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MASTER'S DEGREE THESIS

SUSTAINABLE MANAGEMENT OF OPEN PUBLIC SPACES IN LJUBLJANA

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PREFACE

I'm thankful to my mentor Prof. Dr. Stane Pejovnik for the valuable time he has given in the development of this thesis. It would not have been possible to make it in such a way without his able guidance.

I convey my sincere thanks to Dr. Aleksander Zidanšek for his kind assistance and help.

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1. INTRODUCTION

1.1. Description of the problem

The idea of sustainable development started in 1987 with the Brundtland Report published by the World Commission on Environment and Development. Soon after that, in 1989, the United Nations General Assembly decided to begin initial preparation for the Rio Conference, since awareness was increasing about the importance of stopping and reversing the effects of environmental degradations, but also to promote sustainable and environmentally sound development in all countries. The United Nations Conference on environment and development (UNCED) in Rio de Janeiro in 1992, adopted several texts including the Earth Charter, better known as the "Rio Declaration", and Agenda 21, setting out the action to be taken over the coming decades in order to achieve the objectives of sustainable development. Agenda 21 for Slovenia, a contribution of Non-Governmental Organisations, was prepared in 1993 in order to promote the implementation of sustainable development in Slovenia and to encourage the preparation of "local Agendas 21" in Slovenian municipalities.

Sustainable development is a decision for the 21. century to implement sustainable principles, focusing to embrace all directions of human activity. The endeavour is old and it is about improving the quality of life and at the same time preserving the natural environment on earth. Trying to achieve symbiosis of the natural and cultural environment was always a challenge. Awareness about the condition of the environment is growing on a daily basis. People care about the quality of their life and health, both being tightly connected to environmental health.

The concept of sustainable development in urban design means doing better not more, i.e. meeting the needs of the present without jeopardising the needs of future generations. The idea of sustainable City represents the needs and efforts to plan, design, regulate and maintain living environment of cities and other settlements (urban and rural space. After all, we just inherit those settlements and cities from future generations. This approach demands co-operation between all

social factors which influence the structure of the city or its organisation. Any co-operation between different factors demands proper and efficient organisational structure.

This study is focused on one of the most visible parts of the City, i.e. open public spaces in Cities. Management of open public spaces in Ljubljana is a combination of many activities which are mainly associated to planning, implementation and control (inspection). The present practice and organisation approach is mechanistic with a vertical decision making system and corresponding co-ordination. Policy making is managed by the Mayor and City administration. The activities are managed in separate sectors called departments. Planning is the priority of the Department of Urban Planning, environment protection of the Department for Environment Protection, traffic of the Department of Pubic Enterprises and Traffic, as well as maintenance and management with collaboration from several public enterprises and other companies. Control is carried out by the Inspection Office. There is no body with the purpose of co-ordination in issues of open public spaces. All activities and responses in the field of open public spaces are insufficient because of the high dynamics of interactions in open public spaces. Permanent interaction and harmonisation of conflicting interests of different activities is needed. The problem is how to assure the proper response of City administration on dynamic interactions on open public spaces, which should contribute to continuous process of implementation of the sustainable development targets and goals.

1.2. Purpose of the thesis

If we look at the proper response to interactions in open public spaces and try to maintain, plan and design the open public spaces for today and tomorrow its important to follow the sustainable principles. With appearance and image of sustainable culture, we must affect the growth of public awareness and education in issues of environmental health and improving quality of life, including the involvement of citizens implementing the agreed upon goals.

How can we act (maintain, plan and design) sustainable? Integrated approach is necessary. There are many obstacles and they are quite significant. The problem is also that professionals, talk “different languages”. The main question, if the integrated approach is appropriate, is how can we

achieve co-ordination and harmonisation – how to manage such an approach. If we want to solve this problem we must link together all the appropriate factors (Departments, Public enterprises, companies and other stakeholders) that can influence open public spaces into an efficient organisational structure and devise a methodology for the implementation of desired goals in order to succeed.

If we will try to do that, than the administration of Ljubljana, the capital of Slovenia, can enforce and promote sustainable development efforts with its own example.

1.3. Goals of the thesis

A sustainable community with sustainable management of open public spaces must reflect multiple activities wherever possible (as opposed to single-aspect zones, the paradigm from the past), social mixture of householders, efficient transport, energy consumption and use of materials.

Open Public spaces must speak about a city that is just, beautiful, creative, ecological, cultural and part of the knowledge society, a city of easy contact, a compact and polycentric city and a city of diversity.

The thesis presents one of the possible ways leading towards sustainable management of open public spaces. It is an integrated approach. If we consider the fact that generally all City administration's have mechanistic, departmental organisation structures. then management of open public spaces, inherently demanding interdepartmental project management, should have an organic organisation structure. Therefore our search was for a pattern of appropriate organisational structure which could fit onto the mechanistic structure. The mechanistic organisational structure of administrations are mostly routine organisational organisms. The sought for pattern was supposed to avoid negative effects on the existing basic mechanistic structure. First of all the routine subjects in existing mechanistic organisational structure should function undisturbed. Secondly the pattern of organic structure should provide the interdepartmental co-ordination between departments (horizontally) in the field of open public spaces. Together this organisational structure should fulfil the integrated approach with modern project management on the framework of basic organisational structure. This will result with a more efficient (effective) City administration in the field of open public spaces.

1.4. Method

The scope of this study is mainly based on the experiences and trends of Slovenian municipalities and city municipalities.

For the analysis of the present situation and proposed structure the descriptive analytical method of research was mostly used.

The first step was an inventory of basic principles of sustainable development, easily understood by the general public. The main indicators for sustainable development, especially concerning the general public were identified later. Then an inventory and definition of spaces in the city was carried out, i.e. which are the open public spaces or spaces connected to them. It was followed by an analysis of the current organisational structure and management connected to open public spaces. At the end, all the factors of participation within the City administration outside its reach and connected to open public spaces, were identified. In conclusion the new, "upgraded" organisational structure based on integrated approach was presented.

I researched sustainable development principles with stress on public awareness

Secondly I searched for indicators of sustainable development and specially for the general public, which are important for local communities and cities with issues concerning the quality of life.

Identification of open public spaces was carried out with an inventory of spaces in the city which are open public spaces or spaces connected with them.

The thesis evaluated the present situation in management of public spaces in Ljubljana.

The study tried to recognise all important factors in City administration, that should participate in an integrated approach to the issues of open public spaces.

When all factors involved in the process were identified, the appropriate organisational structure was proposed.

At the end the assessment of various aspects of the proposed organisational structure was made.

1.5. Structure of chapters

This thesis consist of:
Preface
Table of contents

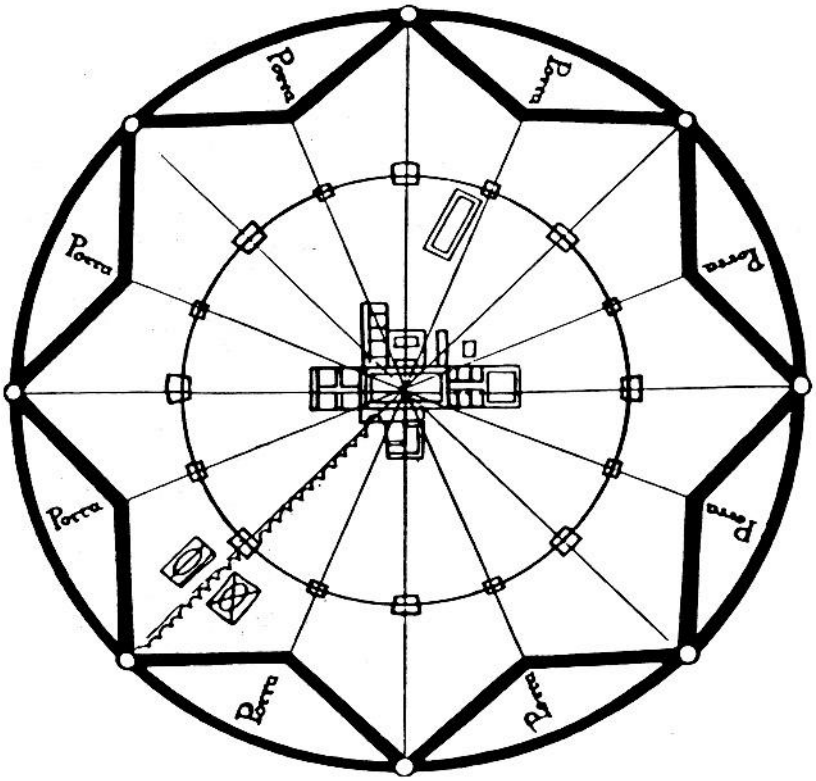
2. CHAPTER 2. SUSTAINABULITY AND OPEN PUBLIC SPACES

Sustainable development as an idea of balanced life and symbiosis with nature and constant search for ideal solutions for various problems is probably as old as the human civilisation itself. Nevertheless the term and definition "sustainable development" first appeared in 1987 with the "Brundtland Report" (Our Common Future) published by the United Nations World Commission on environment and development. Together with the "Rio declaration on environment and development" (Earth Charter) in 1992, its basic principles and Agenda 21, sustainable development represent the new paradigm for the new millennium. In these modern times official strategies and measures prepared on the global level are again trying to find "ideal solutions" to reverse the effects of environmental degradation and initiate sustainable and environmentally oriented development in all countries. Such actions are apparently a necessity.

2.1. Brief History of Sustainable Development

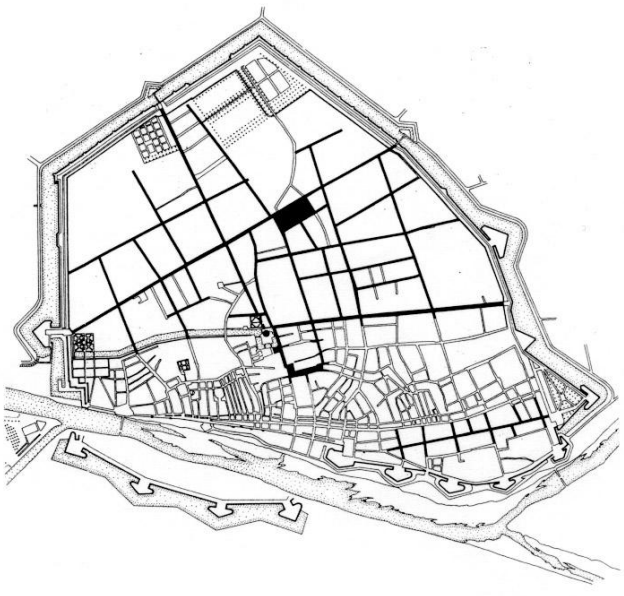
Human environment with its settlements was in the history of human civilisation always the place for continuous improvements and early searches for ideal solutions and perfect ties to the natural environment. Symbiosis of the built environment and the natural environment was also an aesthetic ideal, which was shown in many attempts of designing built environments with the reinterpretation of natural environments.

Figure 1. Ground plan of Sforzinda (1461/1464), the Ideal city for the Sforza, the Dukes of Milan, designed by Antonio Averlino (Filarete)



Source: Košir, F. - Zamisel mesta – 1993

Efforts and experiments to balance the built environment and natural environment in history are clearly visible in the City of Ferrara, which is analysed in the book Zamisel mesta (Košir, 1993, p.398.), where the extension of the city and trapeze ground plan of the new part were quite over-



Source: Košir, F. - Zamisel mesta – 1993

Development that should be sustainable, balanced, environment friendly, globally aware and considerate first appeared in Stockholm at the United Nations Conference on the Human Environment, from 5. to 16. June 1972. The term "sustainable development" was first used in 1987 in the Brundtland report, better known as Our common future, published by the World Commision on Environment and Development. The United Nations General Assembly decided in 1998 to undertake the preparatory ground work for a new conference with the basic aim of drawing up strategies to stop and begin to reverse the effects of environmental degradation and to promote sustainable development world-wide. Thus the Rio Conference, organised by the United Nation Conference on Environment and developmet (UNCED) brought us, amongst other: the Rio declaration on environment and development and the Agenda 21. With the Rio Declaration the United Nations reaffirmed the Declaration of the United Nations Conference on the human Environment, adopted in Stockholm in 1972 and sought to build upon it. With the Rio Declaration on environment and development the human civilisation agreed in 27 basic principles. With full respect of all the principles contained in the declaration, the Agenda 21 represents a dynamic programme towards the common goals of sustainable development. After the articulation of ideas and definition of basic principles of sustainable development at the general level, two more United Nations Conferences on Human Settlements are important for, planning, designing and maintaining the cities. Habitat I was held in Vancouver (1976) and Habitat II, in Istanbul (1996). Now we are at the doorstep of the next historical event, an important step toward global sustainable community. Its name is Rio+10. Rio+10 is going to be the World Summit on sustainable development (Johannesburg Summit), which will took place from second to eleventh September 2002. The summit will gather world governments, concerned citizens, United Nations agencies, multilateral financial institutions and other major actors to assess global change since the United Nation Conference on Environment and development (UNCED) in 1992. The summit is planning that the world community will take a critical look back at the Rio Conference (UNCED) held in 1992 and aims to arrive at a comprehensive, frank and useful review of the past 10 years.

2.2. Basic principles of sustainable development

2.2.1. Sustainable Development

Basic principles of sustainable development are described in three important documents adopted by United Nations organisation. All of the documents are mentioned in the subchapter history. Chronologically the documents are as follows:

Three most important documents which round up basic principles of sustainable development:

Our Common future (Bruntlandt report), The report of World Commission on Environment and Development, Oslo (1987),

Rio declaration on environment and development, The report of United Nations Conference on environment and development, Rio de Janeiro (1992) and

Agenda 21, United Nations Conference on Environment and Development, Rio de Janeiro (1992)

There have been other efforts in written or other form which are trying to point the main direction around the basic principles to reach the common principles of sustainable development. However the key obstacle between these efforts and those three documents is global consensus of majority of world's countries.

The concept of sustainable development is a continuos process which will develop constantly on the basis of needs for:

-Integrated thinking and approach with interconnections between economy, society and environment

-Long term thinking with precautionary principles to ensure future generations continuos development

-Appropriate distribution of equity and fairness

The traditional form of the worlds community with nation states is more and more challenged because of the growing awareness about environmental and economic interdependence. Sustainable development is possible only with international co-operation because we share the same environment which doesn't recognise national borders.

The approach of this concept is to anticipate and prevent. Anticipation increases certainty in possible future development so this more strategic approach deals with problems at their sources. Very important is the link between conservation and development. There is no place for separate

solutions. In world's interdependence one of the biggest challenges of sustainable development is to raise the living standard of the poor and distribute equity more fairly.

In the Brundtland report (Our Common future - Brundtland report, World Commission on Environment and Development, 1987), sustainable development has been described and defined in general. Sustainable development is not a fixed state of harmony but a process of change that will lead to global society which will be able to meet its own needs without damage on the environment. In that process the exploration of resources, the direction of investments, the orientation of technological development and institutional change are made consistent with future, as well as present needs. Sustainable development is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". This definition contains two key concepts. The first concept is the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given. The second concept is the idea of limitations imposed by the state of technology and social organisation on the environment's ability to meet present and future needs. Sustainable development should be a progressive transformation of economy and society. Society with its economy are people and they can be persuaded and get interested and involved in common interest mostly by education. After that institutional development and law enforcement can follow more correctly.

The Rio Declaration on Environment and Development (United Nations Conference on Environment and Development (UNCED), 1992) upgraded general efforts of international community to twenty-seven fixed principles of sustainable development. International community defined who is in the centre of concerns for sustainable development, the behaviour in dealing problems on the way to sustainability and equability as principle to meet developmental and environmental needs of present and next generations. Sustainable development is for human beings living in harmony with nature and should be carried out by the human beings, especially us, living in developed countries. Integrated approach through co-operation between states is essential for global partnership and fulfilment of the principles of sustainable development. In achieving such a development environmental protection must be an integral part of the development process and progress. Environmental protection cannot be separated from other activities in the development process. International co-operation between states should strengthen improvements by innovative technologies as a result of exchanges of

scientific and technological knowledge. International knowledge sharing should enforce understanding of our environment and speed up sustainable development. Unsustainable patterns of production and consumption should be reduced by promotion of appropriate demographic policies. Supportive and open international economic system with growth and sustainable development is necessary for solving problems of environmental degradation. Problem solving and measures should be based on international consensus. Precautionary approach is necessary in every decision. Equity should be recognised in environmental management of indigenous people also environment of people under oppression should be protected as well. In the declaration of UN on environment and development is written that "peace, development and environmental protection are interdependent and indivisible". From the previous sentence the need of integrated approach, anticipation and fair distribution of opportunities is clearly shown.

The Agenda 21 (United Nations Conference on Environment and Development ,1992) was framed as an action program (guidelines), which divided sustainable development efforts into four parts:

-Social and Economic Dimensions

-Conservation and Management of Resources for Development

-Strengthening the Role of Major Groups and

-Implementation

In the first part beside other social and economic dimensions the promotion of sustainable human settlement development is important. This effort should insure a quality of life in towns or other settlements with respect to natural properties and the human scale. In assurance of sustainable growth etc., partnership and symbiosis between towns and their surroundings is necessary. Protection and promotion of human health condition is also important, because of the awareness that out health condition is closely dependant on the health of the environment which surround us and can significantly influence strengthening of sustainable development. Integrated environmental and developmental decision making should be promoted as well, to encourage the participation of as many profiles as necessary.

In the second part, the conservation and management of resources for development the management of land resources (land, agriculture, fragile ecosystem, conservation of biological diversity, biotechnology, quality of water, waste management) is closely connected to awareness

and participation by the public. Reduction of water consumption in developed countries and selective waste management depend on high involvement of the public.

The third part is important from the implementation point of view because by strengthening the role of major groups the sustainable principle is pointing to people that will represent, in different situations, different people and groups, the basis of sustainable development. Nowadays the public is often organised in different interest groups, so called non-governmental organisations (NGO). These groups organised in non-governmental organisations are potential partners in sustainable development and we must strengthen their role. The local authorities, especially in towns should show initiatives in supporting Agenda 21 and principles of sustainable development.

The last part is dealing with the implementation approach. Besides financial resources and mechanisms there is no implementation without interest and involvement. So again promotion, education, public awareness and knowledge society are necessary for any steps toward sustainability.

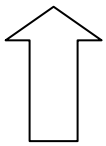
Governments should make partnerships with non-governmental organisations and with full participation of the public, to prepare national strategies, plans and policies for sustainable development on the national level. Sustainable development is the responsibility of governments, which must establish the working relationship with international organisations, business world, regional and local authorities and non-governmental organisations.

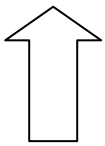
Activities and development are sustainable if human condition and the condition of the ecosystem are preserved or they are improving. Those two preconditions are interdependent and closely influence each other. It is necessary that we treat them together to find appropriate solutions for any challenges.

Core principles of sustainable development which will increase public awareness have to take into consideration the twin pillars of sustainable development. These are respect and concern for the people (quality of human life) and the ecosystem (earth vitality and diversity).

Figure 3. Twin pillars of sustainable development.

SUSTAINABLE DEVELOPMENT





QUALITY OF HUMAN LIFE EARTH'S VITALITY AND DIVERSITY

Source: Carew-Reid, J, et al., - Strategies for National Sustainable Development – 1993

Core principles which will increase public awareness for sustainable development:
education and public awareness,
protection and promotion of human health condition,
protection and promotion of earth vitality and diversity,
promotion and encouragement for participation in integrated environmental and developmental decision making,
strengthening the role of major groups and
promotion of sustainable human settlement development.

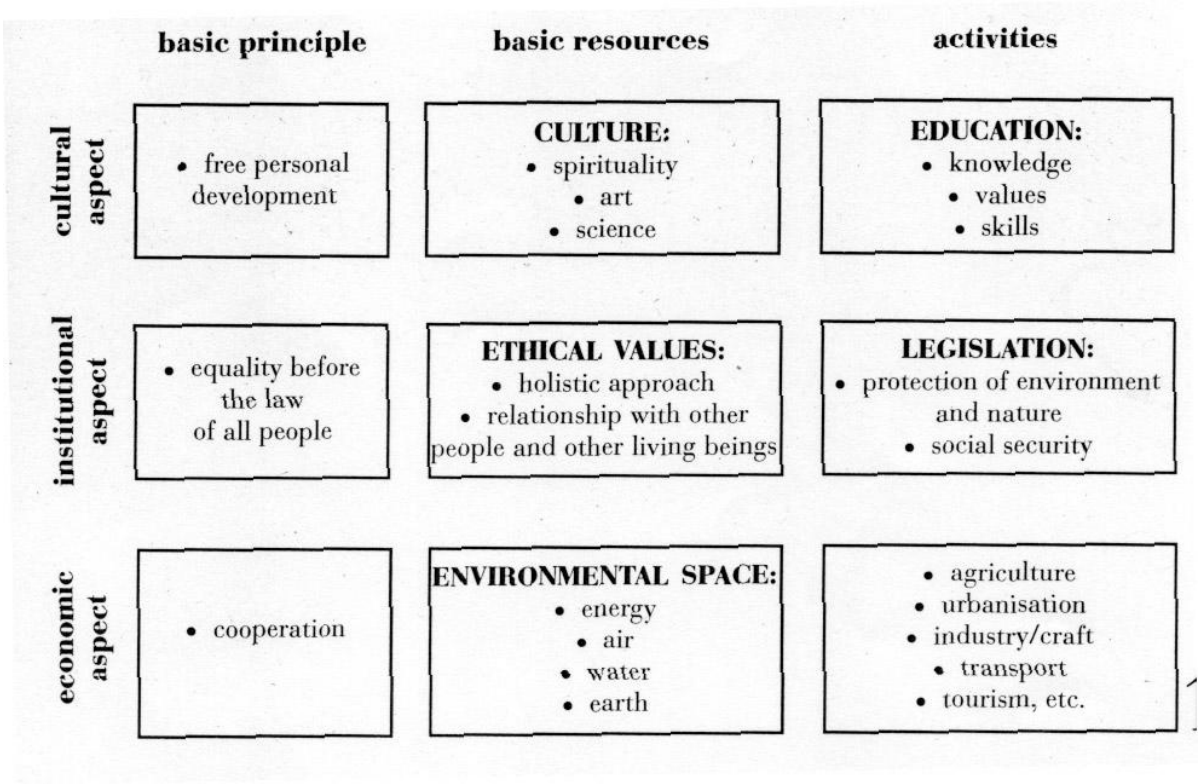
Behaviour of a society which respects these basic principles can enforce and lead to ideas, decisions and implementations which are sustainable and will not compromise the future.

Analysing the modern problems and searching for solutions leads us to three aspects of social activity. The cultural aspect, institutional aspect and economic aspect are parts of the social organism. Interactions of those three aspect and mutual impacts represent the social system. All changes of the social system have to be develop integrally for all three aspects and to respect sustainable development principles.
The culture of a nation has crucial influence on individual, particularly ethical values and behaviour. Education is essential in cultivating the new value system which is harmonised with sustainable development. This can be a good basis for a new sustainable lifestyle and establishment of new or upgraded social institutions.
Governmental and non-governmental institutions are the result of agreement on managing common tasks. Solving mutual problems with legislation standards and other regulatory

conditions reflect the ethical values of groups and individuals who adopted them. Establishment of legal framework which will respect sustainable principles is necessary to implement the sustainable models of economic activities in practice.

The basis of any economic activities is the exploration of natural resources. These are energy, air, water and earth. Sustainable principles require cutting back the use of natural resources and, use of renewable sources (energy, raw material) and preserving the remaining non-renewable resources for future generations. Education with legislative background is providing beneficial influence on the introduction of new approaches and technology that respect sustainable principles.

Figure 4. Three aspect of sustainability.



Source: Agenda 21 for Slovenia, A contribution of non-governmental organisations – 1995

2.2.2. Sustainable Towns and Settlements

Settlements and especially towns are important focus of this thesis. At the turn of the century, almost half of the global population live in urban areas. The world's economic system is

increasingly an urban one, with overlapping networks of communications production and trade. The system of towns and cities represent with its flows of information's, people, capital, commerce and energy the backbone for national development. A city or a town development and its future depend on the position in this urban system. In the Brundtland report (Our common future, 1987, p.235.) is written, that development of towns and cities critically depend on their position in the urban system, national for smaller towns and international mostly for big cities. The same applies to the surrounding countryside with agriculture, forestry and mining on which the urban system with towns and cities are dependant.

The twenty century was the century of rapid urbanisation and growth of population in cities. Urbanisation of society is a part of the development process in which the cities produce 60 % of the gross domestic product. However more and more cities are showing signs of developmental and ecological crisis. It is mostly shown in air pollution, shortage of potable water and homelessness.

Population Living in Urban Areas, 1950–2000

Region	1950	1985	2000
	(per cent)		
World Total	29.2	41.0	46.6
More Developed Regions	53.8	71.5	74.4
Less Developed Regions	17.0	31.2	39.3
Africa	15.7	29.7	39.0
Latin America	41.0	69.0	76.8
(Temperate South America)	(64.8)	(84.3)	(88.6)
(Tropical South America)	(35.9)	(70.4)	(79.4)
Asia	16.4	28.1	35.0
(China)	(11.0)	(20.6)	(25.1)
(India)	(17.3)	(25.5)	(34.2)
	(million)		
World Total	734.2	1,982.8	2,853.6
More Developed Regions	447.3	838.8	949.9
Less Developed Regions	286.8	1,144.0	1,903.7
Africa	35.2	164.5	340.0
Latin America	67.6	279.3	419.7
Asia	225.8	791.1	1,242.4

Source: 'Urban and Rural Population Projections, 1984', Unofficial Assessment, Population Division, UN, New York.

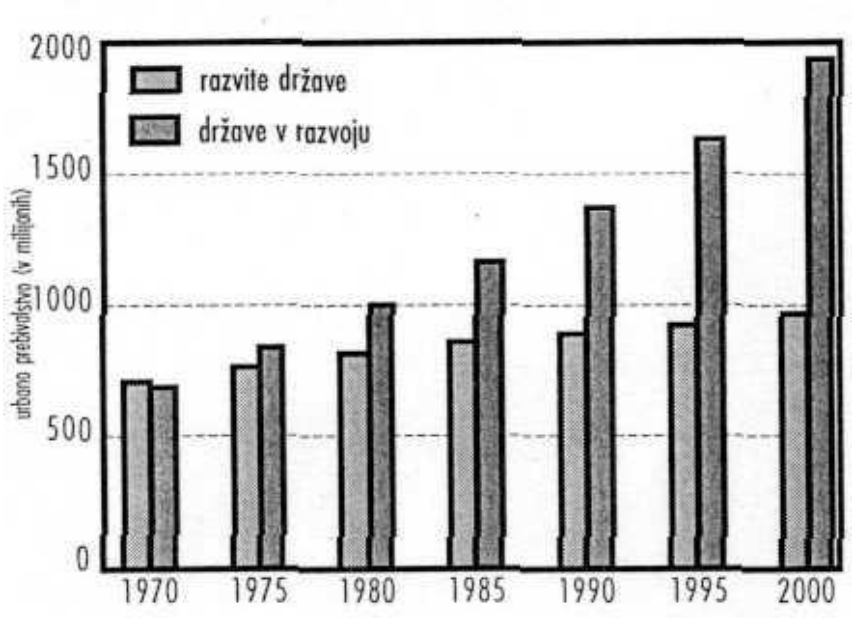
Table 1. Population living in urban areas, 1950-2000.

Source: Unofficial Assessment, Population Division, United nations – 1984

Many cities in industrial countries face problems of deteriorating infrastructure, environmental degradation, inner-city decay and neighbourhood collapse. In the Brundtland report (Our common future, 1987, p.17.) it is clearly commented that industrial countries with the means and resources to tackle the decline and negative tendencies of development are dealing more with political and social choice.

Developing countries don't have much choice because they have the urban crisis at their doorstep. The city governments in developing world mostly don't have the resources, power and adequate personnel to provide growing population with the land, services and facilities needed for residence. Instead of appropriate urban growth the illegal settlements are growing rapidly. Such parts of cities are primitively build, with almost no infrastructure, overcrowded and full of diseases because of unhealthy environments.

Figure 5. Growth of urban population in developed and developing countries, 1970-2000.



Source: United nations environment program, United Nations – 1992

Nevertheless the only answer in developed or developing countries is sustainable regulation and development of towns and settlements. Regardless of current resources, which a developed country has at its disposal, the precondition for quality residence in towns and settlements is quality of human life and surrounding ecosystem, both of which are in the fundamental character of sustainable development.

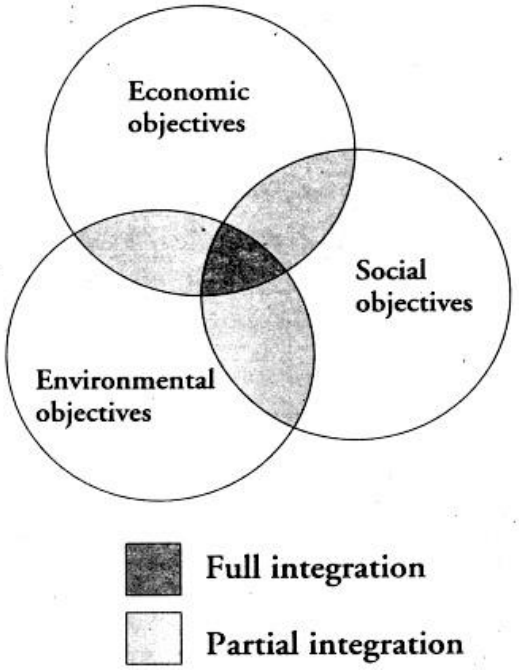
Table 2. Two fundamental goals for towns and settlements.

the insurance of quality of life in towns and settlements is in accordance with natural properties and the human scale
the creation of partnerships and a harmonious relationship between towns and surrounding countryside

Source: Agenda 21 (Agenda 21 for Slovenia) – 1995

Economic development is again indispensable in sustainable development, especially in towns and cities, where the majority of economic activities occur. The whole point and essence of sustainable development is to integrate the economic, social and environmental objectives wherever possible. Where integration is not possible sustainable development should make trade-offs among objectives.

Figure 6. Integration of objectives



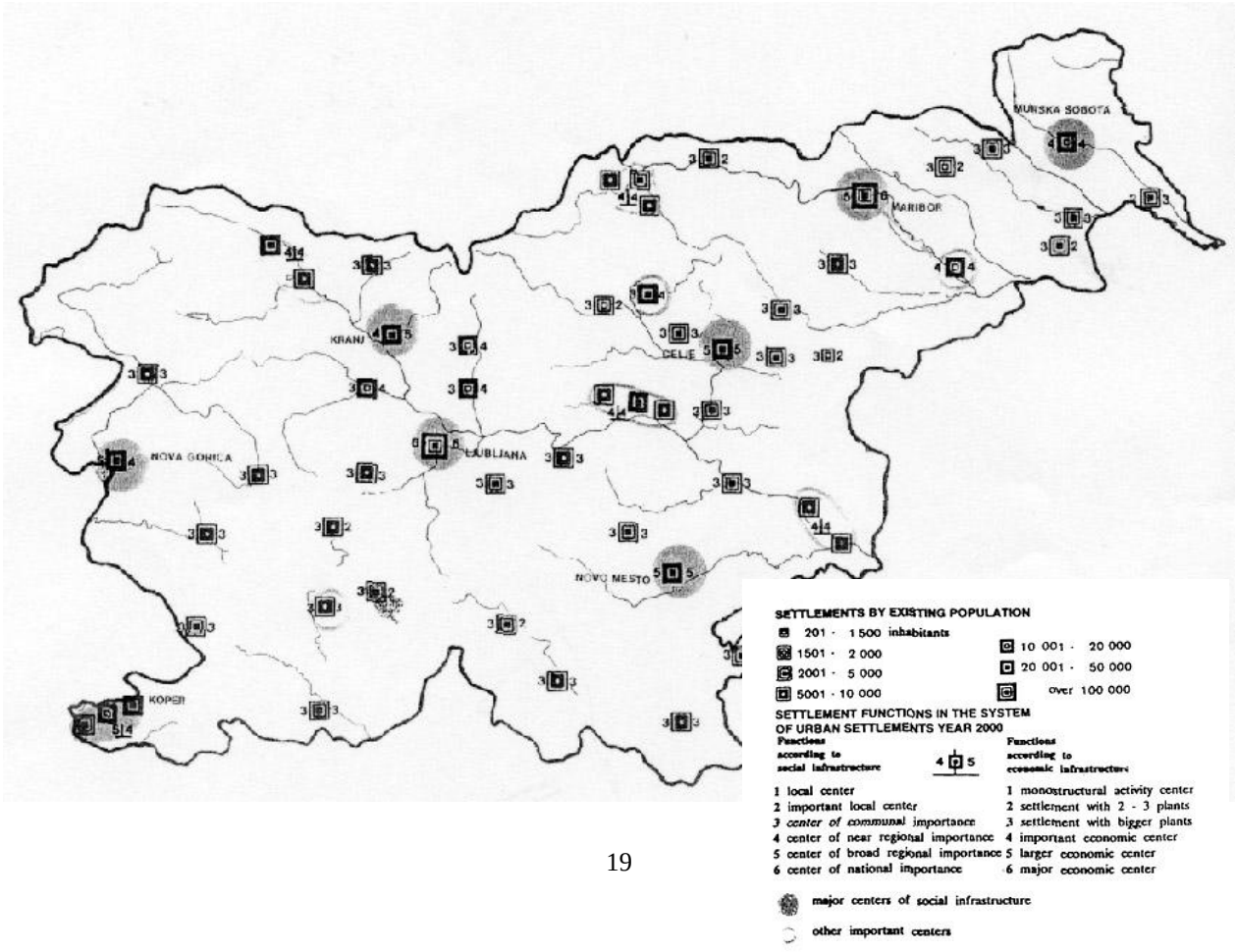
Source: Strategies for National Sustainable Development – 1994

Central European Slovenia with his urban system measure about 20.256 km^2, with a population of 1.969,733 inhabitants. The size of Slovenia, relatively high dispersion of population, and former policy of polycentric economic development resulted in urban centres with relatively small concentration. The average population density is 97 inhabitants per km^2. Dispersion of population among almost 6000 settlements is the major characteristic of Slovenia. The reason for such distribution is because of geographical characteristics, historical development and a policy of balanced regional development, i.e. the polycentric concept of urbanism in the last 30 years based on investments in the economic infrastructure, public administration and economic development. Polycentrism appeared to be the most successful tool in the prevention of excessive concentrations of population in urban areas. This concentration is nevertheless still relatively high, as one fifth of the total population lives in towns with over 20.000 inhabitants.

The biggest city is Ljubljana with approximately 275.000 inhabitants. The second biggest city is Maribor, with has more than 100.000 inhabitants. There are twelve towns with more than 10.000 inhabitants and 20 towns with more then 5.000 inhabitants. Ljubljana and Maribor are comparable to middle sized European cities. Three towns have more than 50.000 inhabitants, and

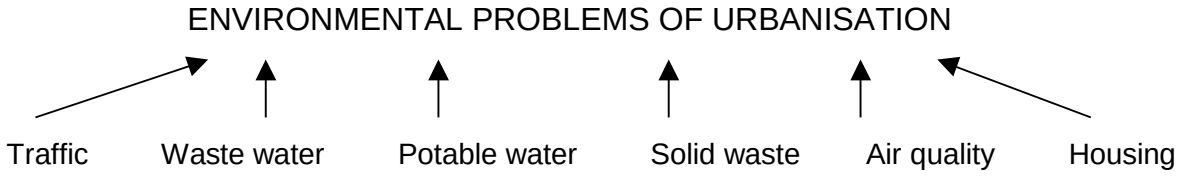
another ten cities as important regional centres has just between 20.000 and 50.000 inhabitants. The shape of the urban network is a cross from Hungary in the East to Italy and sea in the West and from Austria in the North to Croatia in the South. The majority of regional centres along the border according to Habitat II Slovenia (Habitat II Slovenia, Slovenian National report, 1995) are too small to compete properly (at least because of a critical mass) with cities (regional centres) in neighbouring countries. However the capital city of Ljubljana, Koper, Nova Gorica, Celje, Maribor, Velenje, Kranj, Novo Mesto and Murska Sobota, with their supply and employment functions hold economic power, good economic infrastructure and educated and trained population.

Figure 7. System of urban Settlements in Slovenia



The situation explained in Habitat II Slovenia (Habitat II Slovenia, Slovenian National report, 1995) shows us that warnings in Agenda 21 (Agenda 21, A Contribution of Non-governmental organisations, 1995) were properly articulated. Regardless of scale, the biggest Slovenian cities are familiar with the problems of urbanisation. There might be others but generally they are facing mostly with environmental problems of traffic, sewage, potable water, waste management, air quality and housing.

Figure 8. Main environmental problems of urbanisation in Slovenian cities



Source: Agenda 21, A Contribution of Non-governmental organisations – 1995 and own consideration

Traffic

Traffic particularly in cities and city centres is increasing beyond all limits. City administrations are desperately trying to assure enough parking space. There are too many cars, moreover, they are occupying a lot of pedestrian areas. At the same time the use of public transportation is declining. The modal split in Slovenia and Ljubljana is unfavourable with a continuing trend. Data from the Statistical Office of the Republic of Slovenia has shown that in Slovenia 36,1% of commuters are using private car and 35,5% (33,3% +2,2%) public transportation. In Ljubljana 35,4% are using car and 44,4% public transportation. Because of the situation it is necessary to promote public transportation and appropriately increase the quality of public transportation. Accessibility and attractive public transportation depend also on appropriate stimulation's and subventions of the local authorities (City administrations). According to representatives (top manager) of public utility company which is running the public transportation in Ljubljana, the

subventions should increase and cover up to 30% -50% of the ticket fare (Strategija trajnostnega razvoja mesta Ljubljana, SWOT delavnica, May 1999).

Table 3. Modal split in biggest Slovenian cities.

Indicator 11- Modal split Proportion of work trips undertaken by							
	a. Private car	b. Train or tram	c. Bus or minibus	d. Motorcycle	e. Bycicle	f. Walking	g Other
1 - Slovenia (national)	36,1	2,2	33,3	1,4	26,5*		0,5
2 - Ljubljana	35,4	0,3	44,1	0,4	19,3*		0,5
3 - Maribor	36,0	1,0	40,0	1,0	2,0	19,0	1,0
4 - Koper	71,9	-	7,6	1,4	0,5	18,2	0,4

Source: Habitat II Slovenia (Statistical Office of the Republic of Slovenia, Results of surveys no. 617; data provided by municipal offices) – 1995

Waste water

The biggest Slovenian cities mostly don't have sufficient waste water treatment plants. The capital city and the biggest city in Slovenia, Ljubljana, is still without a complete waste water treatment plant. Waste water is treated only mechanically. In 1997 the City Council authorised the Water works and sewage public utility company (Vodovod Kanalizacija) to act as the investor of further constructions to complete the waste water treatment plant. The treatment plant is still unfinished. This is causing a considerable burden on rivers no matter how many water treatment systems industries already have. Part of the residential areas with detached houses within the city limits are not connected to the cities sewage system, which increase risk and threat to

underground aquifer which is the source of potable water. Construction of the sewage system covering all households and completion of the waste water treatment plant should be the primary task and short term goal in the city development plan.

Table 4. Household connection levels.

Percentage of households connected to:

	A. Water	B. Sewerage	C. Electricity	D. Telephone
Slovenia, national	97	90	92	68
Ljubljana	100	99	99	84
Maribor	100	58	98	31
Koper	100	98	99	92

Source: Habitat II Slovenia (Statistical Office of the Republic of Slovenia, Results of surveys no. 617; data provided by municipal offices) – 1995

Potable water

In some pessimistic scenarios lack of potable water might become a reason of armed conflicts and wars in the future. If we do put aside such extreme forecasts, the importance of healthy potable water is nevertheless fundamental and represents one of the basic human needs. No matter what the statistical data offers, the capital city Ljubljana has still many areas which are poorly covered by the sewage system. According to the public utility company, managing water supply and sewage system, 32.789 buildings obtain potable water from their sources, while the sewage system covers only 20.070 buildings. According to their information (Holding Mesta Ljubljane, za boljše okolje in trajnostni ravoj, 1997, p.18.) almost 40% of the buildings that are

connected to the city water supply system, don't have adequate connections to the sewage system. They still use cesspools, thus indirectly dumping waste water directly into the ground, and they end up in underground aquifer. Part of the sewage system is not tightly sealed thus part of the waste waters from the sewage system end up in underground aquifer too. Generally Slovenia and Ljubljana aren't suffering from lack of potable water, however because of industrial development and expansion of the cities and settlements pollution is an omni-present threat. Preventing pollution of underground aquifers and rivers should be a primary task of cities and other municipalities, which can be successfully enforced also with an appropriate level of awareness of the public.

Table 5. Disposal methods for solid waste .

Disposal methods for solid waste:

	A.Sanitary landfill	B. Recycled	C.Open dump	D. Incinerated	E. Other
Slovenia, national	66	7	4	7	16
Ljubljana					
Maribor	70	15	10	1	4
Koper	94	6	-	-	-

Source: Holding mesta Ljubljane, za boljše okolje in trajnostni razvoj – 1995

Solid waste

Solid waste collection in Slovenia is satisfactory. 75% of households in the country are enjoying regular solid waste collection. In Maribor 90,0% and Ljubljana 90,3% of households are enjoying regular waste collection. However most of Slovenian cities and municipalities are facing the expiration date of their existing landfills. Local governments are facing strong opposition from the neighbouring resident population, while they are planning new locations for landfills. Waste separation facilities are rare and selective collection of waste from households is negligible.

In Slovenia and Ljubljana the waste per capita ratio continues to grow and represents one of the most important environmental and urban problems. According to Snaga the public utility company for waste collection in Ljubljana, transportation, disposal and cleaning of streets, roads and other public areas, the situation since 1997 is getting worse, because of unsuccessful collection of secondary raw materials at the source (selective collection). Sewage water from landfills is ladled out and part of it is cleaned in pilot waste water treatment plants. Most of the out-coming waste water from landfills is going directly into the city sewage system. Use of landfill gas is in Ljubljana successfully managed. The bad smells from landfill are being prevented or diminished, possibilities of explosions prevented and the use of gas, a renewable source for electricity production is being considered. It seems that selective collection of waste from households and waste separation facilities on landfills are the weakest points in waste management. This problem is already highlighted because landfills are occupying more and more valuable space in and around cities.

Air quality

Air quality in towns and specially in industrial cities is one of the major concerns of the inhabitants. Many present and past researches have shown that quality of life and human health is closely connected to the quality of air which we breath. The biggest city Ljubljana with strongest industry has extremely unfavourable climate conditions. Inversion conditions prevail in 60 % to 70% of the year. In such situation the wind is weak and ventilation (aeration) almost non-extant. The city centre because of its density of population creates an explicit "heat island" which is causing in summer overheating of city centre and in the winter creates the so called fireplace effect. The differences of temperature between the city centre and its surroundings are up to $8\,^{o}$C. Air from all parts is coming from the city edge to the centre. The air rises above the city centre to the inversion level until it slowly cools down and drops at the edge of the city where it entering into circulation. We can illustrate such climate conditions as a covered pot, whose volume differs with the inversion level, however the pot still disables mixing of polluted air with fresh air from broader surroundings. The measurers toward improvement of air quality in Ljubljana (as in other big Slovenian cities) are according to the municipal Department for environmental protection (Piltaver, 2001, p.5.) as follows:

-Continuing of gas heating programme,

-Changing the fuel in big thermal energy plants, encouragement of use of better quality, ecologically more appropriate coal,
-Reinstatement of appropriate air emission control in the broader hinterland of the city,
-Reinstatement of appropriate air emission control for following influences caused by traffic,
-Programme of control for decreasing traffic in town.

Housing

In the Brundtland report (Our Common future - Brundtland report, World Commission on Environment and Development, 1987) is written that the city governments in developing world mostly don't have the resources, power and adequate personnel to provide the growing population with land, services and facilities needed for residence. It seems that Slovenia, according to gross domestic product is a developed country, and the capital city, Ljubljana is not in a better position. After independence and during the privatisation process, the government sold off the majority of former so called "societal flats" to their occupants at extremely low price. Thus Slovenia is one of the European states with the lowest rate of non-profit or social flats in its housing stock. The lack of housing stock and financial funds disabled local communities, cities and other municipalities from solving the housing needs. The lack of homes was and is still high as the prices which followed liberalisation and decentralisation of the economy increased. Providing proper residence for growing population especially for young families became one of the biggest problems in Slovenian cities and the solutions are very slow and expensive for the society. However, if we put aside the financial problem of providing proper residences, the building industry with its investments stimulates other businesses, e.g. providers of material for construction and fittings, but also furniture used in the interior of houses. Providing adequate residences and use of technologies and materials for sustainable buildings are therefore simultaneous goals in solving this problem.

Table 6. House price and house rent to income ratio.

House price

	Median house price (USD)	Median annual house price (USD)

1. Slovenia (National)	~ 63.000,00	~ 9.100,00

House rent to income ratio

Defined as the ratio of the median annual rent of a dwelling unit and the median household income of renters

	Private (uncontrolled rent)	Public (state control rent)
1. Slovenia (National)	0.327	0.046

Source: Habitat II Slovenia – 1995

Regardless of sustainable viewpoints the main urban planning issue (urban planning and design profession) are in close correlation to environmental problems of urbanisation. According to Stanič the main issues concerning physical planning and spatial management are (manuscript, 2000):

ACCESSABILITY (the highway network, the railway system - 5^{th} and 10^{th} E corridors – the construction of highways is dramatically changing the settlement pattern in Slovenia; parking – automobilism + poor public transportation; maritime orientation; planned construction of the dual railway connecting the port of Koper with the hinterland)

HOUSING (compact or dispersed, organised or individual initiative, costs, long-term loans and national housing programme; according to research done in the last five years, 93 % of Slovenians would like to live in their own homes, of these more than 60 % would like to live in detached houses, away from their neighbours; following liberalisation and decentralisation of the economy, prices of flats have gone up dramatically, for example, the going price for a new flat in Ljubljana is 1500 ECU/m^2)

COMMUNAL INFRASTRUCTURE (sewers and waste water disposal, provision of drinking water and protection of water resources, waste disposal - centralised incinerators; according to the National programme on environmental protection the amount of money spent on cleaning the countryside and building infrastructure such as provessing plants, sewers etc, 2,5 % of the annual GDP)

REAL-ESTATE MANAGEMENT (retroactive or proactive approach, privatisation and de-nationalisation, land prices; the land market is almost informal and a serious threat to organised and long-term planning)

CULTURAL and ENVIRONMENTAL ISSUES (active heritage protection, environmental issues, nature protection; the problem is setting priorities)

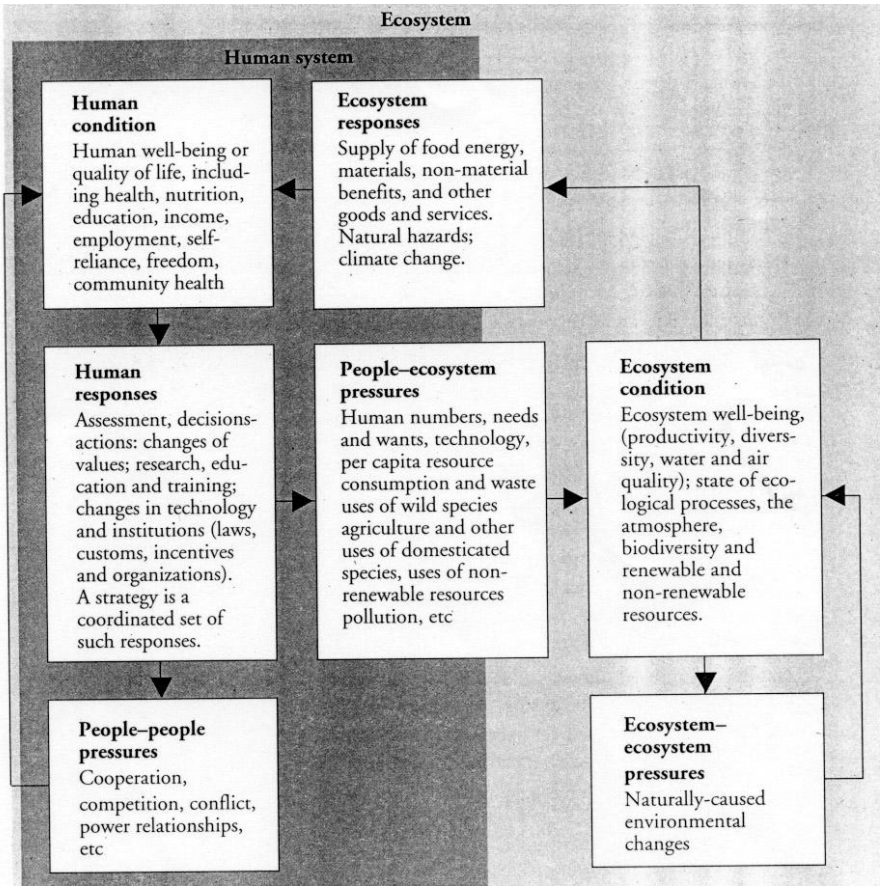
NEW FEATURES (out-of-town shopping malls, multiplex cinemas, functional and structural renewal of historic towns)

The choice of common denominators guiding future changes could be found in global environmental and development goals, because of the vast variety of particularities or local specifics. Nevertheless generalisation would lead to reduction in identified local potentials. Local specifics therefore are, or should be, the mainstay of devising programmes of development.

2.2.3. Information, Education and Participation

Protection of Earth's ecosystem should be understood as the foundation of our life on earth and warranty for our existence. The system of humanity, people and their activities, are an integral part of the ecosystem and people should recognise themselves in it.

Figure 9. Relationships between people and the Earth



Source: Strategies for national Sustainable Development – 1994

Sustainable future is going to be (supposed to be) a common decision, as will be the steps toward sustainability. The decision for sustainable development, our future and evolving society should be as democratic as possible. To implement measures and changes in the future it is necessary to follow three steps to assure broad consensus and understanding of necessary steps:

Information

Environmentally sound technologies already provide a good return to firms or communities. Still large sections of industry and communities, mainly but not exclusively in developing countries, don't recognise the benefits of alternative (environmentally friendly) solutions. A large and worrying knowledge gap is present generally in information about existence of environmentally sound technologies. Companies in developing countries according to their information in many cases didn't know what technologies are available. According to information of United nations Environment Programme (Sustainable Business, 1998, p.39), fifty business leaders from the Middle East told a workshop organised by DELTA (Developing Environmental Leadership Towards Action) in September 1996 that lack of awareness of alternative technologies was the major obstacle to improving their corporate environmental performance. The ability to obtain information on available technological alternatives (best available technique) is the first step in broader use of environmentally friendly solutions. They are calling to attention that many solutions for environmental problems may already exist. They have been developed world-wide and already implemented by institutions and communities. The knowledge, solutions and experiences of others may not have been shared properly and offered world-wide. Developing countries and countries in transitions may be unaware of some existing technological alternatives which might be useful for their environmental problem solving. They may also not know that the large number of these solutions are in the public domain, in some cases are free of charge, and can therefore significantly contribute to improvements of condition of ecosystem and generally to quality of life. So the information (to execute on free choice among possibilities) is the first step in the process towards sustainable society.

Education

Education and knowledge is the next step and precondition for appropriate decisions, deep awareness and personal choice and appropriate orientation. Basic and applied knowledge must also have influence on ones workplace and decision making. Education, research and development forms an integrating triangle for higher education. According to general director of UNESCO (The integrated triangle, 1996), basic research and further education is the essential concern of universities, however the quality of university, research and education should be judged in terms not only of knowledge but also of values, the ability to cope with new situations and willingness to help others, in local community and world-wide. Developing the knowledge and practical skills to foresee and identify environmental hazards and the capacity to reduce the risk. Basic capacity requirements must include knowledge about environmental health problems and awareness of leaders, citizens and specialists (politic leaders, general public, science an technology). Environmentally focused training activities in sustainable development (general, spatial planning, urban design planning and management) are necessary in the process. Knowledge sharing is essential in mechanisms of inter-sector and intergovernmental co-operation in sustainable development (planning and management). Training, participation programmes for general public and training on-the-job for government officials and experts must take place in all activities of sustainable development.

Participation

The purpose of information and education is to ensure participation of major stakeholders in the process toward sustainable development. Arrangements for involving private and community interest in dealing with environmental/spatial problems are necessary, as well as the delegation of authority and distribution of resources to local authorities. Institutionalisation of participatory approaches for sustainable development is the foundation for continuous dialogue between the public sector, private sector and communities. An important finding, also mentioned in the handbook (Strategies for National Sustainable development, 1994) is that sustainable development involves trade-offs among economic, social and ecological objectives. They however cannot be determined by scientific mean alone, no matter how multi-disciplinary their background. In “participated” decisions the value judgements are present too. Participation by stakeholder groups is critical for decision making. The result is realistic, with broad base of knowledge, understanding and commitment of stakeholders involved. Participation is important in horizontal links across sectors, as well as vertical from national to local levels and vice versa.

For participation at the beginning of project/task is best to use existing structure and methods. Participation is also an obligation to share responsibilities for common decisions. Broad participation in day-to-day behaviour is essential and also one of the goals of successful implementation of changes of life style, which sustainable development demand. However the participants in certain projects which will contribute to such development should be those, whose values, knowledge, technology and institutions need to change or need to strengthen to achieve objectives. The objectives determine the participants and vice versa. The participation of key participants in the process is necessary and if someone cannot be induced to participate is a sign of inadequate support. Publics which participate in designing and decision making, understand the purpose and implement objectives at highest possible levels. The participated solutions for the people by the people are the key for successful implementation of all ideas.

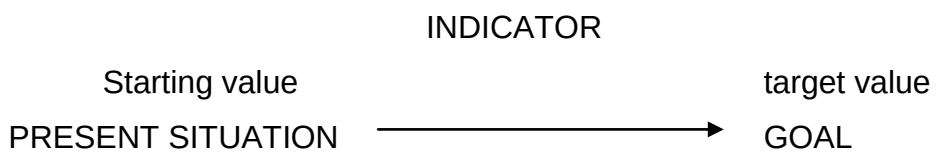
2.3. Indicators of Sustainable Development for General Public

2.3.1. Purpose of indicators

In chemical terms an Indicator means a method or tool for recognising properties of certain compounds. They are showing us the present situation (they indicate) and situation after some possible measures (changed situation). In any case indicators are important tools in measurement of present and monitoring future situations.

For any task whatsoever, we first need to know what is our goal. Then it is essential to asses the situation and select the proper measures to start activities toward reaching that goal. For effective monitoring and orientation in development it is important to select proper indicators. They show us if we are approaching to our goal or not. The result of the measures with indicators is the necessary feed back information.

Figure 10. Measures of activities (indicators)



Source: Consideration of mentor, Prof. Pejovnik and own consideration

Indicator points to an issue or condition. It alerts us to a problem before it gets too bad and helps us recognise what need to be done to solve the problem. Characteristics of effective indicators are that they are relevant, easy to understand, reliable, and based on accessible data.

Table 7. Characteristics of effective indicators

Effective indicators are relevant; they show something about the system that one needs to know.
Effective indicators are easy to understand, even by people who are not experts.
Effective indicators are reliable; they provide trustworthy information.
Effective indicators are based on accessible data; the information is available or can be gathered while there is still time to act.

Source: Sustainable Measures - 2001

Relevant

An indicator must be relevant, and fit the purpose for measuring. As indicators, the gas gauge and the report card both measure facts that are relevant. If, instead of measuring the amount of gas in the tank, the gas gauge showed the octane rating of the gasoline, it would not help one decide when to refill the tank. Likewise, a report card that measured the number of pencils used by the student would be a poor indicator of academic performance.

Understandable

An indicator must be understandable. One needs to know what it is telling. There are many different types of gas gauges. Some gauges have a lever that moves between 'full' and 'empty' marks. Other gauges use lights to achieve the same effect. Some gauges show the number of gallons of gasoline left in the tank. Although different, each gauge is understandable to the driver.

Similarly, with the report card, different schools have different ways of reporting academic progress. Some schools have letter grades A through F. Other schools use numbers from 100 to 0. Still other schools use written comments. Like the gas gauge, these different measures all express the student's progress or lack of progress in a way that is understandable to the person reading the report card.

On the other hand, a gas gauge that showed the number of BTU's left in the tank would probably not be very useful in deciding when to fill up the tank. Likewise, a report card that gave grades in ancient Greek script would be a mystery to most people. In order to know when action is needed, one must be able to understand what an indicator is telling.

Reliable

An indicator must be reliable. One must trust what the indicator shows. A good gas gauge and an accurate report card give information that can be relied on. A gas gauge that shows the tank is empty when in fact it is half full would make the driver stop for gasoline before it is needed. A gas gauge that shows the tank is half full when in fact it is empty would cause the driver to run out of gas in an inconvenient place. Similarly, if a student's grade were reported wrong, an honours student could be sent for remedial work and a student who needs help would not get it. An indicator is only useful if we know we can believe what it is showing.

Reliability is not the same as precision. When your gas gauge registers empty, you know there is still a gallon or so of gasoline left as a reserve. The gas gauge reliably under-reports the amount of gasoline. An indicator does not necessarily need to be precise; it just needs to give a reliable picture of the system it is measuring.

Accessible Data

They must give information while there is time to act. For example, imagine a gas gauge that only gave you the amount of gasoline in the tank when the engine was started. After you have been driving for several hours, that reading is no longer useful. You need to know how much gasoline is in the tank at each moment. Similarly, a report card distributed a week before graduation arrives too late to give a student remedial help. In order for an indicator to be useful in preventing or solving a problem, it must give you the information while there is still time to correct the problem.

(Sustainable Measures – 2001)

One of the biggest problems with developing indicators of sustainable development is that the best indicators are those for which there is no data. Indicators for which there is no data are the least able to measure sustainability. This has led many communities to choose traditional data sources and measures for indicators. There are several advantages to traditional indicators. Data is readily available and can be used to compare communities. Traditional indicators can help to define problem areas and traditional indicators can be combined to create sustainability indicators.

Indicators of sustainability are different from traditional indicators of economic, social, and environmental progress. Traditional indicators such as stockholder profits, and water quality measure changes in one part of a community as if they were entirely independent of the other parts. Sustainability indicators reflect the reality that the three different segments are interdependent. Sustainability requires this type of integrated view of the world it requires multidimensional indicators that show the links among a community's economy, environment, and society.

The Gross Domestic Product (GDP), a traditional indicator, measures the amount of money being spent in a country. It is generally reported as a measure of the country's economic well-being. More money is being spent, the higher the GDP and the better the overall economic well-being is assumed to be. However, because GDP reflects only the amount of economic activity, regardless of the effect of that activity on the community's social and environmental health, GDP is not considered as sustainable indicator.

2.3.2. Indicators of Sustainable Development

Indicators for sustainable development measure the activities which take into the concern all three factors together; economic , social, and environmental development.

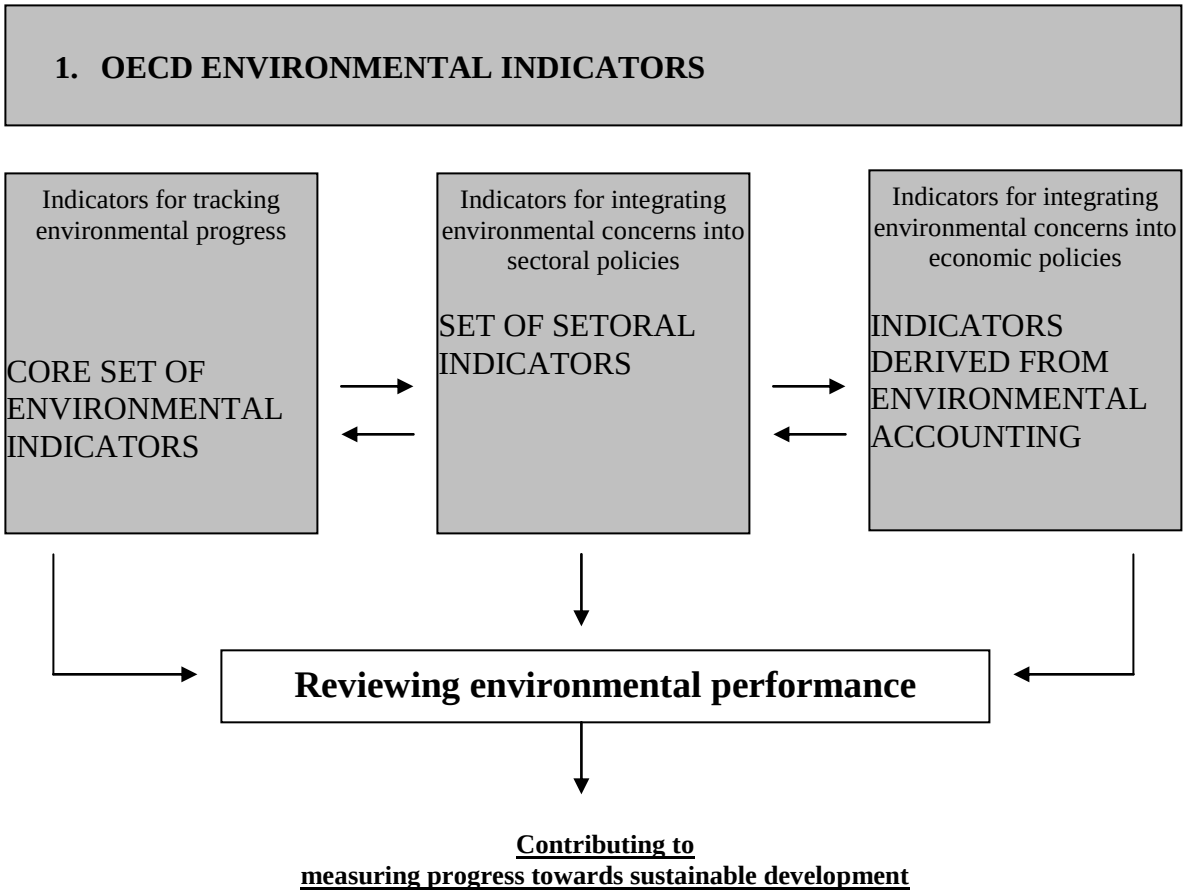
Comparable sustainability indicator to GDP is the Index of Sustainable Economic Welfare (ISEW). It is a modification of traditional indicator(GDP = economic), upgraded to sustainable development indicator (ISEW = economic, social and environmental). The indicator is described in Sustainable Measures (Suatainablemeasures.com). To get a more complete picture of what is economic progress, the ISEW subtracts from the GDP corrections for harmful bases or consequences of economic activity and adds to the GDP corrections for significant activities such

as unpaid domestic labour. For instance, the ISEW accounts for air pollution by estimating the cost of damage per ton of five key air pollutants. It accounts for depletion of resources by estimating the cost to replace a barrel of oil equivalent with the same amount of energy from a renewable source. It estimates the cost of climate change due to greenhouse gas emissions per ton of emissions. The cost of ozone depletion is also calculated per ton of ozone depleting substance produced. Additionally, adjustments are made to reflect concern about unequal income distribution. The correction for unpaid domestic labour is based on the average domestic pay rate. Some health expenses are considered as not contributing to welfare, as well as some education expenses.

The Organisation for economic co-operation and development (OECD), Work Programme on Environmental Indicators has led to several sets of indicators to measure environmental progress, and various sets of indicators to integrate environmental concerns in sector policies. The OECD environmental indicators are regularly used in environmental performance reviews. They are valuable way to monitor the integration of economic and environmental integration decision making, to analyse environmental policies and to gauge the results. Beyond the immediate application in OECD environmental performance review, these indicators also contribute to the broader objective of reporting on sustainable development. The OECD programme on environmental indicators has three purposes. First is keeping track of environmental progress. Second is ensuring that environmental concerns are taken into account when policies are formulated and implemented for various sectors (transport, energy, agriculture). The last is ensuring similar integration of environmental concerns into economic policies, mainly through environmental accounting. They gathered mayor environmental indicators of the OECD (Core Set) grouped by environmental issue and present selected socio-economic indicators with environmental significance.

A Environmental indicators (sets): Climate change, Ozone layer depletion, Air quality, Waste, Water quality, Water resources, Forest resources, Fish resources, Bio-diversity.
B Socio-economic indicators (selection): GDP and population, Consumption, Energy, Transport, Agriculture, Expenditure.

Figure 11. OECD environmental indicators



Source: Towards sustainable development - Environmental indicators - 1998

Statistical office of the European communities (Eurostat), according to methodology on the sustainable development indicators of the United Nations Commission on Sustainable Development (UNCSD), developed a list of indicators of sustainable development. According to

them this is not a definitive list of indicators of sustainable development. It is an information base which will be revised and supplemented on existing data source. This is an attempt of United Nations Commission on Sustainable Development (UNCSD) to facilitate co-ordination between all the partners involved in the measurement of sustainable development. This study (Indicators of sustainable development – 1997) comprise:

A ECONOMIC indicators
B SOCIAL indicators
C ENVIRONMENTAL indicators
D INSTITUTIONAL indicators

Sustainable Measures (Suatainablemeasures.com) provide internet consulting services to communities working on sustainable development. They provide basic information that is useful in developing indicators for sustainable development focused on society. Their experts developed their own list of indicators in 12 categories:

- -ECONOMY
- -EDUCATION
- -ENVIRONMENT
- -GOVERNMENT
- -HEALTH
- -HOUSING
- -POPULATION
- -PUBLIC SAFETY
- -RECREATION
- -RESOURCE USAGE
- -SOCIETY
- -TRANSPORTATION

2.3.3. Indicators for General Public

This indicators should show (measure) the level of public awareness and affinity to sustainable development and lifestyle. They should be mirroring the trends towards sustainable society.
Indicators of sustainable community are useful to different communities for different reasons. For a healthy, vibrant community, indicators help monitor the situation, so that negative trends are

caught and dealt with before they become a problem. For communities with economic, social, or environmental problems, indicators can point the way to a better future. For all communities, indicators can generate discussion among people with different backgrounds and viewpoints, and, in the process, help create a shared vision of what the community should be. They point to areas where the links between the economy, society and environment are weak.

Indicators for general public in issue of open public spaces are those indicators which point on situation and trends related to level of awareness and concern about environmental condition and correlation to development. They should contain measures of economic, social and environmental responses of public according to sustainable development. Chosen indicator for general public should reflect integrated response of economy, society and environment together.

Table 8. Indicators of sustainable development for general public

	level of awareness	
INDICATOR	low UNFAVORABLE	High FAVORABLE (target value)
INDICATOR 1		

Source: Own consideration.

Indicators of sustainable development for general public and the results of their values, usually don't reflect direct improvements on environmental condition, however they indicate first positive reactions of public regarding sustainable development and the level of public awareness.

The Strategy for Sustainable Development of the City has not been yet prepared. After the general indicators are selected, then we can derive the indicators for individual departments and fields like open public spaces. However the anticipation of selected indicators for general public was done. For assessment of adequacy, the method of fourteen questions was used, suggested by Sustainable Measures expert group (Sustainable Measures, 2001). The chosen indicators

followed the Objectives in open public space design defined by experts under the guidance of Prof. Gabrijelčič (Javni prostori kot ogrodje mesta in drugih naselij v MOL, 2000, p.10).

Table 9. Proposed Indicators for General Public in the City of Ljubljana.

Indicator 1: Number of cars of chosen avenue
Indicator 2: Number of passengers on chosen line of public transportation
Indicator 3: Number of bicycles on chosen crossing road or point
Indicator 4: Amount of waste from households per person
Indicator 5: Percentage of separate waste collection
Indicator 6: Amount of green open public spaces

question	indicator 1	indicator 2	indicator 3	indicator 4	indicator 5	indicator 6
Does the indicator address the carrying capacity of the natural resources -- renewable and non-renewable, local and nonlocal -- that the community relies on?	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Does the indicator address the carrying capacity of the ecosystem services upon which the community relies, whether local, global, or from distant sources?	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Does the indicator address the carrying capacity of aesthetic qualities -- the beauty and life-affirming qualities of nature -- that are important to the community?	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Does the indicator address the carrying capacity of the community's human capital -- the skills, abilities, health and education of people in the community?.	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Does the indicator address the carrying capacity of a community's social capital -- the connections between people in a community: the relationships of friends, families, neighbourhoods, social groups, businesses, governments and their ability to co-operate, work together and interact in positive, meaningful ways?	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Does the indicator address the carrying capacity of a community's built capital -- the human-made materials	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*

(buildings, parks, playgrounds, infrastructure, and information) that are needed for quality of life and the community's ability to maintain and enhance those materials with existing resources?						
Does the indicator provide a long-term view of the community?	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Does the indicator address the issue of economic, social or biological diversity in the community?	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Does the question address the issue of equity or fairness -- either between current community residents (intra-generational equity) or between current and future residents (inter-generational equity)?	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Is the indicator understandable to and useable by its intended audience?	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Does the indicator measure a link between economy and environment?	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Does the indicator measure a link between environment and society?	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Does the indicator measure a link between society and economy?	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Does the indicator measure sustainability that is at the expense of another community or at the expense of global sustainability?	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*

Source: own consideration

2.4. Open public spaces

2.4.1. Definition

According to Stanič (manuscript, 2001) the term public spaces implies areas accessible to all, irrespectively of function, scale or programme; public spaces with the attribute of public property are areas with either general or limited access (the port, industrial areas, nature reserve).

The term public implies in the general sense, the possibilities, potential and/or existing presence of individuals and groups in a given built or open area, as well as the space where the presence of people is a constituent and necessary element or feature.

The term urban public space implies existing, planned or rehabilitated programmes, functions or technical facilities enabling safe and experientially stimulating places in and around the urbanised area.

They are all outdoor public accessible places in towns and cities where is present mutual interaction between individuals and groups on "neutral" common place, regardless of ownership and mainly during private-public-private communication. Open public spaces are mostly in the ownership of the city (communal spaces), but also private areas, publicly open and accessible (in front of shopping centres, business centres and similar).

Urban open places are, according to architects, landscape architects and other professionals in physical space design and management, (Urban Open spaces, 1981, p.129.) more than parks, plazas, and playgrounds. They are also streets, waterfronts, rooftops and all communal outdoor spaces. The question is how they affect us, and how to maintain, protect and renovate to win the best living public standard and according to this how to manage activities to achieve that. The collective perception of cities also depends largely on open spaces (system and design). The collective perception and identification of citizens depend largely on open public spaces. Lawrence Halprin (Urban Open spaces, 1981, p.4.) claim that the City is not so much a construction as it is a landscape of open spaces. It is a collection of images and sequences through which we move and live urban lives. "Each city in its landscape habitat establishes an ecological and cultural environment unique to itself - part natural, part manmade, artefact and archetypal." The great cities according to Halprin are those that develop the attributes of self-identification with their people. "Some cities develop incredibly profound relationships with the people who live in them. Their native landscape, the location of each of these cities, their natural habitats, the choreograph of internal open spaces, the organic qualities of their growth and change within the landscape, their images from afar - seen across the plains or from the air shimmering in the desert - the silhouette of their domes, towers and bridges, their skylines, all these invest our urban lives in these cities with a richness of creativity, and we experience a sense of intimate belonging, a fantasy of self identification."

The fact is that the mental map or image in the heads of individual citizen is compound of dominant buildings and mostly open public spaces; streets and squares and parks that they use in theirs everyday. The shape of open public spaces in cities should reflect the balance between people in the city, built environment, and native landscape.

At the beginning of settlements urban open spaces were used for community meetings whether religious, commercial, or governmental. Mostly the same places were used for different occasions. Later on in the cities of 4000 years ago (Middle East /America, Far East/Europe?) we already find temple squares separated from market squares. The temple square was walled off from the city while the market square wasn't. The market plaza was not so straight with boundaries and they melted into urban structure along commercial streets. In The Historical development of Urban Open Spaces, by Dora Polk Crouch (Urban open spaces, 1981, p.7.) is shown that Greek's urban open spaces reflected the views of man's place in reality and they were much more complicated than views revealed by Mesopotamian cities. The diversity of urban open spaces and neighbouring areas with working and living quarters made a richer common life possible. The Romans introduced three new possibilities for urban open spaces. First they introduced an outdoor but fully enclosed room. The idea was to build the rectangular spaces surrounded by long rows of columns and behind them offices, markets, temples or other buildings, all subordinated to a centrally oriented open public space. The second "innovation" was the street design. Again they did it with long rows of columns along important and widened streets. At the intersections and closures of these streets they introduced a new kind of street furniture, the triumphal arch. Thirdly they introduced the common recreational open space. Because of the increasing available leisure time they built theatres, stadiums, amphitheatres and baths in the city. Christianity after the 5th century ended such theatres and amphitheatres, and economic and military necessities put an end to the chariot and horse races of the stadium. After the collapse of the Roman Empire, Mediterranean towns retained some Roman features as urban open spaces in the centre of town. Northern European settlements remained mostly rural and the urban life started to revive after the year 1100. There were tensions and adjustments of public spaces between religion, market and governmental activities. Later on in the history of open public spaces the Renaissance with its ideal city and its regulation of plazas demonstrated the new phase in urban design of open public spaces. In the 16th century the Venetian's built the library opposite the Doge's palace and with this balanced intervention defined the Saint Mark's Plaza. Over the next two centuries the Piazza and Piazzetta were formalised with arcades on the edges. Industrial revolution and the decades around 1800 introduced the intensive growth of cities while population densities increased. In that period open public spaces, as spaces for leisure activities were pushed to the edge of the societie interest. At the end of the 19th century and

beginning of 20th century, neo-classicism during the imperial colonialism introduced many parks and squares which are still in use now. Modernism brings new meaning to open public spaces, with importance being given to technology and functionality of big open public spaces between build structure, important for lighting, fresh air and other necessary physiological necessities. Postmodernism and later trends are returning from denying of existing structures past and ideals. Again we are facing a new search for balance between the built and natural environment (human and ecosystem).

2.4.2. Open public spaces in Ljubljana

Open public spaces in the City of Ljubljana represent the skeleton of the city. In the expertise about open public spaces for the new master plane for Ljubljana the review of open spaces is presented clearly. The expertise was done under the guidance of Prof. Gabrijelčič, (Javni prostori kot ogrodje mesta in drugih naselij v MOL, 27. November 2000). In the eighties a branch of the urban planning and design profession, because of a feeling of helplessness to establish and design innovative open public spaces, turned back to historic urban patterns. The effort to ensure social interactions on open public spaces through reproduction of historical forms turned out to be wrong. However the period somehow rediscovered open public spaces and indirectly influenced the revitalisation of streets and squares. In the last 20 years a series of street redesigns were implemented with appropriate urban and traffic program. Redesigns were done mostly in the old city centre and with renovation projects upgraded the urban program, achieved new, more profound images with more appropriate traffic arrangements. The old city centre totally changed its impression, character, and meaning in the broader context of the city. Renovated facades, pavements, new street furniture, boutique shops, shop windows, pubs etc., attracted citizens to meet, shop, entertain, and feel this part of the city as the cultural, historical, emotional and social centre of Ljubljana. The expert team, under the guidance of Prof. Gabrijelčič, perceived that the importance of sustainable development of the city is increasing which resulte in traffic policy and positive interventions on open public spaces. The main goal of the expertise is to determine core guidelines for establishing a system (network) of open public spaces which will generate social interactions among citizens. All activities should increase the quality of life in the city. Regardless of individualisation trends among people in the modern society, the expert group built on the presumption, that public life on the streets is still one of the most important values in the evaluation of quality of life in urban environment. Accordingly it is very important that we

preserve the idea of public squares with different purposes. The expert group tried to establish the hierarchy of open public spaces from regional level (main square), city level (old city centre), to quarter (neighbourhood) level for the needs of local residents.

If we simplify the meaning of open public spaces then they basically provide the physical communication (street) between private spaces. All other forms are actually the extensions and different enlargements of the streets and according to type they differ to their design. According to prof. Gabrijelčič urban open public space is defined by two basic elements; street and square. Conception of open public spaces is shown through the interrelationship between sides of square closed by buildings, mostly with public ground floors.

Regardless of being the old city centre, however even the city centre is not immune to misuse. Open public spaces are mostly covered with motor vehicles, which are parked on squares, with or without legal permission. The street is no longer the place of gathering, but rather a distributor of traffic flows. Street design is a follow-up of outdated traffic functions, which didn't allow integration of urban programs with open public spaces. The expert group suggested several general objectives for open public spaces.

Figure 12. Objectives in open public space design.

Design of the system of open public spaces, with protection of existing qualities entails:

- Establishing a system of connected public spaces by conservation of existing ones and revitalising historical squares, as well as by activating potentials and designing completely new public spaces;
- Preventing further growth of car traffic that also generates stationary traffic and is the main consumer of public space, causes problems with accessibility, passage, pollutes the environment with exhaust fumes, noise etc.;
- Enforcing public transport that occupies much less land, is environment and people friendly and opens possibilities for integrating public spaces with surrounding urban programmes;
- Expanding the programme of rehabilitation of public spaces from the old city core to the wider central part of the city (e.g. green axis Tivoli-Vegova, railway station-city centre (along Kolodvorska street), Fabiani's axis – Miklošičeva, central corso – Slovenska street, square in

front of the railway station – Masarykova street, central national square – wider area of the Republic square etc.);

- Defining the key actions upon the urban space that will condition improvements to image and functioning of the city and defining guidelines for redesigning these actions, whereby it is essential to ensure balance between urban development and traffic programmes, socialisation and enriching the street space programmes, also by focusing attention on the network of water causeways and especially railway corridors;
- Ensuring excellent connectivity within the street network, thus improving access and passage, orientation and providing more possible routes.

Source: Gabrijelčič, P. - Javni prostori – 2000

2.5. Conclusion

It seams that in some issues sustainable development barriers are still similar to barriers at the conferences in Stockholm (1972) or in Rio de Janeiro (1992). The information and awareness about environmental issues and their close connection with human health and quality of life is still inadequate. According to Umanotera, (Agenda 21 for Slovenia, 1995, p.9), there are many obstacles for sustainable development and one of them is the relatively low level of public awareness. The general short-term goal of Agenda 21 for Slovenia (A Contribution of Non-Governmental organisations) is still topical and it is the promotion of sustainable development, motivation and preparation of Agendas 21 for Slovenia and Slovenian municipalities.

Sustainable development must be a common decision and open public spaces are one of the most democratic places for building culture of dialogue. Culture of dialogue is essential for the future changes toward sustainable development. Open public spaces could play a vital role in raising of sustainable culture (information, awareness, dialogue, co-operation, participation, lifestyle).

Indicators are important compass in the process of orientation and feed-back information. Some indicators for the general public were proposed, however they could not be selected before overall indicators for the city sustainable development were selected. The City administration is in the process of preparing the Strategy for Sustainable Development of the City of Ljubljana. This has to be set first and adopted by the City Council. After the general direction is legitimised and key indicators selected, then we can derive the indicators for individual departments and

fields (open public spaces). Later on we can adapt the proposed indicators and follow development more precisely. Management of open public spaces is just a part of a whole development of the city and it should follow the strategy (efforts) of the whole city through four steps:

Figure 13. From general to field indicators.

- -verification of city strategy for Sustainable Development (vision)
- -selection of key indicators
- -selection of indicators for the general public, considering general key indicators (OPS)
- -assignment of target values to selected indicators for the general public (OPS)

Source: Own consideration

Sustainable development and progress in the process of changes regarding open public spaces should be measured by indicators, because the indicators are the source of orientation towards our goal.

This Master Thesis was focused on the role of open public spaces in sustainable development efforts. The centre of concern was to provide good service (effective management) in open public spaces to increase the quality of life in towns and cities. The quality of life closely depend to condition of the ecosystem and the thesis tried to open the common place for sustainable development dialogue on open public spaces. However support for public awareness and dialogue does not mean that the City administration will run this dialogue. This is the task of civic society and its organisations. However adequate political culture and overall social climate are essential to stimulate creative and critical thinking.

Sustainable development of open public spaces refers to the quality of urban life and the measures within of the integrated management of open public spaces through adequate organisational structure. Open public spaces should again become our common place of awareness.

3. CHAPTER 3. CITY OF LJUBLJANA AND CURRENT ORGANISATION STRUCTURE OF OPEN PUBLIC SPACE MANAGEMENT

3.1. Basic mechanisms

3.1.1. City facts

Ljubljana, situated at the heart of the Republic of Slovenia, having an approximate population of 300,000 and spread in an area of 27.175 ha (hectare), is the capital city (Statistični letopis Ljubljane, 1998) of the country. The city is spread along the seven main roads, which connects the centre of the city from outside. It gives the city a star-like shape. It is one of the most beautiful capitals in the world, situated in the lap of the nature, green, beautiful and calm. The city is surrounded by hills all around and the river Ljubljanica flows in the centre of the city-dividing it between the old and the new parts of the town. Three Bridges, designed by architect Jože Plečnik connect the two parts of the city. Two sides of the town present a spectacular architectural contrast between the old and the new, between houses, lanes and layouts. The three Bridges is the centre of the town and one of tourist attractions in centre.

Ljubljana is located in the so-called Ljubljana Gate. It is called Ljubljana Gate, as this has been the transit route between central Europe and the Adriatic since time immemorial. There are several stories, true and mythological regarding Ljubljana, as this was the trade and migration route. Being in the trade route, Ljubljana has always been affected and influenced by any movements in Europe. Its culture and the temperament of its inhabitants are a combination of the Central European and Mediterranean. We can say that Ljubljana represents the true melting grounds of the European and Mediterranean culture.

Transport and Communication

Ljubljana is at the intersection of the major traffic routes of the northern and western Europe to the Mediterranean states, the Balkan states and the Middle East. In order to facilitate and improve the transportation system and to create faster links between cities, Slovenia is constructing a national motorway network called "Slovenian Motorway Cross". This will connect the city round-motorway and the primary road network to Vienna, Geneva, Munich, Belgrade, Athens and Istanbul.

Ljubljana has well-developed railway sistem, which connects the city of Ljubljana with the major cities of Europe. The rail routes have direct connections with Austria, Italy, Hungry, Croatia and to the Port of Koper, located at the Adriatic coast.

Ljubljana International Airport is located 20 kilometres outside the main city and is well connected by a motorway.

Ljubljana grew at the cross-section of the international trade routes between the northern and Western Europe on one side, and the Mediterranean and the Balkans on the other side. Since ancient times its economic structure has been quite heterogeneous. This is one of the reasons, that makes Ljubljana easy to adapt to the rapidly changing environment of the world economy.

Ljubljana is one of the most important economic centres of Slovenia domestically and internationally. It contributes about 23% to the Gross National Product of Slovenia. The quality and the level of development of the catering and turist industry is one of the best in the region. Commerce represents the most important economic activity of Ljubljana. Ljubljana is the centre of a series of trade fairs, like the Alpe-Adria in April, Wine in August, Gardening in September, Electronics in October etc. You can find the World Trade Centre and Ljubljanska Banka (Bank of Ljubljana) in the city. Ljubljanska banka has branches in the major cities of the world, like New York, London, Paris, Vienna and Frankfurt, and ranks among the top 500 banks in the World.

Social And Cultural Environment

Ljubljana, being the capital of Slovenia, is also the cultural centre of the country and as such attracts a number of foreign tourists. The average number of tourists in Ljubljana has been increasing at the rate of 5% per annum. Ljubljana has been proud of its culture and particularly the literary works. In matters of dance drama, opera and ballet it is very rich and very popular with the population. There are museums, theatres, opera houses, National theatre and a number of cultural institutions promoting art and cultural traditions of the country. The major important international cultural events of Ljubljana are the International Biennial of Graphics, the International Summer Festival and the International Jazz Festival. The opening of the new Cankarjev Dom Cultural and Congress Centre has given a new dimension to the cultural life of the city.

Educational and Research Institution

Ljubljana is also the seat of high education in Slovenia. The Ljubljana University, having 11 faculties and three academies of arts, with a total strength of approximately more than 20,000 students is well known in many of the countries in the world. In addition to this there are about 40 institutes engaged in science and technical research. It is proud of some of the world famous institutes like Jožef Stefan Institute, the Centre for International Co-operation and Development, the UNESCO centre for Chemical Studies etc.

3.1.2. Brief Urban History

The settlement has been there since the prehistoric times. The history connected to urban structure was described in Habitat II (*Habitat II Slovenia*, 1997). The settlement grew around castle, which was a fort earlier. The first proper town, which developed between the castle and the Rožnik, was basically the Roman camp of Emona in the first century AD. It remained till the end of the fifth century of which little remains as on today. The settlement has witnessed a number of attacks by different armies, as it happened to be on the crossroads of the routes linking north to the south. It has seen many distractions and again it has sprung up. Emona, which controlled it from the first century to the fifth century, was defeated and most of the town was destroyed.

It was somewhere in the last part of the AD 580 that the Slavs came and rebuilt the city. The Slavs are the ancestors of today's Slovenes. The city in the Middle Ages was confined between the river and the castle hill. The written records the town dates back from the year 1144. With the settling of the Slavs and once again bustling of the town medieval Ljubljana became an important trading and ecclesiastical centre. In the beginning the 16th century the town was again destroyed but this time by an earthquake. In the 17th and 18th century the town was rebuilt in Baroque style.

During the period of Renaissance a number of improvements and changes were brought to the fortification of the town. Baroque was the most powerful influence on the development of the town. It clearly reflected in the palaces of the noblemen, the houses of the bourgeoisie and the churches. It was the 19th century, which saw the gradual urbanisation of the area between the old walled town and Rožnik hill. The end of 19th century saw another powerful earthquake, after which the city saw a huge expansion and urbanisation.

Planning of Physical Development after the 1895 Earthquake

The earthquake of 1895 damaged the majority of the city building. This provided the government with an opportunity to introduce the regulated planning of development in Ljubljana. The government in order to plan the city and develop the same in a systematic way engaged Max Fabiani, a famous Viennese architect of Slovene descent to plan for the development of Ljubljana.

Fabiani in his planning for the development of the city has tried to blend the modern planning principles of urban development with that of the traditional city characteristics. Fabiani's plan could be implemented only into a part of the city. Due to the governments' policy and changed circumstances the important ideas of Fabiani could not be implemented. His most important ideas were buried in the bureaucratic hassles.

After Fabiani came Jože Plečnik who made the urban development plan for Ljubljana. It was almost thirty years after Fabiani that a systematic approach was planned for the development of the city. He envisaged Ljubljana as a concentric city, spreading radically outwards from the old historic city. Plečnik like Fabiani has given a ring road outside the city centre. Like earlier Plečnik's main elements of plan never materialised including the ring road, but he was able to succeed in designing a few urban ambient in the old core of the city centre, which are still the models of the micro-ambiental design of cities.

During the two world wars the city grew rapidly and it expanded around the access roads to the centre. Historically being the centre of economic activities in the old Yugoslavia it became a favoured site for the development of industries. This caused a huge migration from other parts of Yugoslavia heavily pressurising the urban settlement of Ljubljana. The need for more houses rose. In 1955 there were 16,000 homeless families. In the sixties and seventies Ljubljana saw the construction of "housing neighbourhoods" which were made up of apartment blocks housing between 10,000 and 15,000 residents. After the World War Two the city tried to control the development of the city with two master plans. General Urban Plan was adopted in 1965 and Ljubljana 2000, prepared 20 years later. By the year 2000 Ljubljana 2000 master plan expected 400.000 inhabitants. After the in dependence of Slovenia in 1991 many problems connected to transition period emerged. Many efforts were put into searching of new regulation methods under the conditions of market mechanisms. However the capital influence prevail among rigid master plan Ljubljana 2000, which was changed several times. City of Ljubljana is now preparing a new master plan.

3.1.3. Legal Status

Municipalities were constituted according to Local Community law from 1993 (Zakon o lokalni samoupravi. Uradni list RS, 72/93), and they had replaced previous former organisation of municipalities. According to that Law, the Municipalities act as the main authority for the local community. In Slovenia there are two types of Municipalities; Municipalities and City Municipalities, however the same Community Law applies to both structures (with minimal differences). The Municipality independently manages its own affairs and implements tasks, which have been granted to it. The State Law and the Constitutional framework have stated this. In 1998 there were further amendments to the Community Law (Spremembe in dopolnitve zakona o lokalni samoupravi, Uradni list, 74/98), whereby the Mayor was granted more power. Furthermore, the State handed over to the City Municipality a number of different tasks concerning the development of cities to be implemented on the local basis. The most important tasks, related to this thesis, which the City Municipality had inherited from the State, are the following:

-Management of local, public transport
-Decision making concerning the opening and closing hours of local pubs and restaurants
-Urban planning and construction management

City of Ljubljana (City municipality) defined its tasks through bodies in the Statute of the city (Statut MOL. Uradni list RS, 26/01) and Decree concerning the structure of the organisation City council (Odlok o organizaciji in delovnem področju MU MOL. Uradni list RS, 56/00).
The City Council is the highest decision making body of the City Municipality. The City Council is responsible for the following:
-It adopts legal statute, degrees and other legal acts of the City Municipality
-It adopts special plans and special regulatory conditions and other plans according to the development of the City Municipality
-It determines the structure of City administration according to Mayors proposal
-It adopts the budget according to Mayors proposal

The City Council can constitute Commissions and Committees, which discuss and evaluate the tasks in the jurisdiction of the City Council. They give the City Council their professional opinions and suggestions concerning the decision-making. The Committees in structure as such, most often resemble the City administration Departmental structure, and thus they form their opinions on the basis of the documentation prepared by the City administration and its Departments.

The Mayor

The Mayor is a legal representative of the Municipality. She/he also represents the City Council, and is responsible for announcing and chairing the City Council, without having a right to vote. She/he proposes legal acts, decrees and the budget to be adopted by the City Council, and from the jurisdiction of the City Council. The Mayor also takes care of the implementation of the decisions adopted by the City Council.

City administration

The Head of the City administration is a Director, who answers to the Mayor. Under the supervision of the Director, there are a number of departments responsible for management of local administration.

Supervisory Board

Supervisory Board is the highest auditing body, responsible for auditing the management of pubic funds (public spending) by the City Municipality.

3.2. Finding key factors

3.2.1. City administration

The City administration is headed by a director. The City administration is defined in the Decree concerning the organisation structure and jurisdiction (Odlok o organizaciji in delavnem področju MU MOL. Uradni list RS, 56/00). In the Decree the bodies of the administration, their scope and internal organisation, as well as other questions connected to the functioning of the City administration are defined. Within the bodies of the administration, the sub-structures are designed according to designated tasks. The bodies and their sub-structures work independently in the framework of the rights and duties of the City Municipality. According to laws and other

regulations they independently implement administrative, technical, organisational, development and other tasks, designated to them by the Decree concerning the structure of the organisation.

Organisation and scope of the City administration

The administration is designed to ensure professional and effective implementation of its tasks. The City administration is also responsible for co-ordinating and monitoring the implementation of tasks. The City administration ensures that co-operation with the outside official bodies and institutions is effective.

According to the Decree (Article 6) the City administration bodies are as follows (Odlok o organizaciji in delavnem področju MU MOL. Uradni list RS, 56/00):

Departments:

- Department of Finance

Is responsible for preparation and implementation of the City Council budget. The Department is responsible for a number of tasks, such as accounting, monitoring public spending, and advice concerning public needs and public spending according to the Public Finance Law.

- Department for legal and general affairs and human resources management

Is mainly responsible to ensure that the City Municipality works in line with all the legal procedures as prescribed by the Constitution and other laws and acts. It is also functional in the preparation of judicial affairs involving the Municipality, it implements tasks concerning human resources management (management structure and salaries adjustment) and it is responsible for following up citizens opinions, advise and complaints.

- Department for local self-management administration

Is responsible for implementation of local self-management administration and for local citizens rights within the decision making process.

- Department for Education and Sport

The department takes care of a number of aspects concerning primary and secondary education, concerning cultural (music) and sport education, as well as youth politics and reduction of drug abuse.

- Department for Culture and Research

It implements administrative, professional and development tasks concerning culture and research. It is also responsible for cultural heritage.

- Department for Health and Social Security

The department is responsible for administration, professional practice and preservation of health on the primary and secondary level.

- Department for Economy and Tourism (OGDT)

The responsibility of the department is to analyse economic flows and movements in the city. Furthermore, the department promotes and accelerates the economic development in the city and surrounding countryside.

- Department for Public Enterprises and Transport (OGJSP)

The responsibilities of the department are laid down in Article 14 (Ur. l. Štv.53/00), where sixteen different responsibilities are described. The following ones are the most important:

Preparation of development plans and programming for public enterprises and transport

Preparation of standardisation of pubic enterprise and transport

Maintenance of the cadastre (land register) of infrastructure and property of public enterprises

Maintenance of the land registry of public good concerning public enterprises

Preparation of local waste management programme and its implementation

- Department for Urban Planning (OU)

The responsibilities of the department are laid down in Article 15 (Ur.l. Štv.53/00). Here different responsibilities are described, however the following ones are the most important:

Preparation of special plans for urban areas and the countryside, as well as the enforcement of their legal basis

- Department for Land Management (OGZ)

It is responsible for implementation of the local tasks concerning the land policy of the City Municipality.

- Department for Housing

Is responsible for the property market (excluding land property) owned by the Municipality.

- Department for Public Security and Safety (Civil Defence) (OZR)

Department for public security and safety (civil defence)

Prepares systems for security and rescue operations and is responsible for their implementation

- Inspection Office (INSP)

Is responsible for auditing procedures and management of the City Municipality as described in Article 20 (Ur.l. Štv.53/00). It ensures that procedures are followed according to the rules and regulations as laid down by the law and implemented by the City Municipality. The Office also

ensures that environment protection is implemented according to the Law concerning environment protection within the territory of the City Municipality.

- Department for Environment Protection (ZVO)

The responsibilities of the department are laid down in Article 21 (Ur.l. Štv.53/00). The Article 21 describes different responsibilities, however the following ones are the most important:
Preparation and implementation of the local environment protection strategy

Other Bodies are the Mayor's Cabinet, Information Technology Centre, Office for International Affairs and Office for City Council logistics.

Management of open public spaces in the City administration is basically a combination of planning, implementation and control (inspection). The present practice and organisation approach is mechanistic with a vertical decision making system and corresponding co-ordination. The director of the City administration co-ordinates all activities of the City administration as well as activities related to open public spaces.

Key factors are within planning implementation and control. Planning is the priority of the Department of Urban Planning. Implementation, maintenance and management however are with the Department of Pubic Enterprises and Traffic, with collaboration from several public enterprises and other companies. The Inspection Office exercises control. Besides those three departments, also the Department for Environment Protection, Land Management, Economy and Tourism and Security and Safety (Civil Defence) are important as a part of broader open public space planning.

Figure 14. Key factors in current organisational structure

Source: Odlok o organizaciji in delovnem področju Mestne uprave Mestne občine Ljubljana. Uradni list Republike Slovenije, 56/00 and own consideration.

In 1999 a SWOT workshop about development strategies of departments for the City administration was prepared. The workshop was one in the series of preparations for the new Sustainable Development Strategy. One of the remarks and the observations was that the "City administrative is fractured, and incapable of developing a creative atmosphere as a precondition for work on some projects." (Strategija trajnostnega razvoja mesta Ljubljana, Razvojne strategije oddelkov MOL, 1999, p.35.) Regarding this remark, co-ordination is a general problem in City administration and not only a problem of open public space management.

3.2.2. Public Enterprises and Companies

Public Enterprises and other companies are firms, which implement the maintenance and layout (design and construction) of open public spaces. These companies implement most of their activities on open public spaces. Public utility service activities are according to Law obligatory or non-obligatory (Zakon o gospodarskih javnih službah. Uradni list RS, 32/93).

The Department of Pubic Enterprises and Traffic is co-ordinator of implementation activities of public enterprises and other companies. It has executive power to order and permit activities on open public spaces. Public utility companies gathered in the Ljubljana Holding Company, Ljubljana Infrastructure Company and Public Utility Company for Street Lighting are the most important partners of City administration in the field of open public spaces.

Public enterprises and other companies are:

- A-Public utility companies gathered in Ljubljana Holding Company (Holding mesta Ljubljane)
- B- Ljubljana Infrastructure Company (Komunalno podjetje Ljubljana)
- C-Public utility company for Street Lighting
- D-Other profit companies (firms)

A-Ljubljana Holding Company (Holding mesta Ljubljana-H)

The Ljubljana Holding Company limited liability Company incorporates 7 dependent companies responsible for performing public utility services in the city of Ljubljana. They are as follows (Annual report Holding mesta Ljubljane, 1997):

- Energy supply public utility company (JP Energetika Ljubljana),
- Waterworks and sewage public utility company (JP Vodovod – Kanalizacija),
- Ljubljana public transport public utility company (JP Ljubljanski potniški promet),
- Ljubljana markets public utility company (JP Ljubljanske tržnice),
- Graveyard public utility company (JP Žale),
- Garbage collection public utility company (JP Snaga) and
- Parking public utility company (JP Parkirišča).

The Ljubljana City Municipality and 8 municipalities in the greater municipal area own the Ljubljana Holding Company. These municipalities are considered legal successors of the City of Ljubljana, which founded the Ljubljana Holding Company with 100% of founding capital share. Registration of the Ljubljana Holding Company into the register of commercial companies was confirmed by the Ljubljana High Court of Justice in 1997.

Energy supply Public Utility Company (JP Energetika)

The Energy supply Public Utility Company provides natural gas and district heating to residents of the City of Ljubljana. Natural gas is supplied to the company through pressure reduction stations from the high – pressure gas network of Geoplin Ljubljana, the main Slovenian natural gas distributor.

Besides natural gas supply, Energetika is responsible for district heating and facilitating steam supply. The energy for the hot water network within the district heating system is supplied from a

combined heat and power plant, TE-TO Moste, primary energy source which – as a company – belongs to Elektrogospodarstvo Slovenije. The other source, used to cover peak loads, is Šiška thermal power plant owned by Energetika Ljubljana. Heat is distributed to consumers through 1.727 indirect and 161 direct heat substations. Energetika also supplies users in the vicinity of both energy sources with steam.

Waterworks - sewage Public Utility Company (JP Vodovod – Kanalizacija)

The Vodovod – Kanalizacija Public Utility Company provides pure drinking water to approximately 300.000 residents of the Ljubljana City Municipality and, at the same time, takes care of wastewater discharge and treatment. Most consumers of these services are supplied by 2 central municipal systems. Drinking water for the wider city area is supplied by six local systems, while wastewater discharge and treatment are organised in 11 local systems. Residents of Ljubljana consume approximately 70.000 m^3 of water per day.

So far, waste waters have been treated only mechanically, however the City Council of the Ljubljana City Municipality authorised the Vodovod – Kanalizacija company to act as an investor of further construction, i.e. implementation of the 2^{nd} phase of the treatment plant. For this purpose, amendments to the investment program were made and documentation for a tender was prepared.

Ljubljanski public transport Public Utility Company (JP Ljubljanski potniški promet)

The principal activity of the Ljubljana potniški promet public utility Company is urban and suburban transportation of passengers. Besides it carries out maintenance, servicing and renovation of vehicles, technical inspections of vehicles, standardisation, validation, and authorised servicing of individual producers and equipment. Public transportation is a public utility with the intent to cover basic existential transport needs of residents of Ljubljana and its immediate surroundings.

Ljubljana market public utility company (JP Ljubljanske tržnice)

Ljubljanske tržnice public utility company performs the following activities: management of markets, renting of immovable and movable property, retail sales in other non-specialised stores. It also provides warehousing, public hygiene and other services.

The company manages five markets: Center, Šiška, Moste, Bežigrad and Žale. Total floor space of markets is 9.821 m^2 of open area and 4.617 m^2 of covered area. Products are sold mostly to

residents of the Ljubljana City Municipality, educational institutions, hospitals and other large consumers.

Graveyard Public Utility Company (JP Žale)

The company was established in 1913, and started to operate on August 1, 1914. Due to growing demand, funeral chapels – the so-called Plečnik′s Žale – were constructed by the end of the thirties, but were abandoned in 1979. In 1992, they were renovated by the city authorities and put in to function again.

Today, the Žale public utility Company maintains all larger cemeteries in the city area, as well as a crematorium, which has been operating since 1978.

Garbage collection Public Utility Company (JP Snaga)

The basic activity of Snaga public utility company is performance of obligatory public utility services: collection, transportation and disposal of waste and cleaning of roads and other public areas. Collection, transportation and disposal of municipal waste are performed by the Snaga company in the area of the Ljubljana City Municipality and 7 municipalities in a wider Ljubljana area, while cleaning of roads and other public areas is performed only within the city limits of the Ljubljana City Municipality.

The Snaga utility company also manages public conveniences and – according to the Ljubljana City decree – performs bill posting in the area of the Ljubljana City Municipality.

In the framework of commercial activity, the company performs service activities with its fleet of vehicles, as well as for external users.

Parking Public Utility Company (JP Parkirišča)

Parkirišča public utility company manages public parking areas for cars and commercial vehicles, provides services of removing and storing irregularly parked and abandoned vehicles and organises small-scale sales and purchase of second hand cars at the car fair. The company manages parking lots on different sites within the city. According to locations of parking lots, different parking fees are designated.

B-Ljubljana Infrastructure Company (Komunalno podjetje Ljubljana-KPL)

The Infrastructure Enterprise Ljubljana is a stockholder company with six fields of activity. Individual scopes are structured in business units. Partly and according to Law (Zakon o

gospodarskih javnih službah. Uradni list RS, 32/93) they provide Public utility service activities connected to:

Maintaining of streets and squares

Cleaning and maintaining of open public spaces during winter

Maintaining of green open public spaces

Management of forests with park character

Besides providing public utility service the are also a market oriented company. According to their annual report (Letno poročilo delniške družbe KPL-Gradnje, Rast, Iženiring, d.d., 1999, p.4.) the City of Ljubljana owns 34,90% of shares.

C-Public utility company for Street Lighting (Javna Razsvetljava-JR) is a stockholder company. According to the Annual Report their organisational structure (JRS, Letno poročilo, 1999) is unified in one basic group. It provides complete service for streetlights system in the city including design, supervision, measurements and other technical service. City of Ljubljana owns 30% of shares.

D-Other profit companies (firms F)

These are generally private companies, which have obtained permission from the City of Ljubljana, City administration to provide economic activities or marketing on open public spaces. These companies are Outdoor advertising firms or Concessionaires for Street furniture.

The SWOT workshop about developmental strategies of departments of the City administration, prepared in Gozd Martuljek (Strategija trajnostnega razvoja mesta Ljubljana, Razvojne strategije oddelkov MOL, 1999, p.31.), was also interested in the description of some co-operational shortages regarding public transportation, public spaces, and constable service on open public spaces. According to the top manager of public utility company for public transportation, the Parkirišča Public Utility Company (manages public parking areas for cars), Ljubljanski potniški promet Public Utility Company (urban and suburban transportation of passengers) and Inspection Office (constable service), “until now never met, to solve common problems”. From this remark the effective co-ordination of all public utility companies is expected to be a big challenge. The

Department of Pubic Enterprises and Traffic, with collaboration from several public enterprises and other companies implements management of open public spaces.

3.2.3. Public and other Stakeholders

Public and other stakeholders

All changes in the city connected to physical planning and regulatory conditions of the settlements are publicly announced and citizens have the right to make remarks, which have to be reconsidered by City administration and its hired experts. (Zakon o urejanju naselij in drugih posegov v prostor. Uradni list SRS, 18/84, 37/85, 29/86, 43/89 in RS, 26/90, 18/93, 47/93, 71/93, 44/97.)

There is no interdepartmental body to allow participation of public regarding open public spaces. Within the Department for Urban Planning, the Committee for Street furniture was appointed. The commission is giving suggestions to the department about street furniture, and activities proposed on open public spaces. The members of commission are from City administration and from the public. The biggest weakness of the Committee is that decisions are taken only on the planning level. On implementation and control the Committee has almost no influence, regardless of its members being from other departments.

3.2.4. Practise in Germany

Decision-making structures – Example of horizontal integration

Decision making and organisational structure was well analysed and described by architect Dr. Mojca Šašek-Divjak (Šašek-Divjak, 1995, p.153.). Observing real decision-making structures for ecological planning and policy-making shows large complexity of the processes. It also shows the problem of separation of decision-powers on all levels and on the other side demands for autonomy of individual persons and different groups in the process. As an example of this problem from a developed country, I will present the organisational structure of the system for environmental protection in Germany.

On the Federal and state level different tasks for the environmental protection aren't concentrated on one federal or state ministry. They are spread between many different structures. Because of the divided competency, there are many problems concerning mutual co-ordination.

Under the level of the State governments, competencies for environmental protection are scattered among different state offices and lower state offices and have different organisational

structures from one state to another. There is a need and important task to co-ordinate those offices with state or federal governments.

To exchange ideas and other information and suggestions between state offices and representatives of different groups, there is a special Work group for environmental issues. They organise different discussions, like "environmental forums" on different topics that most of the social groups attend.

Administrational competence regarding environmental issues on Municipal level has in Germany crumbled. This is not good, because it is vital for environmental potential protection to consider it as an entity from the ecological burden point of view.

Municipal administrational tasks on the environmental issues could be divided into three groups:

- legal and partially planning tasks of the classical administering
- co-ordination tasks, that arise from burning ecological questions
- public, political tasks, that arise from the need for citizen's participation

City council and the municipality bureau for social affairs handle with the organisational tasks of the environmental protection. Old way of treating environmental protection as a cross-section task is still in use. And those environmental matters shouldn't be hands over to special bureau for environmental protection. And still today, environmental protection is treated as purely administrational task, and so the political point of view as the public discussion is neglected. There are some experiments with different organisational structures in German cities.

Examples of experiments with different organisational structures in German cities

Office for managing the environmental protection (part of the top management) is linked to a deputy mayor. These offices introduced relatively simple way of co-ordination. This method is similar to previous attempts for an "integrated city development". It has proved to be only partially successful.

Environmental protection as part of the Office for management affairs is constructed as a traditional managing approach. The biggest focus here is put to regulation and mainly to legal regulation of environmental issues. The usual consequence is bureaucratisation and latter commands and prohibitive measures. Eventually they cannot solve the core of the problem.

Administrative work units and project groups co-operate with other offices. They don't satisfy or aren't sufficient enough to master city's environmental problems, because they are not obligatory and they lack executive competence.

Special places for putting the comments of the citizens exist in most German cities. People can put their comments here regarding environmental and other issues. But this is only the first step to collect such information and it doesn't have proper effect, if there are no connections with the existing executive agencies.

Municipal environmental forum is a place, where there should be organised regular conversations between citizens and groups of citizens on one side and members of parliament and administration on the other side. These forums used to be linked to citizen's forums. But it has proved, that there were usually only experts who has left at the end, even if the issue should or would be expected to concern wider audience and have important political influence. But still, well-organised forums, that would attract wider audience, are still one of the most actual and wanted form of public participation.

Environmental commission should collect requests from the general public, prepare different advice's about organisation and teach the way that municipality works. They also prepare and interpret environmental problems for a discussion in the parliament. In that way, they prepare special reports and takes over some planning and co-ordination tasks. This commission tries to find compromises between administration on one and parliament and general public on the other side. The missing executive competence and power should be repatriated with a special agency, which is close to the powers of the municipal parliament (city council).

Figure 15. Proposed integrated model of organisational structure of the City of Wiesbaden regarding environmental protection

Source: Šašek-Divjak, M., Vpliv okolja na oblikovanje mest in naselij, Ljubljana-1995

3.3. Conclusion

The current organisational structure is mechanistic with a vertical decision making system and corresponding co-ordination. The Mayor manages policymaking. The activities are managed in separate sectors called departments. City administration with organisation form, in comparison with profit organisations, is close to business functional organisational form. Departments are implementing regulated tasks according to law. Planning is the priority of the Department of Urban Planning, environment protection of the Department for Environment Protection, traffic of the Department of Pubic Enterprises and Traffic, as well as maintenance and management with collaboration from several public enterprises and other companies. The Inspection Office carries out control. The current situation is that there is no body with the purpose of co-ordination in issues of open public spaces. All activities and responses in the field of open public spaces are insufficient because of the dynamic of interactions on open public spaces. Activities on open public spaces affect many departments and departments with their activities affect open public spaces. Open public spaces are the specific field. They are the most representative part of the city. They carry common characteristics of the city and the citizens.

The current overall organisational structure is apparently sufficient for all activities, i.e. the City administration departments are divided according to their jurisdiction. However, disadvantages of the current organisational structure demand necessary improvement to open public space management. Then again, these improvements should not interfere with obligatory activities or jurisdictions. Therefore our search was focused on a pattern of organisational structure which could fit into the mechanistic structure. The mechanistic organisational structure of the City administrations is routine. The new pattern should avoid negative effects on the existing basic mechanistic structure. Existing mechanistic organisational structure should function undisturbed.

4. CHAPTER 4. INTEGRATED OPEN PUBLIC SPACE MANAGEMENT AND ORGANISATIONAL STRUCTURE

4.1. Integrated approach

The scope is limited on open public spaces in the City of Ljubljana. Integrated approach demand co-operation between all key factors, connected to open public spaces management and use. To solve this problem we must link together Departments, Public enterprises, Companies and mostly the public. Good co-operation between different factors demands proper and efficient organisational structure. Open public spaces in Ljubljana are one of the specific parts of the City. Many departments are partly involved or connected to activities on open public spaces. Permanent interaction and harmonisation of conflicting interests of different activities is needed. For integrated approach two options of organisational structure were assessed, first a co-ordination Group between existing departments and second, a New Department.

4.2. Internal environment assessment

Strengths & Weaknesses assessment

For Internal environment assessment the Strengths and Weaknesses assessment was used, to determine the choice between a new department within the City administration or a co-ordination group for interdepartmental co-operation between departments within the City administration.

- new department
- co-ordination group for interdepartmental co-operation between departments

Strengths and Weaknesses assessment is a part of comprehensive analysis for companies. Strengths, Weaknesses, Opportunities, and threats (SWOT) assessment is a part of strategic management process. It defines the company's strategic problems and already contains the components of the future strategy. However the Strength & Weaknesses assessment was not a business assessment of the whole company, but rather an assessment of strengths and weaknesses of two options. The assessment helped to recognise an organisation form for dealing with specific segments inside the organisational structure of the City administration.

The Strength and weaknesses assessment was done to define only internal factors. The purpose was to find more effective organisational properties and improve integrated approach within the

existing organisation (City administration). The assessment of desirable organisational properties was done by global subjective assessment. Assessment showed the contribution of organisational form to desirable organisational properties.

Besides the costs of minimisation in introducing the new organisational form inside the City administration the goals of the thesis were used to select desirable properties (contribution of organisational form to selected properties). Sustainable development of open public spaces as the goal of this thesis, refers to the quality of urban life and the measures within the integrated management of open public spaces through the adequate organisational structure. To implement measures and changes in the future it is necessary to assure broad consensus and understanding, information, education and for necessary steps toward integrated approach participation.

Co-ordination Group versus new Department

The idea was to join the planning, implementation and control activities connected to open public spaces. One option was the interdepartmental co-ordination group and another option was a new department in City administration.

Table 10. Assessment of desirable organisational properties

CO-ORDINATION GROUP	Contribution	PROPERTY	Contribution	NEW DEPARTMENT
Small costs	large	Costs of implementation	low	Relative large cost for implementation
All the finance through existing Departments	low	Financial resources	medium	Department resources
Existing personnel with skills	high	Human resource management	low	New employees and introduction period
Resources of entire municipal structure	large	Promotion of activities	medium	Depend on own department resources

Assumption of a good motivation	large	Information sharing	low	Isolated in department
Assumption of good motivation	medium	Knowledge sharing	Medium to large	Assumption of high level of experts employed
Co-operation include al key departments	large	Co-operation between all key factors	medium	Major factors within the new department
Project management-organic	high	Organisational culture	low	Functional management-mechanistic

Source: Own consideration

Table 11. Strengths & Weaknesses Summary

Co-ordination Group	New Department
Major Strengths: • No new financial resources required • Use of existing personnel and no administration enlargement • Use of all available and unused resources • Avoiding of unnecessary duplications in activities • Short introduction period	Major Strengths: • Own financial resources • No double authority conflicts

Major Weaknesses:	Major Weaknesses:
• Not own financial resources • Double authority conflicts	• New financial resources required • Administration enlargement • unnecessary duplications in activities • Longer introduction period

Source: Own consideration

Regardless on lack of own financial resources, which could neutralise the negative effects of double authority, the Co-ordination Group is the right decision. The integrated approach should be built on effectiveness such as modest public spending, internal strengthening, use of existing personnel and shortening the introduction periods. Access to all available and unused resources is in information society of quick obsoleteness essential and helps to prevent unnecessary duplication of the necessary activities.

4.3. Horizontal integration

4.3.1. City administration

Co-ordination Group for Open Public Space Management

The co-ordination group represents the horizontal integration within the City administration of the City of Ljubljana. The interdepartmental co-operation field is open public space management. The co-ordination group should be involved with gathering planning, implementation, and control activities of departments in City administration. Among departments in the City administration, also the co-ordinator for public utility services has been chosen.

Key factors are within planning implementation and control:

- Co-ordinator: Member of Department of Public Enterprises and Traffic, Department of Urban Planning, other.
- Secretary: member of City administration (clerical records-reminder to Co-ordinator, administrative works)

- Planning: Department of Urban Planning-OU (1 member, open public spaces design), Department for Environment Protection-ZVO (1 member, environment protection also monitoring indicators), Department for Economy and Tourism OGDT (1 member, tourism), Department for Security and Safety-Civil Defence OZR (1 member, civil defence)
- Implementation (executive): Department of Pubic Enterprises and Traffic OGJSP (2 members, traffic and maintaining), Department for Land Management OGZ (1member, real estate expert),
- Control: Inspection Office (1 member, Inspector)

Member is from sub departments that they are dealing also with open public spaces or they are independent advisors for related topics.
Co-ordinator for Public Enterprises and other companies (according to open public spaces) is a member of Department of Pubic Enterprises and Traffic and a member of the Committee (member, maintenance).

Table 12. City administration - Horizontal integration

Co-ordinator

PLANNING	IMPLEMENTATION	CONTROL
OU ZVO OGDT OZR	OGJSP(1) OGJSP(2) OGZ	INSP

*OU - Department for Urban Planning
OGZ - Department for Land Management
OGJSP - Department for Public Enterprises and Transport
OZR - Department for Public Security and Safety
ZVO - Department for Environment Protection
INSP - Inspection Office

Source: Own consideration

4.3.2. Public Enterprises and other companies

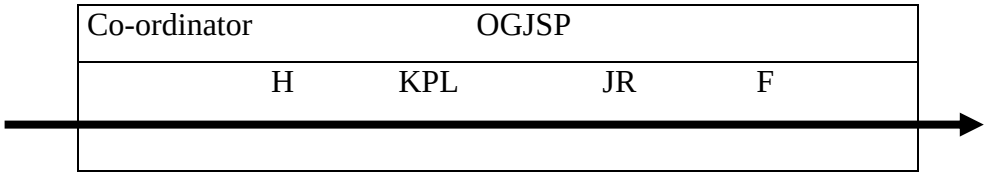
Co-ordination of public enterprises was not the topic of the thesis. However the key participants were chosen and also member of co-ordination group (within City administration) who will co-ordinate the public enterprises and other companies in their public utility services, on and about open public spaces.

Key factors implementing public utility service

Co-ordinator for Public Enterprises and other companies is Department of Pubic Enterprises and Traffic (member, maintaining)

- Ljubljana Holding Company (Holding mesta Ljubljana-H)
- Ljubljana Infrastructure Company (Komunalno podjetje Ljubljana-KPL)
- Public utility company for Street Lighting (Javna Razsvetljava-JR)
- Other profit companies (firms F)

Table 13. Public utility services - Horizontal integration



*H - Ljubljana Holding Company
KPL - Ljubljana Infrastructure Company
JR - Public utility company for Street Lighting
F- Other profit companies

Source: Own consideration

4.4. Integrated organisational structure

4.4.1. Joining functional (departmental) management & project management

Project-Matrix Structure

The proposed organisational structure is close to the project-matrix structure. Matrix structure are a combination of the product and functional organisation and are suitable for executing a project which requires the skilled services of

functional management and the specialised knowledge of product management. “Large turn-key projects in specialised fields require a matrix structure” (Ram Redy G. et al., 1990, p.17.). The characteristic of a matrix structure is that it operates under a dual authority. An employee in a matrix structure is responsible to two bosses, to the usual boss and to a project boss during the project period.

The proposed organisational structure is a combination of the project (Co-ordination Group for Open Public Spaces) and functional organisation (departments in City administration). The City administration with its departments is comparable to functional organisational form. The co-ordination group with its interdepartmental connection is a project organisational form, which influences the establishment of project-matrix structure. (Goals, Fit)

The problems emanating from this type of structure, especially with double authority have been solved partly through financial sources, which remain in departments. The classical mechanistic organisational form of the City administration was the reason for the introduction of the On/Off status of the co-ordination Group for open public spaces. The goal was to avoid

4.4.2. On/Off co-ordination group status

To introduce positive changes and avoid interruptions in routine departmental organisation the On/Off status of the Co-ordination Group for Open Public Spaces was introduced. Status of Co-ordination Group for Open Public Spaces is on or off power.

- On status. During the work of the Co-ordination group members harmonise the current activities of departments and public utility companies on open public spaces. The project boss is the co-ordinator. After the harmonisation activities the appointment ends.
- Off Status. After the appointment of the Co-ordination group, Off status appear and members continue to work under the guidance of their functional bosses (departments). However the agreed matters must be implemented through departments either on planning level, implementation or control.

Table 14. Status of Co-ordination Group for Open Public Spaces

On status. During the work	Co-ordination group members harmonise the current activities of departments and public utility companies on open public spaces. After the harmonisation the appointment is closed.

Off Status.	Co-ordination group is no longer in power and members work under the conditions of their departments. However the agreed matters must be implemented through departments.

Source: Own consideration

Appointments are all co-ordination activities managed by a co-ordinator. The co-ordination group resembles a comprehensive adjustment mechanism. Departments of the City administration and their activities on open public spaces are harmonised with activities of co-ordination groups.

4.4.3. Open ended

Part of the co-ordination group is also the participation of public. Participation of public is implemented through Committee for Open Public Spaces which, is practically an enlarged Co-ordination Group for open public spaces with five (5) representatives of the public. The head of the committee is the same as the head of the Co-ordination Group for Open Public Spaces.
The committee is structured from members of the Co-ordination Group and five representatives of the public. All members can suggest who can be invited to the Committee meetings (public). The Committee can invite foreign experts as part of the public (focus public) and recommend them to administration for opinions and second opinions. Horizontal integration and interaction is complete with open-ended approach.

Table 15: Committee for Open Public Spaces
Co-ordination Group + public

CO-ORDINATION GROUP Co-ordinator Secretary Planning: Department of Urban Planning-OU, Department for Environment Protection-ZVO, Department for Economy and Tourism OGDT, Department for Security and Safety-Civil Defence OZR Implementation (executive):	P L U S	PUBLIC (open ended)

Department of Pubic Enterprises and Traffic OGJSP, Department for Land Management OGZ Control: Inspection Office		
9+1 MEMBERS	&	5 MEMBERS

Source: Own consideration

4.4.4. Organisational charter

City administration Departments and Co-ordination Group for Open Public Space Management

Integrated approach is assured with co-ordination between key (factors) Departments, Committee with open ended form and member of Co-ordination Group for Open Public Space Management. Very important part for integration of all factors is the co-ordinator for public utility services. The co-ordinator is also a member of Co-ordination group. The result is double horizontal integration with crossing point in the Department of Pubic Enterprises and Traffic OGJSP. Proposed organisational structure allows full horizontal integration and interaction. Organisational structure, described fully in the chapter 4 is presented in the organisational chart.

Figure 16. Organisational chart for integrated open public space management

Source: Own consideration

4.5. Conclusion

For solving any problem, especially in sustainable development, the integrated development is essential for proper solutions. The main effort was to find the suitable organisational structure inside City administration, which will satisfy the necessary integrated approach without disturbing existing activities. The base of the organisational structure was the Project-matrix structure of organisational form, which allows the combination of business functional organisational form and project organisational form. We can partially compare the organisation of departments in the City administration to business functional organisational form and proposed co-ordination group to project organisational form. The focus was to find the most appropriate way to place the co-ordination group with project management characteristics to existing departmental organisational structure with functional organisational characteristics. Solutions inside the mechanistic organisational structure, corresponding to the City administration, demand understanding of necessary routine activities. such as the need for project approach towards managing fields, such as open public spaces.

The proposed organisational form is not a classical Project-Matrix structure. Modification of double authority was made to avoid the disruption of obligatory activities of departments (on/off status) and to introduce positive changes. “On status” is during the work of the co-ordination group, when members harmonise the current activities of departments and public utility companies on open public spaces. After the harmonisation, the “Off status” appears and members continue to work within their departments.

Nevertheless, the proposed organisational structure is one of the possible solutions. There is enough place for modifications, regarding the location of co-ordinator, level of financial independence and selection of key persons (members). This is wery important for flexible organisational structure. Only flexible organisational structures could adapt to actual environment and react according to the needs.

5. CHAPTER 5. CONCLUSION

The process of industrialisation and urbanisation made people ruthless on the environment. It has been the environment who suffered in the march of the civilisation from tradition to modernity, from rural to urban. People got so involved that they didn't care for the damage being done to the ecosystem. Awareness came late. A lot of damage was done and the ecosystem was disturbed. Public awareness and concern slowly grew and a movement to restore the environment began. The strategy of sustainable development is such attempt, who tries to understand and develop a better living environment for mankind, but also to preserve the natural heritage of the Earth.

Slovenia and particularly Ljubljana have been no exception. The processes of industrialisation and urbanisation had their impact. However, if we compare the consequences with big cities of the world, they are not disastrous. They can be managed or even removed though the sustainable development. The ways to solve the problems should be same to those discussed at the conferences in Stockholm (1972) and in Rio de Janeiro (1992).

The available awareness amongst the general public regarded environmental issues and its relations to health and quality of life is still inadequate. According to Umanotera (Agenda 21 For Slovenia, 1995, p.9.) there are many obstacles to sustainable development and one of the important ones is the low level of awareness of general public. Therefore, preparing the people of Slovenia and in particular Ljubljana for sustainable development is the main strategy of the non-governmental organisations working in this area.

The main objective of this thesis is to focus on the role of sustainable development of open public spaces of Ljubljana. The centre of concern is to provide good services for better environmental life through proper and systematic utilisation of open public spaces in the cities. The quality of life in the cities is directly related and depends on the conditions of the ecosystem. In this thesis an attempt has been made to open a public discussion on sustainable development of open public

spaces. This will help creating an environment of awareness amongst the people leading to their support for a better sustainable development of open public spaces. However opening a dialogue is not the responsibility of the City administration. It lies within the civic societies and the non-governmental organisations. Adequate political culture, awareness and social-economic conditions will further stimulate the creative and critical thinking of the general public, bringing more awareness and better sustainable development of open public places and developing a culture of sustainable development.

Indicators play a vital and positive role in the whole process of sustainable development. Identifying the major indicators for the process is essential. The City administration is in the process of preparing the strategy for sustainable development of Ljubljana. Once it is done and approved by the city council, the process of selection of key indicators for the project and for the development of open public spaces will be carried out. This will help monitoring the day to day developmental processes. Management of open public spaces is a part of the composite development of the city and its strategy should follow overall city strategy.

Therefore four steps should be followed:

- Verification of city strategy for sustainable development (vision)
- Selecting of key indicators for monitoring the development and progress.
- Selection of indicators for the general public, considering general key indicators(open public spaces)
- Assignment of target values to selected indicators for the general public (open public spaces)

The present organisational structure is mechanistic with a vertical decision making system and corresponding co-ordination. The major activities of the City administration are divided into separate departments under a departmental head. The major departments of the City administration, connected to open public spaces are the Department of Urban Planning, the Department of Public enterprises and traffic and the Inspection office. Beside those three departments, also Department for Environment Protection, Department for Land Management, Department for Economy and Tourism and Department for Security and Safety (Civil Defence) are important as a part of broader open public space planning.

The major administrative problem with present system is that there is no co-ordinating body for the management of open public spaces. The organisational structure is competent enough to look after the development of the city, but is evolved with the routine day to day work of the city, so much, that proper attention is not being given to the management of open public spaces. Changes in the present organisational set-up is required. The thesis is an attempt to focus on a pattern of organisational structure that will fit into the present structure without disturbing the set-up and will be able to manage public open spaces.

In order to overcome the difficulties of sustainable development, it is essential to have an integrated approach which will also include the representatives of the society. The emphasis in the present organisational structure and its functioning should be given to the integrated approach.

We can conclude that for a proper sustainable development and management of open public spaces, we must take socio-economic and environmental factors into consideration. Generating public awareness and concern of the society towards the sustainable development of the open public spaces and developing a balanced system of built and natural environment is essential. In order to achieve this, it is essential to have an integrative approach. The different departments of the City administration has to co-ordinate and will have to have concern for the development of open public spaces. In the present administrative structure, the place for a co-ordinator for open public spaces has to be created to achieve effective utilisation and development. The effective integrated management is based on appropriate organisational structure.

The emphasis is on the organisational structure because it is being observed that the present administrative set-up is not able to co-ordinate properly in matters of the sustainable development of open public spaces. The base of the organisational structure was the Project-matrix structure of organisational form, which allows the combination of business functional organisational form and project organisational form. We can partially compare the organisation of departments in the City administration to business functional organisational form and proposed co-ordination group to project organisational form. The focus was to find the most appropriate way to place the co-ordination group with project management characteristics to existing departmental organisational structure with functional organisational characteristics. Solutions inside the mechanistic organisational structure, corresponding to the City administration, demand understanding of

necessary routine activities and also the need for project approach towards managing fields, such as open public spaces.

The proposed organisational form is not a classical Project-Matrix structure. Modification of double authority was made to avoid the disruption of obligatory activities of departments and to introduce interdepartmental co-ordination. If the City administration will be able to implement such an organisational policy, then City of Ljubljana can enforce and promote sustainable development and contribute to preservation of our environment .

The most important factor in the sustainable development is the participation of general public. This is only possible if there is a general awareness and concern among the people. The involvement of mass media and civic society to bring about the general awareness must become an important task. The City administration should assist in such public awareness campaigns.

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