7 F. L. Wright, The Living City, 1958
8 F.L. Wright, idem
9 F.L. Wright, idem
10 S. Kraft: La dinamica delle citta; (article in Evropan 3: A casa in citta, urbanizzare i quartieri residenziali; concorsi europei per nuove architecture, risultati europei; CER, comitato per l'edilizia residenziale, 1994).
11 I. Prygogine and I. Stengers: Order Out of Chaos, New York, 1984 (quoted from book; R. Kollhass, O. M. A. and B. Mau: S, M; L, XL; 1995, 010 Publishers, Rotterdam).
12 S. Kraft, idem
13 Z. Mlinar: Prostorski nered kot izraz (ne)moči posameznika in sistema; Teorija in praksa, 't.5-6, 1993.
14 P. Gantar: Črnograditelji proti državi; Teorija in praksa, 't.5-6, 1993.
15 Kos D., Predmodernost ali postmodernost "črnograditeljskih" praks, Teorija in praksa, 't.5-6, 1993.
16 Z. Mlinar, idem.
17 J. Koželj, Strukturni pristop k skladnejši pozidavi, Vesela znanost, 1993.
18 B. Boigon: A Cyberspatial Commentary, Newsline, Sept.-Oct. 1991 (quoted from book; R. Kollhass, O. M. A. and B. Mau:S, M, L, XL; 1995, 010 Publishers, Rotterdam)
19 P. Virilio: The Overexposed City; Zone 1/2: The City, New York, Urzone, 1987 (quoted from book; R. Kollhass, O. M. A. and B. Mau: S, M, L, XL, 1995, 010 Publishers, Rotterdam)
20 William J. Mitchell: City of Bits, Place, Space and the Infobahn; The MIT Press, Massachusetts, 1995.
21 Dr. Janez Strahovec in an interview for magazine Nova, Dec, 1995.

Alenka Fikfak, architect, Faculty of Architecture, Ljubljana, Alma Zavodnik, architect, Ministry of the Environment and Physical Planning, Office for physical planning

For literature and sources see page 26.

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Ecological Quality in Cities: The Organisation and Co-ordination of Environmental Policy and Urban Planning at the Local Level

1. Introduction

1.1 Aim and structure of the paper

The quality of living in cities depends crucially on environmental quality, which depends inversely on pollution in the urban regions of this world. As the majority of the world population, particularly in the industrialised and the post-industrial countries lives in urban regions, global environmental problems are frequently made in the cities. Rapid urbanisation is thus seen as one of the major engines behind the deterioration of environmental quality world-wide. The way these problems are handled in these urban places, the way policies are organised and implemented hence have an important bearing upon the further development of cities, their ability to maintain the quality of living and to make a contribution to the fate of global environmental quality. Despite the fact that cities are the main producers and consumers of environmental pollution, their role in environmental policy (EP) differs widely in different parts of this world. Often they are only involved in the implementation of programs designed and decided at different levels of government, in some cases they are in full control, from defining and deciding goals to implementation and monitoring. (Neddens 1986, Hahn 1991).

Another motive for the study reported on here is the fact that the framework of EP is reconsidered and discussed. Policy activities can be organised in many different ways, vertically as well as horizontally. The question as to which options are worth considering against the backcloth of a new decision making framework in Europe (e.g. Maastricht Treaty; Agenda 21 on a global scale), in which among others responsibilities need to be allocated to different tiers of government, is investigated in this contribution, particularly with respect to the new role of regional and local entities entities (see e.g. Huckenstein 1993, Bongaerts et al. 1992).

Emissions depend among other important factors on urban/regional development policies and planning. Frequently, however, EP and these activities are not harmonised, neither in fact nor in terms of the organisation of the processes leading to relevant decisions, This is particularly noteworthy as land-use patterns are to a certain extent also influenced by the spatial pattern of residuals' concentration over an urban region, with all the effects known on planning decisions (see e.g. Fürst 1986).

This paper attempts to make a contribution to this area of EP by reporting selected tentative results of some exploratory pilot studies, based on interviews with experts and practitioners in 10 case-study urban regions in Europe and America. As most experts interviewed agreed that problems of air-pollution were of particular significance in their urban regions and noise presented a major factor in a decreasing quality of urban living, most of the topics pursued deal with these areas of environmental policy. These case-studies were carried out by several persons in the course of their studies as university students or faculty members within the framework of specific contracts dealing with problems of environmental policy. As the data base for this report is still rather narrow, honest generalisations cannot be made, the results are very tentative indeed. The authors feel, however, that some of the findings could serve as interesting points of further discussions and research work in this field.

The paper very briefly mentions some of the underlying hypotheses discussed in the field in section 2. The report continues by a discussion of the alternative ways to organise environmental policy. Within such a policy framework the definition of necessary elements of a consistent system, such as setting goals, implementation, etc. need to be assigned to specific governmental institutions, working at various tiers of government (federal/national, regional, local, ...). An evaluation of such organisational schemes by the interviewed experts is summarised. Furthermore the agenda of EP needs to be allocated within the local administrative body. Several alternatives, applied in practice in the case-study areas, were evaluated by

the interviewed experts, a summary is provided at the end of section 3. Section 4 deals with the efforts to co-ordinate policy activities between different entities within the local administration more or less directly related with environmental questions, particularly those charged with the classical tasks of zoning, planning and building code regulations. In many regions, especially in federally organised countries, co-ordination of environment related activities by local administrations belonging to a functionally integrated urban regions without a supraregional planning authority, is mandatory. The ways and short-comings of such efforts as seen by the experts interviewed are briefly discussed. Section 5 presents an overview of some of the measures actually taken to overcome problems of air-pollution and noise in the case-study areas (environmental policy tools). The paper concludes with an outlook on further research in this area.

1.2 The case-studies

An interview guide-line was designed on the basis of which 3 groups of interview partners were asked to provide information on EP activities in the respective urban regions, particularly with respect to air-pollution and noise. The guide-lines consisted of several sections, experts were only asked to respond to the specific sections they felt they had some expertise:
- The first group were civil servants working in the area of environmental management and urban planning.
- The second group were representatives of "green" lobbies and concerned citizens groups.
- The third group were (mostly academic) experts dealing with EP in their research and teaching work.

In each city region between 15 and 25 interviews were conducted.

The 10 urban regions in which interviews were conducted in were:
- Austria: Vienna and Linz
- Germany: Gelsenkirchen and Herten
- U.K.: Sheffield
- U.S.A.: Madison (Wisconsin), Research Triangle Cities of North Carolina Chapel Hill, Durham, Raleigh), San Diego (California).
- Argentina: Buenos Aires
- Canada: Toronto

The choice of urban regions depended on opportunities available (exchange programs, contracts). If choice was possible, regions known for innovative attempts to organise EP were selected, a balance between predominantly industrial regions (Linz, Sheffield, Gelsenkirchen, Herten) and service centers (Vienna, Madison, Research Triangle, San Diego, Buenos Aires and Toronto) was intended, although not quite realised. Furthermore an attempt was made to include also medium sized regions besides the large agglomerations.

2. Environmental Quality In Urban Areas And Urban Development; A Feedback Relationship

The basic claim underpinning the study, summarised partially in this contribution, is the existence of a feed-back relation between land-use and environmental quality in urban regions. (see Schubert, 1981; Strotz & Wright, 1975.).

Relation 1: Residuals´ concentration in an urban region depends on land-use:
- The intensity of land-use influences the intensity of emission of pollutants (according to the rules of thermo-dynamics)
- The spatial pattern (density)of land-use influences the volume of emissions at any given point in space (the sum of individual emissions by all the land-users located at this point), as well as the diffusion of pollutants over space.

Relation 2: Environmental quality at alternative locations in an urban region influences the location decisions of households (and of some companies) :
- Households (and some companies) prefer (or are at least indifferent to) locations with better environmental quality (i.e. lower residuals concentration)

This feedback relation will lead to a dynamic process in which both sides of the relation will adjust to each other with time-lags. Moving away from environmental plight increases the density of land-use and thus emissions at the receiving locations. The resultant urban sprawl leads to longer commuting distances and generally to higher energy consumption, which in turn increases emissions. The process can eventually lead to an "implosive" tendency, when the former central locations are so thinned out, that emissions density will fall enough to make these locations again attractive from a pollution point of view (Figure 1 presents a schematic overview of the feedback loop, see page 29).

Both sides of this relation are influenced by various policies:
- **Environmental policy**, exerting a direct influence on emissions' density
- **Economic policy** with an influence on emissions' density in an indirect way via changes in consumption and production patterns. This group of policies also changes locational behaviour via changes in income and wealth
- **Land-use policies** writ large (zoning, building codes, transportation policy, etc.)

In view of the long-run feedback process claimed, it seems evident that all the policy bundles mentioned should somehow be considered carefully to arrive at a compatible mix. Completely independent actions could easily result in unwanted side-effects as contradictory actions can be expected unless at least a minimum of co-ordinative action takes place. The policies mentioned above, however, are usually the responsibility of a multitude of more or less independent administrative units, so that co-ordination is normally not ensured. The present contribution attempts to open up this field of discussion by assessing the awareness of important actors in policy making of the feedback problem and the actions taken to overcome the co-ordination issue.

3. The Organisation of Environmental Policy

3.1 The responsibilities of different tiers of government in environmental policy

An environmental policy system consists of several basic elements:
- goals of policy have to be specified (usually in the form of standards)
- property rights to environmental resources need to be specified (implying the "principles" of environmental policy, such as the "polluter pays", etc.)

– instruments for implementation have to be chosen
– a monitoring and controlling system needs to be established

Organising EP implies the allocation of these elements to specific tiers of government as responsibilities – such as to international, national, regional and local governments (see e.g. Baumol, Oates 1988; Zimmermann, Kahlenborn 1994). To facilitate matters, the international and national level is not distinguished in the sequel as normally international have to be adopted as national laws to be valid.

An attempt to classify some of the cases observable in practice is presented below:

- **Full local autonomy:** All policy elements are the responsibility of the local authorities. In our sample this system was only observable with respect to noise, usually those types defined as "nuisances" (typical "neighbourhood effects").
- **Co-operative systems:** The goals of EP (standards) are developed jointly or the central authority just recommends guidelines or minimum standards which need to be elaborated regionally and/or locally. Implementation is purely local, appeals can be made to a regional (or national) authority, which, however, checks only the conformity with regional/national laws.
- **Hierarchical systems:** Responsibilities are clearly defined and the regional and/or local authorities are usually charged with the implementation of goals set by the central government, usually in the form of minimum standards which the local/regional authorities can make stricter if they choose to do so. The highest level of control over the implementation activities is also vested in the central authority.
- **Centralistic systems:** The local authorities are only charged with the implementation, no modifications are possible.
- **Fully centralised:** All activities are carried out at the central level.

Accordingly, the actual role of the local authority varies from full responsibility to mere auxiliary functions. Note also that different systems are often used for different pollutants and that sometimes even within one class of pollutants, distinctions are made between different emitters (frequently, e.g. large emitters are subject to regulation by national authorities, while small companies and households are the responsibility of the local administration). In practice, of course, the limits between the different approaches are rather fuzzy, nevertheless some types are discernible (besides the obvious extreme cases).

The following chapter tries to attribute each of the case-study cities to one of the regimes mentioned above. In order to be able to assess the pros and cons of the approaches outlined, the stylised facts of the case-study systems need to be presented first.

LOCAL AUTONOMY

Example in the sample: Almost all cities with respect to "residential noise" abatement (see page 31)

Stylised facts:
– The city council (regional council) sets ambient standards
– The city (regional) administration is responsible for implementation

Advantages quoted:
– Nuisance is taken care of close to the source
– Local conditions can be taken into account

Disadvantages indicated:
– A tendency to allocate insufficient funds to local authorities to cope with the problems
– Different standards and practices of implementation in adjacent areas belonging to different administrative areas can lead to confusion and discontent.

CO-OPERATIVE SYSTEMS

Example in the sample: Air pollution abatement in the U.S. (see page 31)

Stylised facts (classical air-pollutants):
– The federal E.P.A. sets minimum emission standards which need to hold in all states of the union. The states ("regions") are free, however, to impose stricter standards within their jurisdiction.
– A status quo analysis is regularly undertaken and the areas in which the standards are violated are classified into "non-compliance classes".
– The states are responsible for designing "compliance plans" which need to be approved by the federal authorities.
– Implementation of these plans are the responsibility of the states, they can, however, delegate this responsibility to subregions in the state ("local level"). If states are unable to fulfil the implementation plans (within the time span specified in the plan), the federal authorities step in.
– The implementation system of the states can take different approaches e.g.:
  - In California "air quality management districts" (AQMD) were set up, corresponding as closely as possible to "air sheds", the basic spatial units (b.s.u.) of which these spatial aggregations are formulated on, are the counties. The responsibility of designing, if approved by the California E.P.A. and consequently by the federal E.P.A., is delegated to these entities (they are also free to choose stricter than the federal standards).
  - In Wisconsin the "State Department of Natural Resources" is charged with the design and implementation of the compliance plans. It has several branch offices in the state which support this activity.
  - In North Carolina the state E.P.A. is the responsible authority, it co-operates informally with the subregions, particularly the larger conurbations where compliance is at risk.

In the classification sketched above the U.S. system can be seen as a co-operative approach. Although legal responsibilities are defined in a hierarchical manner, many co-operative elements are built in, especially in the form of the compliance plans suggested by the states (and in the case of California by the AQMD´s at the subregional level).

How is the efficacy of this system seen by the experts interviewed in the case study areas? Positive features were seen to be:
– The federal minimum standards prevent a downward spiral in air quality which could easily result from competition of states to attract companies (including the "dirty" ones) on purely economic grounds.
– The local know-how can be fully utilised when implementation plans are designed which are more likely to reflect climatic conditions and the economic structure of the region as well as typical cultural characteristics of the region (or subregion) in the choice of policy instruments
– States in which environmental quality is more important to the citizens are free to strive for more stringent standards and can deal with new issues without interference by the fed-

eral authorities (e.g. the problem of "toxics" where particularly California has pioneered legislation, etc.). This system is considered as being particularly flexible and adaptable to local requirements.

Negative characteristics were identified to be:
- Despite the fact that stricter than the federal standards can be imposed, pressure groups make this close to impossible in practice, the system hence has a tendency towards uniformity all over the U.S. "Pioneering" is generally limited to regulating new pollutants and to introducing new instruments of policy (e.g. the RECLAIM-NO_X and SO_X tradable permits system in the L.A. agglomeration).
- Most local environmental goals are formulated in terms of ambient air quality standards. Matching these with (federal) emission standards is not only a non-trivial task analytically but also particularly difficult politically if the ambient standards imply lower emission standards than the minimum required by the federal E.P.A.
- The system tends to be sluggish in response to new challenges as the "down and up and down" approach foreseen tends to be very slow.
- Further urban sprawl might make redefinitions of subregions (such as the California AQMD) necessary.
- The fact that adjacent areas rely on different instruments of EP can lead to confusion for residents (e.g. in San-Diego AQMD a control and command system with respect to SOx and NOx from stationary sources is in action, while the neighbouring "Southern California AQMD", the Los Angeles agglomeration area, relies on tradable emission permits).
- The federal E.P.A., foreseen by law to step in, in case the states (or subregional) authorities fail to implement the agreed plan for compliance, find it difficult t to envisage an action plan which can do better than the locally designed one, given their lack of specific information on the local idiosyncrasies.

HIERARCHICAL SYSTEMS
Example in the sample: The federal states Austria and Germany (see page 33)

Stylised facts (classical air-pollutants, applicable e.g. in Austria for steam boilers operating at over 100 degrees Celsius):
- The national government sets air quality standards and/or emission limits
- The "Länder" are responsible for implementation (choice of instruments unless already federally regulated, e.g. in the case of "eco-taxes" in Austria) and monitoring
- The local administration only has ancillary functions to fulfil (in the sample Vienna is at the same time "Land" as well as a commune, which guarantees more lateral leeway than in other cities in Austria).

Advantages were seen to be:
- Responsibilities are clearly allocated in principle
- The same rules are valid all over the country
- Competition to attract industries at the cost of the environment between the "Länder" is practically ruled out
- Federal institutions, drawing usually from a larger pool of qualified labour supply tend to be more professional and competent
- The influence of very local, parochial interest groups on EP decisions tends to be more limited
- International negotiations dealing with trans-frontier pollution problems tend to be more manageable and less costly

Disadvantages:
- Local topographical and micro-climatic conditions can differ widely, these should be taken into account, which is usually not the case with federal legislation
- CLocal know-how tends to be neglected and local/regional political cultures to cope with problems are sacrificed to achieve uniformity. Identification of the population with the regulations is generally not achieved and policy may hence be ineffective
- Despite the fact that responsibilities are in principle clear, in practice the regulations make too many exceptions and distinctions between e.g. polluters (large/small; steam boilers under and over 100 degrees Celsius operating temperature; air-pollution damaging forests; vehicles' emissions on different road systems; ....., etc.)
- On the federal level party politics have a tendency to play a larger role in the making of the regulations than they might at the local level
- Hierarchical systems tend to be sluggish in response, both to routine problems where the long communication channels alone cause delays, even more so with new challenges.

CENTRALISTIC SYSTEMS
Example in the sample: (Buenos Aires; regulation for large industrial polluters in the U.K. (see page 33)

Stylised facts:
- All relevant decisions are made by central governmental institutions
- Implementation is also a central governmental function, often carried out by localised central government agents and institutions.

Advantages mentioned:
- Uniformity of regulation all over the country, "equality" of regions
- Best use of qualified personnel
- No muddling of local politics

Disadvantages detected:
- Consistency of local/regional EP endangered, as regulation and monitoring of some sources (the largest and most significant ones in many cases) is not within the responsibility of the authority in charge of the other sources. This can cause an atmosphere of resignation and neglect of the possibilities open
- Monitoring results of ambient quality sometimes difficult to use for policy efforts (as emissions are not measured by local authorities directly, emission related policies oriented on ambient quality measurements are difficult to plan)
- Neglect of local idiosyncrasies and political culture

3.2 Environmental policy and the internal organisation of regional/local administrations

As EP constitutes a typical cross-sectional planning task, there is no a-priori obvious way to organise the activities implied at the local level (see e.g. Neddens 1986; Fürst 1986; Baumheier 1992). Various possibilities exist (the following list is not exhaustive):

3.2.1
Environmental responsibilities are spread over several departments dealing with **particular sectoral matters** (Water supply, sewage, etc.).

This system is seen to promote administrative expediency, as documents don't need to run through several departments and competence is concentrated within one entity. Obviously the resulting lack of co-ordination between different departments dealing with environmental affairs constitutes a major drawback. A systemic approach to environmental policy is very unlikely under these circumstances and individual actions can produce unwanted side-effects.

3.2.2
A special department dealing with EP (at the same hierarchical level as other departments dealing with administrative tasks)

Advantages mentioned were the concentration of competence in environmental matters and the direct link to daily practice. Disadvantages claimed were the partial duplication of tasks, as the special departments dealing with environment related topics (such as sewage, water, waste disposal, energy, etc.) have to employ experts in these areas also. Additionally the tendency was observed to neglect environmental considerations in the planning work done in other departments the feeling was that there was a special department responsible for these matters anyway. This fact tends to lead to conflicts and to longer planning periods.

3.2.3
A co-ordination agency, usually without formal governmental authority. Environmental problems are dealt with in the various departments charged with the standard administrative tasks (e.g. water pollution is the responsibility of a department dealing with all water related issues, etc.), the special agency attempts to harmonise all environment related issues and usually does the P.R. business for the administration as well as the liaison work between concerned citizens and the administration.

This type of organisation can rather easily be introduced in already existing administrative structures and does not cause major disruptions. If it has the support of the political leader (e.g. the mayor), it can be quite effective. Being able to use informal communication channels with citizens (groups), response to popular demands is greatly facilitated and expedited. The agency can also have a major impact on the political stability by being able to relate first-hand the problems of the administration to meet public claims. On the negative side it was recognised that, not having any formal decision power, this system could become quite toothless, particularly if the political back-up is not sufficient or there is very little visible progress in environmental concerns. The agency can very easily lose its credibility vis-à-vis the citizens who consequently turn to other means to express their interests. The same danger exists from the side of the professionals in the various departments dealing directly or indirectly with environmental questions. If they consider the agency to be just an advocate of the interests of environmental pressure groups communication channels will become closed very rapidly.

3.2.4
A special task-force in charge of environment related projects planned at the local/ regional level to facilitate project management and ensure the consideration of environmental interests

The advantage of this approach is its being targeted to specific problems and its economic efficiency. As it implies only a temporary commitment, for which the best experts can be drafted and does not interfere with the structure of the administration as a whole, political resistance tends to be minimal. A major drawback can be "single problem solution" approach which does often not consider any wider aspects of the ecological system involved. If experts from the "routine" departments are not included into the team, frictions are likely to arise, which can be highly counter-productive, e.g. by withholding essential, often informal information from the project team, etc. Acceptance of the results of such a project depends crucially on the confidence of the political leaders in the competence of the project head.

3.2.5
A special agent directly working with the mayor (or equivalent) as an advisor on environmental issues

3.2.6
A city councillor responsible for the environment without a full backup administrative department (often found in small towns).

The major factors of success are:
- Competence of the person and
- political back-up by the mayor and the council even in serious conflict situations.

Environmental matters are sometimes divided into 2 distinct tasks:
- Direct governmental actions (e.g. issuing pollution permits, inspection of firms, etc.)
- Planning activities requiring special expertise

In some case-study regions these tasks are organised in different types of agencies or departments (particularly in Austria and Germany). Advantages quoted of such a system are the greater degrees of freedom for creative planning, the disadvantage, of course, is the other side of this coin, i.e. the remoteness of plans from the everyday business of the implementation in the sectorally oriented administrative departments.

3.3 Co-operation and co-ordination between spatial units in a functionally integrated urban region

Diffusion patterns of residuals play an essential role in the process of conflicts and co-operation between administratively independent communities in an urban region. Particularly air-borne pollutants, depending on the prevalent meteorological conditions, can spread over very small to potentially global spatial dimensions. Communities in such an "air-shed" should internalise the resulting external effects by designing consistent policies. In reality the design as well as the implementation pose serious problems of co-ordination between the political institutions and the administrative authorities organised independently of each other (see Fürst 1991; Scharpf/Benz 1990).

Several possibilities exist to co-ordinate environmental policies, spanning the range from formalised, fully institutionalised arrangements to completely informal exchanges of ideas, information and agreements.

- Policy is co-ordinated by special agency, created solely for this purpose (e.g. the "Air Quality Management Districts" in California, grossly representing an air-shed and consisting of several counties with their own administrative organisations).

The advantages are the clear responsibilities within a functionally more or less closed and distinct system, the features of which can be explicitly be taken into consideration in the design of the policies. Many important policy decisions with a clear and significant influence on emissions intensity, such as land-use related ordinances and infrastructure projects remain in the hands of the subzones, i.e. the individual communes in the region.

- Policy is co-ordinated by a "club" of delegates from the subregions on a voluntary basis (This "club" can have a supporting infrastructure, a "co-ordination bureau", preparing the necessary information required for decisions, etc.). Decisions represent a "contract" between the partners which needs to be implemented in the subregions by the (usually sectorally) responsible administrative entities (an example of this type of arrangement is the "Planning Association East Austria", the agglomeration around the city of Vienna. Their activities encompass not only environment related policies).

  Usually considered more tedious than a formalised co-ordination body, several advantages were indicated by the interview-partners. This type of organisation is very flexible, does not require any major (constitutional) changes and can in principle be very efficient if the partners fully support it. Competence can be concentrated and the agency, particularly if well supported by a professional co-ordination bureau, has a fair chance to come up with creative ideas. The fact, however, that all actions are voluntary and that no subregion can be forced into an agreement in case of serious differences of opinions and conflicts can easily make this arrangement obsolete. Purely party-political differences between the subregional administrations can lead to complete stultification, even if subject-oriented opinions are not really worlds apart.

- Co-ordination is the responsibility of a special agent, without any formal responsibility (an animator model, as introduced e.g. by the city of Sheffield, U.K.).

  More or less the same pros and cons were indicated by the interview partners, especially the flexibility, efficiency and the potential to be close to the people as well as to the authorities on the one hand, but also the impossibility to "box-through" any policy ideas were seen as negative.

- Co-ordination takes place only informally between interested individuals working in the (sectorally) responsible departments in the individual subregions (or also sectorally organised special areas, such as transportation which is planned in national as well as state/"Länder" and communal agencies in all the countries in the study).

  This type of informal co-ordination was generally argued on the positive side, can be very efficient, but there is absolutely no guarantee it will happen. Suggestions were made that topic oriented seminars and discussion fora can provide a good opportunity for stimulating the creation of networks among the responsible agents working in different subregional administrative units.

The tenor in all the interviews was that co-ordination between subregions is not working satisfactorily and presents one of the major obstacles to the formulation of consistent policies, as well as to efficient implementation.

Another set of questions asked in the interviews were related to the problem of co-ordination between departments dealing with urban planning in general, the design of masterplans, zoning ordinances and building codes in particular. The interviews yielded a very high degree of awareness about the relations between these activities and environmental policy. In planning practice, however, co-ordinated planning processes are generally considered to be only at incipient stages or not existing at all. It seems that most of the successful cases mentioned were mostly based on informal contacts, formalised procedures were mostly considered as very time and resource-consuming frequently without producing tangible results. The feeling was often, that actually actions taken by different departments were actually contradictory. This seems to be particularly problematic with respect to the planning of large transportation related infrastructures such as expressway systems in agglomerations. These are often blamed for increased emissions of air-pollutants, while at the same time marginal reductions from stationary sources, usually hand in hand with very high investment costs, make major political efforts mandatory to push them through. The actual effect on residuals' concentration in the urban region, a function of emissions from both sources, can even be an increase!

Chances to use other urban programs such as R&D promotion, technology and energy policy as vehicles to enhance environmental policy efforts are still very little utilised.

4. The practice of environmental policy in urban regions, popular measures to decrease air-pollution and noise

In this section a brief overview of some of the most commonly applied measures in the case-study urban regions is presented. Only those measures were included into the questions posed to the interview partners where at least a minimal local element was identified, even if the formal responsibility for these actions were with other non-local authorities. Tables 1 and 2 present an overview with respect to measures taken in the field of abatement of air-pollution and noise.

The measures taken show many common elements. Practically all actions aim predominantly at reducing emissions via end-of pipe technological solutions. Solutions aiming at avoiding the production of residuals are not very common.

Transportation related pollution seems to be the major problem in post-industrial cities these days. It was invariably claimed by the interview partners that emissions from stationary industrial sources were the major concern in the seventies and eighties, but are presently under control. Some citizens' groups representatives were sometimes not in full agreement with these statements in predominantly industrial centres Linz, Sheffield, Gelsenkirchen and Herten), but all of them conceded major improvements over the last decade. A major concern in the future was identified : toxics! Regulation in even very advanced and progressive regions (in the U.S. particularly California), has caught up with the problem, let alone implementation.

With respect to transportation there seems to be a fairly clear division between cities in Europe and in the Americas. The em-

Table 2: Measures to reduce noise in case-study urban regions

Sector	Type of activity		
	Environmenta Policy	Land-use Related Policy	Other
Manufacturing	Individual actions for large sources (Linz, Sheffield,etc.)	Industrial zones	Company internal work rules (Sheffield)
	Subsidies for noise abatement		
	Silencing equipment for construction machines (Vienna, Linz)		
Transport	Low noise trucks (Linz, Vienna)	Reduced traffic zones	Subsidies for noise proofing to households & service firms
		Reduction of noise caused by public transportation	
		low noise asphalt (Linz, Vienna)	
		Noise barriers	
Households	"Reduced noise" lawn-mowers	Special areas for noisy recreation activities	
	Better sound insulation building norms		

Table 1: Air-pollution abatement measures in selected case-study cities

Sector	Type of activity		
	Environmenta Policy	Land-use Related Policy	Other
Manufacturing	Subsidies for technical changes (e.g. Linz, Sheffield)	Industrial zones with or without special abatement infra-structure	Alternative energy sources - remote heating, conversion to natural gas (Linz, Sheffield, Vienna)
	Individual abatement activities for larger polluters (e.g. Linz, Sheffield, Gelsenkirchen)	"Bubbles" (California)	Desulphurzation of fuel
Transport	Obligatory catalyst for automobiles	Reduced speed zones	Car pools (U.S. cities, Toronto)
	Lead free fuels	Reduced traffic zones	
	Oxy-fuels (North Carolina)	High density lanes (California, Toronto) Bike Lanes	
	Inspection of vehicles	Parking space management (Vienna)	
Households	Desulphurization of fuels	Separation of living & working	Subsidies to replace old equipment
	Inspection of burners, etc.		Alternative fuels & remote heating

phasis in Europe is clearly on promoting public transportation and other alternative modes (such as cycling and even in-line skating), whereas predominantly in the U.S. car-pooling, ride-sharing and express-lane "subsidies" to cars with more than 1 passenger are prevalent.

Using urban planning as a tool of reducing air-pollution and noise is still mostly found in the classical strategy of separating incompatible land-uses (Industrial zones, etc.). In some European cities the "re-organisation of traffic" concepts are slowly gaining ground. Besides the strategy of extending pedestrian and low speed "quiet " zones, increasingly parking space restrictions are viewed as an effective instrument to reduce automobile traffic and simultaneously promote public transportation (e.g. Vienna has now restricted parking possibilities in the core of the city region to residents and special permit holders, otherwise only short-duration parking is allowed).

The views how to use urban planning tools in the future differ widely among experts. One school of thought believes in the further separation of incompatible land-uses while the other relies more on an increase of mixed land-use, reducing the need for commuting (an argument why this seems possible is the ever increasing share of the service sector in modern urban economies, which is generally not a heavy polluter)

5. Outlook

The last part of the interviews conducted contained questions as to how the organisation as well as the co-ordination and measures in EP could be improved and to what extent the experts were satisfied with the achievements made so far. To end this paper some of the more common answers should be summarised here:

- The local level should have more power in EP than hitherto – this more important role should be accompanied by a better financial endowment, without which the policy tasks cannot be effectively tackled.
- The piecemeal approach often encountered today should be replaced by more systemic approaches from which consistent measures can be derived. Additionally the prevalent control and command approach needs to be reconsidered to open up more market and individual action based avenues to EP.
- Better enforcement of present regulations would already imply significant improvements in environmental quality.
- To foster public awareness and readiness to co-operate in EP programs more PR work in gemeral but more participation of the citizens at all stages of policy making are warranted

There are, however with respect to the role of local authorities, considerable differences of opinion. Particularly in federal countries the complexity of the interplay of many tiers of government and the resulting confusion as well as parochial concepts and local egotism's are bemoaned and simpler and often more uniform (centralistic?) concepts and organisational, schemes are postulated.

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Urban Design Workshops: A Planning Tool

In 1996 the Office of the Republic of Slovenia for Physical Planning (URSPP), Ministry for Environment and Physical Planning, prepared a public invitation for co-financing municipalities in the execution of urban design workshops and tenders. With this activity the URSPP wished to promote and stimulate finding solutions to important questions related to urban management in Slovenian towns and other urban settlements. Nine urban design workshops and a competition for an urban-architectural solution of a secondary town centre (centre Drava, municipality of Maribor) were parallely taking place.

The preferential fields of URSPP's invitation were the following:
- renovation and re-urbanisation of towns, i.e. urban space under conditions of market economy,
- improvements of devalued or inappropriately used urban space, and its inclusion in a town's development potential,
- regulation of traffic and other infrastructure, and
- inclusion of natural resources and values in urban planning.

On the basis of the received applications the URSPP in 1996 selected and co-financed urban workshops in the following municipalities, grouped into four categories:
- strategies of long-term development as elements for amending plans (municipalities: Dravograd, Izola, Roga'ka Slatina),
- possibilities of urban design solutions for further development of settlements as a whole, or of their particular areas (municipalities: Brda, Gornja Radgona, Novo mesto),
- re-urbanisation of a devalued industrial area and including it in a town's development potential (municipality: Jesenice),
- regulation of the influential area of a primary urban road (municipality: Nova Gorica).

Since it concerns a topical issue and an important subject we feel it is necessary to presents some views on the general purpose, organisation, course and results of workshops. Primarily we would like to stress the importance of the urban design workshop as a stimulator of involving the economic sector and the broader public in the process of planning and designing settlements.

1. The General Purpose of Urban Design Workshops

An urban design workshop is defined as a period of discussion and practical work, in which a group of people share their knowledge and experience on a particular subject (Oxford/ Webster Dictionary) [1]. In the process of planning it should be understood as an instrument, whose characteristics facilitate planning. Why?

The urban design workshop is an appropriate opportunity for active co-operation and education of different participants in the process of planning; this applies particularly to businessmen and the broader, lay public. It is important that in most cases in the course of workshops consensus is reached on design proposals that will later be included in concrete planning documents.