first perspective briefly, the following combination is recommended: compact building with green quality inside cities and a green structure policy at regional level. At urban level the green structure planning is an instrument that seems to be made as an attractive alternative to both high density and unlimited sprawl. That combination allows to create urban landscapes, *with a valuable network of green spaces that contributes to the identity of local landscape and creates welcomed visual contrast between built-up and green areas* [Tjallingii 2005].

**Defence or integration**

Tjallingii [2005] rises a question, what is more efficient: to protect green areas by defending them against the city or by giving them role in a new multifunctional urban landscape. He refers to the *mythical polarity* between man and the nature, cultural and wild trying to explain “the defence” strategies. However, after analyzing of different cities examples of he comes up with conclusion that defending green in one place may be well combined with integrating green and urban development in another. The green structure planning may be effective tool for a balanced approach.

**Bottom-up or top-down**

Tjallingii [2005] discusses the pros and cons of these two approaches. In his opinion, survival of green structure inside the city requires proper solutions on the regional level, especially as in the case when conflicts between the green structure and the road or rail infrastructure and the water network have to be dealt with. So, in such cases the top-down approach is welcomed. Nevertheless, the process of dealing with mentioned conflicts on higher level often leads to the formal compromises that make nobody happy as Tjallingii [2005] comments.

The bottom-up approach is inestimable from the point of view of turning green spaces into green places. Public support and commitment help to plan and maintain properly such places, not only for residents and users but also for the proper whole network functioning. Tjallingii [2005] stresses that *personal attachment creates sense of place that makes people feel at home*. But this approach also leads to unwelcome obstacles, as NIMBY behavior and sometimes unrealistic dreams.

Summing up, as in other dilemmas also in this case the solutions is not “or... or” but “and... and”.

**Recommendations**

In order to implement the outcomes of dilemmas discussion as well as experience derived from case studies into planning and management practice, Tjallingii [2005] presents very specific recommendations. The instructions focus on the following aspects: quality, context, multi-functionality and co-operation, and are addressed to the most interested and involved in the green structure idea implementation parties. Below (tab.1) the synthesis of recommendations is presented.
Agenda for Polish Cities – Possibilities of the Cost 11 Outcomes Implementation

Sprawl versus compact city

Initially, in 1990s, when the concept of compact city had been introduced in Poland, its understanding among planners and authorities was limited. They – at least some of them – tended to employ the concept in order to justify a building up of almost every undeveloped spot in Polish cities, especially in central districts. Green structure and its protection played important role in the discussions against such narrow interpretation of the compact city concept [Szulczewska 2002].

In fact, in last years the attention has been shifted to the urban sprawl phenomenon as the most serious and dangerous problem for Polish townscape [“Problemy subanizacji...”, 2005; “Żywiółowe rozprzestrzenianie się miast”, 2006]. Thus, physical, social, legal and economic reasons for and results of urban sprawl are described and analysed. One can also trace a “green” path in this debate. Presently, the green belt idea as a tool for defence against urban sprawl experiences sort of revival. At the moment, the theoretical approach and possibilities of its implementation are investigated [Borchulski, 2006; Kozłowski, 2006;]

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Raszka, 2006; Szulczewska, Cieszewska, 2006]. However, Przewoźniak [2005] in his paper on general problem of ecological results of urban sprawl, comes up with a rather bitter opinion about chances of effective counteracting this unwelcome phenomenon. His hopes refer rather to the possibilities of future revitalization of suburban structures, but he stresses that ecological results of urban sprawl must be considered as irreversible.

Nowadays, problem of Polish cities’ core areas revitalization is on the top of research and political agenda. Of course, the reason for such attention derives from a real need, as well as from chances of acquiring the EU funds for the process. In this context, last year the idea of natural revitalization appeared on the research agenda [Chmielewski, 2005]. Aims, scopes, instruments and obstacles were discussed [Teka... 2005]. The green structure concept and its meaning for natural revitalization became one of the leading themes.

However, still a few studies have been done on an interdisciplinary urban – natural problems of revitalization that Przewoźniak [2005] categorizes in the following aspects: spatial, temporal, legal, dealing with implementation instruments and unavoidable conflicts.

Summing up: Polish professionals – urban planners, geographers, landscape architects even city authorities share the general view on the role of green structure within the city development presented by European experts. Nonetheless, problems appear at the level of detailed plans and projects.

Also it seems that debate – “sprawl versus compact city” transforms in Poland into debate – “revitalization versus sub-urbanization”. At the moment this two themes – very important – for Polish citizens, landscape and economy are dealt with rather independently. But it is obvious that sub-urbanization cannot be banned, while is impossible to offer attractive living conditions inside the city.

Defence or integration

In Polish urban planning practice this two strategies have been tested while working out different planning documents. Sort of green structure concepts are ready to be used both in the discussion and in spatial plans. Two of them were published: 1) urban natural system – system przyrodniczy miasta [Szulczewska, Kaftan red. 1996, 2] ecological fabric /framework – osnowa ekologiczna [Przewoźniak 2002]. Others have appeared in planning practice. The terms used in order to name these concepts were different: ecological / natural / biological systems or frameworks, but their aims and assumptions were very similar [see: Szulczewska, Kaliszuk 2005b]. The main focus was on environmental / ecological issues. Other issues such as social or aesthetical were left behind on the basis of assumption that they require different criteria and should be considered as the next “layers” of green structure, while the city development or re-development is planned. Thus, the concept offers sort of a “place” for other functions. Regardless, in contemporary plans, it is not very easy to find others apart from ecological “layer” of green structure. Especially, the very important problem of recreational performance of green structure is not being solved properly. A little studies have been done on that subject in last years [Maksymiuk, 2005].

The integration strategy could be traced in solutions adopted in design projects for particular types of green areas, public spaces or river valleys. But, it is rarely found in plans for city centres, housing estates or city quarters and there are nearly any so called „best practice” examples published.

Tjallingii’s [2005] recommendation: defend green in one place, integrate green and urban development in another seems to be very attractive and promising from the city re-development point of view. However, in Polish cities such solution, ideologically fully acceptable, seems to be practically dangerous for green areas survival. In many cases, rigorously, for the best legally binding, borders of green structure elements seem to be the most efficient protection instrument, if not the quality of green at least its quantity. Otherwise, the discussion about integrative ap-
proach may lead to decisions, which are not in favor of green areas especially when developer’s or owner’s interests have to be considered.

Since the Act on Environmental Protection Law [2001] has been passed, Polish planners become equipped with sort of integrative approach instrument for green structure planning: they are entitled to establish proportion between built-up and biologically active areas (green areas) necessary for preservation of a balance with nature on the spot. But this proportion is being established in fact in arbitrary way as it is impossible to point out the exact proportion that guarantees the balance is safeguarded.

Summing up: at the moment possibilities of solving the dilemma in the way Tjallingii [2005] recommends is very limited. We need more “best practice” examples of co-operation of stakeholders, in order to convince ourselves that integration doesn’t necessarily mean loss of greenery in the city, and also that the loss in quantity could be sometimes effectively compensated by the quality upgrading.

Bottom-up or top-down

That dilemma has been presented in the discussion among Polish urban planners and landscape architects since many years, particularly after changes in the planning system organization, introduced by the Act on Planning and Physical Development [1994] latter replaced by an amended version of 2003 Act. The debate is wider, because it refers not only to the problem of green structure planning but spatial planning at all.

However, in case of green structure, as well as technical infrastructure planning, it is obvious that top-down approach should be recommended as a starting point. Otherwise, it is very likely that because of some “bottom” decisions or solutions, the system won’t be able to perform its functions. Of course, it is widely understandable when the road network or sewage system is to be considered. But, in case of green structure, it might be noticed that not only laymen but also some urban planners announce doubts if such approach is really crucial. They have just stated that so called “patch” structure is the only one possible in the city. Fortunately, the concepts of urban natural system / ecological framework mentioned above launch the top-down approach.

On the other hand, Tjallingii’s [2005] point that bottom-up approach is irreplaceable for changing spaces into places. At the moment this problem is in Poland discussed in wider context of public spaces that during the years of transformation sometimes have lost their role and meaning as public places. There are attempts of upgrading public spaces made by authorities of many cities (e.g. contests for local authorities held in certain voivodships for the best public space). But green structure elements (for example: squares, parks, boulevards) are rather seldom embedded with this sort of policy. Also public participation (residents, users) recommended as crucial part of changing spaces into places is not the regular practice in Poland. Again little research is being done on the problem, and too few “best practice” examples are known. For such practice examples one can consider the project “Zielone Wyspy Wroclawia” [Drapella-Hermansdorfer (red.) 2003].

Summing up: once again this time concerning discussed dilemma, the solutions “and... and” seem to be the right ones. However the key point is to start from the top and consequently complete the general design of green structure by the detailed projects. The consequence and cooperation necessary for the success of that strategy that are very seldom in planning and management practice in Poland as result such situation causes obstacles in the implementation of this correct and recommended approach.

Recommendations

Recommendations prepared by Tjallingii [2005] and summary in the table 1. do not cover all the dilemmas, questions and outcomes from case studies. These were the most important Cost C 11 results. But all the participants have been very much aware since the beginning of the Program that each city is
unique and has its own package of problems, dilemmas, conditions that influence the green structure. Also the planning system, administrative structure, history, economy and many others factors characteristic for each participating country should be taken into account while the implementation attempted.

First of all, it should be mentioned that Polish economic, political and social problems of transformation result among others in postponing green structure issues on development or re-development agenda of Polish cities. That generally well known and in some way understandable fact illustrates why gaps in green structure policy are wider than in other old EU countries.

So, taking into account the green structure situation in Polish cities, the following recommendations presented in table 1 seem worth to be considered and commented.

Quality: In fact, the knowledge on green spaces quality in Polish cities is very limited. There is no forum, where design projects are discussed and evaluated. Of course, each year landscape architects’ conference – so called forum – takes place in Poland, but it is not a place for critics, but rather just a nice meeting for exchanging ideas. So, before we start implementing the Cost C 11 recommendations we should learn more about the approach to design studies and projects for particular green structure elements. The problem is that in Polish cities new parks or other elements of green structure are very rarely planned and even more rarely constructed. Maybe the evaluation of projects worked out by landscape architect students at different schools of landscape architecture could give us at least the partial view on that matter.

Context: As it was stated above sort of green structure concepts are present in Polish planning practice. In the assumptions of such concepts one can find the principle of linking the regional networks with the local ones. That principle is implemented while the planning process is taking place. So regional context of green structure is always taken into account while the local plan (study of spatial development preconditions and direction) is being made. However, it is much harder to preserve such connection when interests of two or more municipalities are to be considered.

Also the participation of the stakeholders such as leaders of residents, non-governmental organizations, politicians in green structure development strategy takes place only when conflicts appear and have to be solved. Mostly it happens in the last phase of the planning process and sometimes just when construction is about to start. Practice of involving the stakeholders in initial stage of the strategy or project planning process is very rare – such approach can be found rather when the research project is carried out [see: Gawryszewska 2005a, 2005b; Drapella-Hermansdorfer (red.) 2003].

Multi-functionality: Tjallingii [2005] represents very strong conviction in favor of green structure multi-functionality, but at the same time he admonishes that it does not mean that everything can happen anywhere. The problem is how to decide on future destination of a spot in a way: “What is going to happen?” and “What should be forbidden?” Even mer difficult is to give reasoning why. The obvious combination of top-down and bottom-up approach has to be reinforced by experience from practice. Once again the practice has to be evaluated, and then the “best practice” examples have to be promoted. However, in Poland such research is not very likely to be undertaken at the moment, mostly because of its complication and cost on one hand and lack of interest among authorities and politicians fighting e.g. transportation problems in their cities – on the other.

Co-operation: This general recommendation seems to be the most important and crucial for successful implementation of the green structure strategy in cities. Taking this recommendation into consideration the following key words from the table 1. have to be emphasized: learning by doing, win-win situations, red pays for green, assessment of pilot projects.

As one can see the specific recommendations are more management and maintenance oriented. It is
worth to notice that experience and examples of solving these practical problems provide instruments necessary for effective implementation of the whole strategy. At least such conviction is quite strong.

Generally speaking, at the moment all parties interested in the green structure development in Polish cities are mostly in the phase of indicating problems and conflicts. Of course some very general guidelines how to solve them are also published, but there is a lack of desirable pilot projects. And it should be stressed that a really useful pilot project has to have its aims and assumptions that are derived from the general strategy of green structure. The case studies description found in the papers cannot fulfill the role of pilot projects properly.

There is also an open question about meaning of green structure strategy, and which main stakeholders have to take part in the recommended co-operation. Earlier in the paper, it was mentioned that it is not very likely to work out precise definition of the green structure. So, only the “local” definition is possible that depends on each country’s tradition, legal framework, the particular city conditions and also the person (party, institution) that is responsible for the green structure development. Unfortunately, that is sort of a trap in regard with the concept implementation.

In Poland the discussion how we are going to define green structure in Polish cities is welcomed. The urban natural system or the ecological framework were indicated as a sort of green structure concept but their assumptions lack social or aesthetic insight. So they should be considered as the basis or background for defining the green structure. In this case ecologists, geographers and landscape architects that cooperate with urban planners play the leading role. They should indicate specific areas in the urban fabric that have to be protected or developed and maintained in a special way in order to provide the environmental performance of the whole city structure. These areas should also host other green structure functions – mostly social. And at that moment the problem of green open spaces appears. As one can notice the definition of such spaces is not definitely approved and consistent [Giedych, 2001; Szumański 2005, Giedych, Szumański, 2005].

The definition contained in the Act on nature protection 2004 can be considered as a sort of a basis, but Giedych [2001] and Giedych, Szumański [2005] indicate other legal acts that also contain the partial definition of green spaces. The result is that a variety of different types of objects may be identified as green space, even in legal acts.

So, as one of the solutions the owner’s and as a consequence management approach has to be considered in defining the green open spaces. There are three general groups of owners: public (state and municipality), private and owned by different institutions. Such approach may help to point out the interested parties that is the first step for successful co-operation.

The last but not least, sort of co-operation recommended by Tjallingii [2005] is between researchers and practitioners. He sees it as crucial in order to produce know-how required for an effective green structure planning and maintenance.

Presently this co-operation seems to be rather weak in Poland. Of course, the experts from universities and other scientific institutions regularly take part in plans working out or help with expertise in solving particular problems of green planning and management. Some of the results of the work they had done (author of this paper do it as well) are even published, but still it is a long way to produce these general principles of know-how.

Closing remarks

This paper was prepared aiming to start the discussion on the general problems of the green structure planning in Poland. The Cost C11 is a good reason for initiating such discussion. Its results should be directed to all the stakeholders of the green structure planning and management. But, in my opinion, in Poland the researchers should start the action. Without knowledge based on scientific insight, project evaluation, “best practice” examples presented and commented, it could be difficult to
involve other partners into action and convince them that green structure is really important for the future of our cities. Or rather to convince them that they have to be careful, because their particular actions undertaken at different levels of administration, planning system, construction, management, maintenance and use, sometimes may be contradicting to opinion that we all share about the role of the green structure – at least generally.

Some of the theses and remarks presented in the paper one may find as to sharp or imperative. Also not all the statements are thoroughly documented. But gaps in documentation illustrate that problem is very dispersed or even hidden as a part of wider issues.

Now is the moment the green structure and its future have to be considered as a real, important problem for both discussion and action.

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Endnotes
1 Cost Action C11 was launched in 2000 and completed in 2004. Fifteen countries were involved in the programme: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Italy, Lithuania, the Netherlands, Norway, Poland, Spain, Sweden and the United Kingdom. 40 experts from universities, government departments, municipalities and consultant bodies participated in the seminars and field visits.
2 For the crucial stakeholder – local authorities – there are going to be prepared special recommendations.

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