CREATIVE INNOVATIONS

FOR THE SUSTAINABLE CITY

WIDENING THE RANGE OF THE POSSIBLE

by

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A.   CITIES: A PRIVILEGED PLACE FOR INNOVATION

The city is a dynamic and complex socio-economic and human ecosystem (EC 1996; OECD 1996b; World Bank 1995a). It is a high place of encounters, challenges, sociability, confrontation, dialectics and emotion (Ascher 1995; Hall 1988; IFHP 1993; La Ville 1994b; MOPTMA 1995; OECD 1994; UNESCO 1995). Magistral definitions approach very differently, yet complementarily, the soul and essence of a city. According to Aristotle, city is "built politics": there is high interaction between the political values predominating in its governance and its form. Vitruvius wanted the city to be solid, beautiful and useful. J. Jacobs defines the city as a settlement that constantly generates its economic growth from its own local economy. She argues that cities don't grow as an enlargement of what is essentially already there (preformation theory). They grow by processes of gradual diversification and differentiation (epigenesis theory). "Cities are wholly existential, their being and the sources of their growth lie within themselves...Adding new work to older work proceeds vigorously and creates possibilities for change" (Jacobs 1969). 25 centuries before Alcaeus had said: "Not houses finely roofed, not the stones of walls well built, nor canals nor dockyards make the city, but men able to enhance their opportunity".

Europe is first and foremost urban. It is also made by men able to enhance their opportunity. After the fall of the Berlin Wall, European geography has been reconciled with its history.[1] According to the Commission's Green Paper on the Urban Environment (hailed by the cities of Europe as the first sign of interest by the European Union in cities) and the Reports on the Sustainable City, as we move towards the 21st century, cities will continue to be the main centres of economic activity, innovation and culture (EC 1990, 1994a, 1996). In the 1990s, cities emerge stronger on the European scene, they compete more, but they also collaborate more. They establish brown, green and grey agendas to upgrade their environment and their capacity for innovation. They all want to win the battle of sustainable development and to become more attractive to people and capital (Burtenshaw et al. 1991; DATAR 1993; IFHP 1993). But cities become more ambivalent; there are cities that include but also exclude, that assemble but also divide, that integrate but also disintegrate, enrich but also impoverish, fulfil but also drain potential. Turning problems into opportunities is a paramount challenge for all actors and decision-makers (EF 1992a-c; EF 1996b; Hall 1995; MOPTMA 1995; OECD 1994, 1996b).

The European urban system now appears more balanced in terms of demographic growth. It would be more correct to speak about a series of national urban systems, since there is no single urban hierarchy (Hall 1993). However, new migration waves appear on the horizon. Urban continuums, like the Randstadt, develop and networking is a must for cities willing to build upon each other's experience. Owing to environmental problems and social shockwaves large cities can no longer continue to grow. Potential is increasing for intermediate cities, the "small large" cities, which combine the advantages of small and large cities and offer citizens more harmonious environments (EC 1992c,d, 1994a,b; EF 1992c, 1994b, 1996a). In fact, Europe is the continent of medium-sized cities. By the year 2000, none of the 20 largest cities of the world will be in Europe. Only London and probably Paris may be world cities (Sassen 1991, The Bartlett-Comedia 1994). Last but not least, the united Europe is not the unique Europe. The North-South and East-West divides are also sources of enriched dialectics.

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[1]   This brings to mind the well-known interlinked definitions by Elisée Reclus that "geography is nothing other than history in space", and "history is geography in time".

Cities, in the midst of change, try to reduce global unsustainability and become competitive. The interrelated social dimensions seem also to be of primary importance for European cities, which try to manage change with more determination and understanding of both the competitive pressures and the social implications. The interaction between the local and the global and also with everything that is between them, at the regional and the national levels is the object of many analyses and reflections. The space of flows (global) is in multiple interaction with the space of places (local) and the cities gain an increasingly dual (global-local) function (Sassen 1994). Competition is geographically uneven and new technologies have the power to shrink distance and to extend geographical distribution. Both the vanishing city and the omnipotent city are possible, with all the variations between them (EF 1993b).

Cities are networks of networks and at the same time the poles of global networks. With the increasing globalisation of the economy and the advancing international division of labour, many cities gain importance as places where the economic networks can be decoded, condensed, converted, metabolised. They produce more wealth than their demographic weight in the national framework. Cities are the only places where decision-makers, entrepreneurs and citizens congregate at a point beyond which synergetic effects are more important than the accumulative ones. Economic diversification, social heterogeneity and cultural diversity have always been their main assets. Sustainability has been the most emblematic term in recent years. From an initial environmental definition, it embraced more and more socio-economic visions. More and more research suggests that finally the sustainable city will be community's and business investment in the future (OECD 1996b).

Creating the cities of the future is a visionary act, producing only prototypes and limited by the unique cities that already exist. Nobody denies their ambivalent potential. There are cities that include, but also exclude, assemble but also divide, integrate but also disintegrate, enrich but also impoverish. What turns problems into opportunities and makes assets out of liabilities is the concentrated human power, its capacity to create and innovate. Many cities went through cycles of growth and decline but almost always survived. Their tremendous inertia in time has had various interpretations. Their capacity of renewal helped in formulating various hypotheses, as changing and dynamic as the city itself (Hall 1988).

The close interactions between urban hardware and software mark a city's form and pace of development. Even if the hardware is particularly local and the software particularly mobile and invisible, their special osmosis is generator of change. One could recall the most valuable observation of J. Jacobs that the quality of urban hardware reflects the quality of the software, that "conformity and monotony are not attributes of economic vigorous cities. They are attributes of stagnant settlements". Physical environments of run down areas or segregated peripheries reflect high levels of deprivation. The hardware of cities is however changing in much more long term than the software. The unanimously wished change is the passage from the greedy, unequal and indebted city towards the green, resourceful and equal city of solidarity and sustained economy.

Cities seem convinced of both that they need to change and that the future they aim at cannot be the linear continuation of the past especially if in the era of searching for sustainability, we are persuaded that past patterns and trends lead to an unwelcome reality. Global economy gives the opportunity to many more cities of the world to become parts of a global city, but this world conglomeration might have strong central quarters and peripheral weak ones. D. Harvey suggests the strengthening of the social place as the best way of meeting the new challenges emerging with globalisation. This cannot come as a linear continuation of the past. New elements have to be injected into the reciprocating system and activate older elements towards the desired direction. It

is these precious elements that we call innovations. P. Hall distinguishes historically innovations into product, process and urban innovations (Hall 1995b).

The stimulation of the social imagination of a city is essential for the conception of innovations to progress towards sustainability. Urban sustainability appears as composed from environmental, social and economic sustainability, with increasing common parts and fuzzy edges. The priority fields of action for environmental sustainability include energy savings, sound resource management, prevention and reduction of pollution and unsustainable mobility, urban ecology and reduction of the charge on the global environment. Socio-political sustainability aims at social equity, employment creation, housing improvement, local democracy, solidarity and citizenships, education and culture, accessibility for all, partnerships with all living forces of the society, integration and identity. Economic sustainability is reached mainly through the regeneration of the economic web, incubation of businesses, generation of new income and efficient use of space and time.

Cities need innovations and breed innovations. There is no innovation without creativity and imagination, preceding the birth of new ideas. Cities are places where exceptional individuals meet, where ideas cross-fertilise, where creativity concentrates, since there is no other source of innovation than people, human brains and hearts. The critical mass of the agglomeration and the diversity are preconditions for the creative city, a city with the potential of mutual reinforcement, a city which can compose a better future out of its people creativity. This presupposes a recognition of the creativity of all actors and of each individual citizen; it needs encouraging innovation from within, from below. As the whole of a city is much more important than the sum of the parts, the collective creativity of a city is much higher and synergies increase all opportunities for multiplier effects.

Innovation is a necessary but not sufficient element for change. From a new idea to the grafting into a mainstream policy, the birth, growing up and death of an innovation, depends on a city's creative assets and their mobilisation towards solving urban problems and not only adapting to change but creating the desired change. Innovations have to address complex crossdisciplinary, lateral and synthetic realities, but they don't have to be complex and they should not be complicated solutions. Very often, established administrative and financial structures nullify the possibility of innovations. Sometimes innovations which are extremely easy to implement, die because of the inadequacy of closed frameworks. Innovations are also needed to overcome the obstacles to innovations. Redressing the imbalances and addressing the flexibility of structures represents a vast field for innovation and change. Discrimination is the other major prohibitive factor. It creates flaws, it feeds unequally creativity, it blocks the access to a fertile ground for innovation, if generated by non-recognised actors. Success of innovations is never a certainty, but not undertaking innovations is certainly a failure. Sterile cities stagnate, fertile cities progress.

The Foundation's project on urban innovations in the European Union started out with an attempt to define the concept of innovation. Probably the best definition remains the classical one by Professor Ian Mackintoch: "Innovation = new ideas + commercial exploitation", but is not always easy to redefine it in terms of public policy. The project included an overview of urban innovations with 110 projects from all EU Member States covering a whole spectrum of interventions of varying types, fields, costs and scales (EF 1993a, 1996b, 1996c). The selected projects show that the way from the birth of an idea to a concrete innovation is a long one. It needs commitment and enthusiasm from the actor that conceives it. It needs confidence that the innovation brings a plausible option. It needs willingness to accept responsibility, it also needs encouragement. A lot of creativity in addressing specific problems is lost, because of the lack of care for nurturing it and

making out of a baby-idea a young dynamic organism. Responsibility is shared among all actors. Nurturing creativity can be contagious, it can create a climate for mobilizing more creative potential.

Operating in a climate of uncertainty requires the right to (purposeful) trial and (constructive) error. Each successful innovation is probably the result of various trials, it might constitute itself a less successful stage of a most successful initiative. Imitation seldom requires as much trial and error as innovations do, but it is a "shortcut, an economic borrowing" (Jacobs 1969). The more innovative an innovation is, the more trials it probably requires until it will be accepted as an innovation. The recognition of an innovation as success depends as much on the proof of the achievement as on the ability of others to recognise it. Evaluation and feed back are essential elements of the whole process. There are no other means for improving the prospect of success and reducing the associated risk.

B.   INNOVATIONS TOWARDS THE ENVIRONMENTALLY SUSTAINABLE CITY

The city functions as a genuine ecosystem. A European city of one million inhabitants consumes every day, on average, 11,500 tonnes of fossil fuels, 320,000 tonnes of water and 2,000 tonnes of food (EEA 1995a). Stabilizing consumption is a major objective. The Charter of European Sustainable Cities and Towns recognizes that decreasing consumption levels in the greedy cities seem quixotic (ICLEI 1995). The North, with 25% of the world population and 75% of resource consumption has an ecological footprint (evaluating and aggregating the biophysical capacity of land surfaces needed to produce the resources necessary for cities and to absorb their waste) six times heavier than the South. If the South were to increase its consumption by 50%, the North would have to decrease its consumption by 15%, which would represent a drastic change in habits and patterns. Urban models promoting these changes may lead to the renaissance of the whole planet.

Cities are main contributors to, and victims of, global environmental problems. Their development should be carried out with regard to the availability and the distribution of resources. Multiple factors (resources, water, air, waste, health risks, heritage, etc.) must be taken into account, as they interact among themselves. Before defining any urban policy, the state of the city's environment must be well understood. Environmental observations are important tools for the management of cities. Integrating ecological concern in all urban policies has been a key definition of the Ecological City (OECD 1996b). More and more cities recognize the need for integration and proactive rather than reactive policies leading to the conception of new systems of production and consumption (EF 1992a, 1993a, 1995a). "Green City" does not simply mean green spaces, grass roofs, timber frame constructions, improved energy systems and water cycles (Elkin & McLaren 1991; Girardet 1992). A whole cultural reform is needed to give meaning to all technical achievements (Petrella 1993).

Environmental plans and charters are being prepared by many European cities, introducing various types of partnerships. Implementing Local Agenda 21 is a noble common objective and the Sustainable Communities Project in the UK marks a step in this direction. In Finland, the Lahti Environmental Forum, established in 1993, tries to bring together the different parts of society in order to essentially promote sustainable development in the Lahti area. Commitment of all is a key concept. In France, environmental charters constitute contracts between the State and each city. The Charter of Mulhouse is a clear example of the strong will to improve the environmental and public health. The general objectives of the Charter are the protection of natural resources, the

improvement of life for the inhabitants, the adoption of a perspective "Health and Environment", the promotion of urban safety, the integration of socio-economic objectives with the preservation of the environment and the participation of citizens (Ministère de l'Environnement 1993; EF 1993a, 1995a).

Sustainability management tools include sustainability accounting and reporting, indicators, strategic environmental assessments, sustainability appraisals and eco-auditing (EC 1996). Environmental auditing in the public sector and especially among local authorities is a recent but rapidly expanding phenomenon. It becomes an important instrument for challenging the environmental performance of cities. From the internal auditing of the municipality to the external auditing of the community (a possibly unfortunate distinction), the field is still in a state of flux and it is difficult to provide a well-defined paradigm of hybrid methodologies. Cities and enterprises take many parallel ways when conducting their environmental auditing. It is essential to have the rigour associated with financial auditing in the process and diagnosis to be followed by prognosis. The environmental balance sheet of Sundsvall with the accounts of stocks and flows of environmental resources, the auditing of all urban activities in Igualada and the richness of the components of environmental auditing in Kirklees offer a horizon of models and lessons at the vanguard of urban eco-auditing (EF 1995a, 1996b).

Cities compete with each other to gain environmental credentials. It is a healthy battle, when translated from words into deeds. Many cities declare themselves "Green City" or "Sustainable City". Leicester was the first British city to be given the status of Environment City and is trying to become a national and international model of excellence. Leicester Environment City is assisted by the "Business Sector Network" to bring together ideas from the city's commercial sector and provide assistance to businesses, while "Environ", a non-profit-making company, has been set up to provide local organizations with access to environmental audits and advice (EF 1993a). The city is also worth mentioning for other achievements: for its solidarity being achieved through the harmonious coexistence of various races. Recreating cities as places of culture and civilization, as well as places to exert citizenship, is at the very heart of sustainability.

In the Netherlands, the vision for the city of the future is centred around four axes: the liveable city, the well-ordered city, the affordable city and the sustainable city. In Germany, environmental awareness has often been linked to socio-economic change, first and foremost in the cities which have been the scene of many socio-political transformation processes. With the challenges of the unification of the city of Berlin, the ecological restructuring concept, introduced as early as 1984, came into prominence. The concept advocates a new sustainable symbiosis between economy and ecology in the urban landscape and places the emphasis on environmental preventive policies to tackle the anthropological origins of problems (Hahn 1991). The concept has many points in common with UNESCO's MAB research work on the
Resourceful, Liveable City (UNESCO 1988).

Cities reconvert themselves and urban ecology offers them new visions (Rueda 1995). Urban ecology in Berlin, (often called the "recycled city") is an important element for the "renaissance" under way in the city. The often derelict space adjoining the former wall became, once again, a central space for creation and innovation. In Kreuzberg, "Block 103" is an interesting example, highlighting links between social well-being and environmental upgrading. Former squatters of the block have been given the opportunity to own the space they occupied and, at the same time, they have been trained in converting the houses into ecological modern buildings. Special emphasis has been given to energy, water, green spaces and new materials and techniques. Another complex, Block 6, has been the field of innovation for alternative water systems. The system is based on a

combination of cleaning techniques for the water depending on its origin, previous use and destination use. The project emphasizes the learning and communication process. Residents have been trained in "feeling" the process. The system allows 50% savings on water, while the society of inhabitants participates in the technological monitoring (Gelford et al. 1992).

All over Europe, cities become laboratories of ecological innovation, with high experimental value. The Understenshöjden ecological village in Stockholm is a good example of improving urban metabolism with ecological self-building and user participation in the design. Schwabach, a small self-standing German city, offers an example of the efforts to implement an urban ecology planning strategy. The city has been selected from the Federal Ministry because of its unified, dynamic local government and its ecological achievements to date, especially in waste management. Basic principles are that nothing is impossible and everybody has to participate. The pilot study aimed at introducing ecological concepts and actions to a normal city, under normal conditions and with normal funds. After the study, the city council issued guidelines for action and translated them into a concrete programme in its 1993-2003 Model Urban Development Strategy, leading to Schwabach Ecological City (Schmidt-Eichstaedt 1993).

Energy consumption and production patterns are of paramount importance. Energy budgets highlight the large share of transport in energy consumption and dependence on oil. Efforts to increase the efficiency of the energy sector comprise the increasing use of renewable energy resources (solar, wind, water, biomass), co-generation of electricity and heating, the use of more environmentally sound fuels, converting the district heating plant to decentralized combined heat and sewage plants, developing local energy provision concepts and local synergy effects and savings through the improvement of the heating systems. The mini-centre for the co-generation of electricity and heating in Milan tries to develop specific scientific and engineering knowledge in a local context and stimulate the interest of potential users (EF 1993a). Introducing photovoltaic cells for combined production of electric and thermal energy also gains ground in Mediterranean cities and the city of Palermo initiates interventions. In the German Länder, energy-saving measures include the introduction of an "energy pass" to optimize the energy conditions of houses. Scenarios for the transition to renewable energy are being formulated and the Danish national action plan Energy 2000 foresees reductions in energy consumption by 15%, fossil fuels by more than 40% and $C0_2$ emissions by 60%. In energy-efficient urban renewal and residential development, renewable energy is especially used to generate electricity and combined heat and power (OECD 1994b)

Freiburg is a pioneer city in the use of renewable energies. The political and public support create favourable conditions. It is the centre of two national and international renewable energy research Institutes, the Oko-Institute and the Fraunhofer Institute. Solar water heating, passive solar architecture and photovoltaic systems have been implemented. The city has the oldest active solar demonstration house in Germany (built in 1978). A series of terraced houses built in 1985, exhibit the traditional principles of optimised passive solar compact buildings. A recently built commercial solar centre uses photovoltaic cladding. The Freiburg utilities' new tariff structure encourages demand side management and offers more favourable buy-back rates for photovoltaic energy. The latest developments include the first self-efficient energy house in Germany that uses only the sun as energy source. It combines the most advanced solar and energy storage technologies. The virtuous circle of technical demonstration, awareness raising and participation is well established, thanks to the commitment of the city and its citizens.

Water is a vital urban resource. Many Mediterranean cities become thirsty and this problem seems endemic. Maintenance of distribution networks remains a major problem, as their age, pollution leakage and risk increase. Renovation of networks and surveillance systems in order to limit

leakage, which often reaches 30%, is under way or planned in many cities. We are far removed from places like Tokyo, where the setting up of a system for identifying leaks has reduced losses to 9%. Many cities prepare projects to raise the population's awareness of water-saving or adopt incremental rate systems which penalize the largest customers. Good water management requires the consideration of the entire water cycle, including its natural phase (rain, water tables, rivers) and the phase linked to human activity (from collecting water to purification of polluted water). Water observatories allow the meeting of quantitative and qualitative demands for drinking water, the evaluation of risks related to water pollutants and flooding and the elaboration of a water management policy. The "Rivières Propres" observatory in Ile-de-France aims at improving water quality and Barcelona is concerned with water reserves (METROPOLIS 1996).

Concerning waste management, it is suggested to eliminate the term and to replace it with resource management. Reconsideration of the urban metabolism puts much emphasis on waste prevention, action before the waste is generated, even if investments still concentrate on the recycling end. Once generated, waste has to be considered as a resource. Everywhere many innovative actions are being taken for the prevention of industrial waste and the avoidance, reuse and recycling of domestic waste (EF 1992a, 1993a). In Parma plastic waste is being transformed into building material and in Rimini organic waste from hotels into agricultural compost. Each citizen contributing to the latter highly environmental process is rewarded with a plant. An ecostation has been created and its management has been entrusted to former drug addicts (EF 1993a).

The Municipality of Oeiras, in the metropolitan area of Lisbon, set up a backyard composting of organic waste programme. The project aims at dramatically reducing the amount of waste the municipal services collect, transport, treat and dispose of, thus giving inhabitants the possibility to themselves produce a high quality fertilizer for their gardens, and increasing people's awareness of urban environmental problems (EF 1993a). In Aarhus, the Council for Recycling and Minimally Polluting Technology has achieved 60-70% of domestic waste processing and recycling (EF 1992a). In Vaasa, children taught in kindergartens and schools to sort waste, teach their parents to do the same. Separate collection of waste reaches 90% in countries where it is mandatory as in the Netherlands, while waste pricing achieved extraordinary results in cities like Zurich.

Environmental deterioration is also linked to the incapacity of the market to properly manage the use of environmental resources. The absence of markets for air or water is linked to the absence of property fees for these goods. The lack of a price of access is at the origin of their unlimited access. Economic instruments act like substitutes of prices of markets that are costly and difficult to organize. The advantage of economic instruments is that they can be applied using the fiscal infrastructure of a city. In some cases, like air, the application of instruments is done indirectly through taxing the polluters. The passage from the "Command and Control" regulatory approaches to "Polluter Pays Principle" has been a significant step. The fees imposed directly include pricing of water and waste according to consumption and also discouraging the use of the private car. Pricing of domestic waste in Zurich brought admirable results. However, there is much reluctance about urban tolls in Europe, as in Germany, because of reactions from car industries and users (OECD 1993, 1996b).

Environmental problems in European metropolitan areas do not mainly come from production; they come from consumption and mainly from traffic (Banister 1996). Transport systems are being accused everywhere of no longer being able to deliver the expected levels of service. Traffic congestion represents a loss of 3% of GDP in the countries of the EU and traffic infrastructure covers 10-15% of the urban space (EC 1994a). In cities such as Athens more than 80% of the air pollution is caused by traffic. Many of the signs of failure are clearly visible. The great irony is that

this conclusion is virtually the direct result of urban policies in the last decades (Jacobs 1961, 1992). Traffic provisions are like arteries, they should facilitate the flow of vitality and not dominate the body of the city (ALFOZ 1995; Ambiente Italia 1993; Friends of the Earth 1992; EF 1995c). Urban renaissance of spaces and functions is best illustrated in efforts to decrease unsustainable mobility, thus favouring public transport over the private car and giving priority to the pedestrian and the bicycle (UITP 1991).

Mobility has long been regarded as a cardinal urban value. No matter what mobility at no matter what price, can no longer serve objectives of urban quality of life. Replacing the focus on accessibility seems a possible alternative (ALFOZ 1995). The distinction between access and mobility is not a trivial one. Unlike sheer mobility, access means not only getting people where they need to go, but also getting to them what they need, and new information technologies may play a major role in that process. The role of cities in assembling and not dividing may be reinforced with the removal of architectonic barriers, mainly owing to past heavy transport infrastructures (EF 1995c). Removal of these barriers, and the later designation of the recovered space for public purposes, undoubtedly represents an action that is both exemplary and transferable. Integral urban accessibility programmes have been developed in the Spanish cities of El Ferrol and Salamanca. The concrete objectives are the limitation of the obstacles that hinder mobility and the facilitation of access to centres, public transport, public paths, pedestrian crossings, etc. (EF 1993a). Accessibility is linked to proximity; J.Cl. Chamboredon reminds us that physical proximity does not necessarily eliminate social distance.

The private car is considered to be the single most destructive factor for cities. The study undertaken by the European Commission on "A Car-Free City" suggested the reconception of a city in pedestrian terms. A city without cars could be composed of various small units, accessible on foot from one end to the other, separated by green spaces and united by high-speed public transport. The car-free city seems to be not only ecologically efficient, but even economically efficient, as it appears to be two to five times less costly. In such a city, enterprise has new local challenges to meet, as job creation is essential for the self-efficiency of each small urban unit (EC 1992a). Following the EC research, the city of Amsterdam, which, following the example of cities like Bologna, had gone through a recent referendum on the restriction of the private car, organized the conference "Car-Free Cities?" (Municipality of Amsterdam 1994). The question mark does matter, as it expresses reactions, reluctance and inhibitions. On that occasion, the Car-Free Cities Club was launched by cities committed to promoting policies discouraging the use of private cars. One year after its creation the club already has 55 members (Car-Free Cities Club 1994). The Foundation, continuing the Commission's work, carried out research on transport and public spaces, the connective tissue of the sustainable city. The study highlights the passage from car-occupied spaces into noble citizen-occupied spaces (EF 1995c).

Walking and cycling are the only sustainable means of transport. A pedestrian-friendly city is more human. Copenhagen has been a pioneer city in recognizing the social value of pedestrian streets. When the main street, Strøget, was pedestrianized in 1962 (as one of the very early such systems in Europe) there was a heated discussion. Many believed that the scheme was contrary to Nordic mentality and culture; however, it became a great success almost right away. Pedestrianization continued over a period of 30 years and the down-town parking policy aimed to remove 2-3% of the parking spaces per year. With the improvement of the public transport system and the enlargement of the bicycle network, more and more space has been given back to people (EF 1995c; Rautsi 1993). Experiences abound throughout Europe (Burwitz et al. 1991). Oulu, in Finland, is extending its pedestrian zone, which is proving to be very successful, even in temperatures of -30°C. In more moderate climates, Italian cities (Perugia, Bolzano, Spoleto, Rome)

have been pioneers in creating pedestrian cultural environments. In Naples, places like Piazza de Plebiscito rediscover their former splendour after the removal of private cars. And Venice remains always the archetype of a car-free city.

Pedestrian areas become new pulsing arteries of urbanity and creativity. In Perugia, the pedestrianization of the historic centre started in 1971. Escalators have been constructed in the rock to connect the old city with the modern one and with parking spaces. The passage through the escalators created a valorized space of urban archaeology (EF 1993a). The city carried out innovative experiments by reorganizing the bus network, especially for peripheral zones. The telebus service, introduced in 1985, runs along a principal route, with additional collateral routes, which are served only by request. This is done by means of a magnetic card distributed to the user and a communication centre. The system has proved very efficient (22% savings) and it is particularly interesting in areas with sparse settlement. Increased flexibility in the organization of collective transport operators permits the better adaptation of supply to the changing pattern of user demand. Moreover, this type of system provides access to transport for people with reduced mobility (EF 1992c).

Cycling is the other sustainable transport mode, after walking. Is it an urban paradox that both walking and cycling have been more developed in northern, rather than in southern cities where climate allows more outdoor activities? Is culture stronger than nature and climatic conditions? Amsterdam is the European city with the most elaborate bicycle network, complementing the road and canal routes (Ambiente Italia 1993; Friends of the Earth 1992). In cities like Copenhagen, Münster and Erlangen, 35% of all transport needs are satisfied by bicycle, while in cities of the former RDA, like Dessau, the use of the bicycle is falling (EF 1996a). Cities like Basle can be crossed and enjoyed by bicycle, while the cities of Zurich and La Rochelle lend free bicycles to citizens and visitors.

In Evora, one of the World Heritage cities, traffic management is largely impacted by the form of the historic city, surrounded by an ancient wall. Most of the commercial tourist and social services that generate traffic concentrate within the city centre. The number of cars has almost doubled during the last decade. The Municipality of Evora prepared a plan to deal with the excess traffic in the historic centre, the chaotic parking situation and to improve the quality of life of citizens and tourists. The public transport and parking system will be managed by a single company. The project includes the creation of large car parks outside the city walls, a high-quality public transport system, with mini- and microbuses, well adapted to the existing narrow, medieval streets, park-and-ride and the creation of pedestrian streets and bicycle paths (EF 1993a).

Many cities realize that a single authority for public transport and private car parking could internalize more equitably the environmental costs of private motoring and improve public transport. Udino is a good example. In Orvieto, the alternative mobility system also has many innovative elements: the system has been created out of the need to improve urban life which had deteriorated because of tourist buses driving in the historic town on top of the hill, the fragility of the rocky morphology and the will to revitalize the old funicular railway. With the completion of the system, all cars will be parked in large car parks at the foot of the Orvieto hills, the funicular railway will take all passengers to the top of the hill and a system of minibuses will take them around the city. This system will be completed with the creation of escalators through the rocky caves and the management with monétique. The town of 10,000 people is expected to be less affected by the 2 million visitors per year (EF 1993a).

In Germany, the concept of "short distances" gains ground in many cities. Heidelberg, Freiburg and Basle have been pioneers in introducing low-noise vehicles in noise protection districts and eco-tickets for public transport. Clean, silent and fast tramways are gaining acceptance in European cities. Nantes, Grenoble and Strasbourg introduced from 1985 onwards three technological generations of tramway. In Valencia, the new tramway is called "a tramway named Desire" (ALFOZ 1995). Moreover, pertinent and systematic combination of means is highlighted in many innovative projects. In La Rochelle, a new multi-optional concept (Autoplus) has been introduced through a partnership between municipalities, the semi-public company for public transport, taxi owners, two private bus owners, one ship owner, hotel owners and a bank. Information and consultation campaigns have as their objective the limitation of the private car (EF 1993a). In Toulouse, the city, the semi-public enterprise for public transport and the society which has created a smart-pass, work together for the readjustment of the transport services to people's needs (EF 1993a).

Fast, clean, comfortable, flexible, easily accessible, silent and beautiful public transport is a precondition for persuading citizens to use fewer private cars (EF 1995c). Even if Europe seems far away from places like Tokyo, where only 1% of commuters use their private car, there are many innovations in upgrading public transport. Examples at the leading edge include experiences from Swiss cities (Zurich, Basle, Berne) and German cases (Freiburg, Bremen, Aachen). Zurich is one of the few cities that has developed a coherent solution to a problem of traffic build-up at intersections. Preserving and upgrading the tram system and rearranging the bus lines were the key elements of the improvement of the public at work. The particularity of the system is its ability to deal with each Public Transport Vehicle individually, allowing it to cross intersections without stopping (IULA 1991). Deregulation progresses slowly in Europe (Banister & Berechman 1993) and subsidies will continue to be needed in order to combat the attractiveness of the private car.

C.   INNOVATIONS TOWARDS THE ECONOMICALLY SUSTAINABLE CITY

Jacobs gives a very good definition of the economically sustainable city by considering the city as a primary economic organ. Global economy becomes stronger with the strengthening of creative interdependent city economies (ACDHRD 1995). Improved macro-economic management is a necessary, but not sufficient, condition to improving productivity at the city level. The productivity of the urban economy depends greatly on institutions and infrastructures. Deficiencies in info- and infrastructures, the heavy cost of inappropriate urban regulatory policies, financial and technical weaknesses of municipal institutions are important constraints, whose cumulative effects drain the potential for urban economic development. Within the European Union, increasing environmental deterioration and poverty in cities are considered to be the main factors reducing their economic productive potential. Creating an enabling policy environment for more productive urban economies needs reinforced institutional capacity and financial services, improved regulatory frameworks and flexible structures and adjustments that will allow cities to be sustainably innovative and inventive (EC 1996).

With the acceleration of economic and financial integration, many European metropolitan cities become control and command centres (EF 1997). Intelligence is the main good and value and cities are the places where the world's invisible production chains interlink. Synergetic effects are much more important than accumulative ones. Competition can no longer be an impediment, it can become an incitement. A diversified urban economic basis is considered to be a must for entrepreneurial flexibility, irregularity and fragmented demand. The role of enterprises in the shift from goods handling to information handling is essential. Large enterprises may lead to the "edge

city" (Garreau 1991), but SMEs have potential in revitalizing the city which does not accept its urban life being organized around megamalls (EF 1995b). Partnerships are linked to a shift in public policies from direct interference to indirect (or conditional) policies (incubation and innovation) (INTA 1995; World Bank 1995b). Public-private partnerships should work as an orchestra (private) with its conductor (public) for the overall improvement of urban functions and life (OECD 1994).

Industrial, technological and business parks are mushrooming throughout Europe and provide some interesting examples of public-private partnerships for turning areas of blight into healthy spaces and areas of positive environmental and economic profit (Castells & Hall 1994). Stockley Park, a former derelict rubbish tip, within the green belt to the west of London, gives an inspiring example. A partnership between the developer, the local authority and the university created an international business park and public parkland including recreational facilities. In exchange for the right to construct the business park over 36 hectares, the developer guaranteed the reclamation of the whole site (140 hectares), removal of groundwater pollution, environmental enhancement and landscaping. At all stages of the construction of Stockley, local residents were involved in the process through extensive community consultation (EF 1993a).

In Germany, the IBA Emscher Park has been an important pole for urban development and ecological renewal within the northern Ruhr district. Experts from ten European cities, together with the cities and industries of the Emscher region, work for the modernization of coal mining settlements and the creation of new housing, the development of fallow land and the promotion of attractive locations for industry and services. The preservation and re-use of industrial monuments, the landscaping of the Emscher area into a park, the ecological restructuring of the Emscher river and the protection of the water environment are leading to a healthy space. New dwellings have been created on fallow land and with new environment-friendly material. High quality locations for industry and services have been given value. Contaminated areas are insulated and re-used. "Working in the park" is possible through the enhancement of the quality and attractiveness of the area (EF 1993a; Municipality of Amsterdam 1994).

High-quality technology, science and business parks also expand in the Mediterranean area. The Technopolis of Bari comprises a research centre, a training centre and international schools and services. Profits derive from the furnishing of services to business and public administration. The parks aim at responding to demands for innovation and also at creating a new demand for innovation with various stimuli. The IEDA Andalusian Technological Park in Málaga tries to capture foreign and national investment in new technology, to attract research centres and to give rise to the creation and development of endogenous enterprise projects. The network of Science Parks in Greece stemmed out of the necessity to decentralize research activities and to foster a link between research, technology and production. They develop in cities with significant universities and research centres. They are incubators for the development of new enterprises, centres for the promotion of transfer of new technology and enterprising research poles (EF 1993a).

Economic regeneration aims at revitalizing the whole urban fabric, its software and its hardware. The objectives of the programme to revitalize and regenerate Dublin city centre were to redevelop dilapidated areas, halt population decline (the population of the city centre - between the canals - had fallen dramatically, from 260,000 in the 1920s to 73,000 in 1991), strengthen the area as a centre for business and services and create a climate of confidence to stimulate and win back investment. In 1986, a survey revealed that out of 1,000 hectares, 66 were underused (derelict buildings, waste ground and land used as car parks). For over 20 years there had been no new private developments on the quays. The Dublin City Development Plan was published in 1991,

after six years of preparation and consideration of 21,000 representations and objections. It provided a framework, but the City Council had limited resources (and powers) to implement a programme of that magnitude. The scale of the programme required action by the government, which reacted with major initiatives, including the designation of assisted development areas, the establishment of the International Financial Services Centre in a derelict dock area and the Temple Bar project. Positive aspects of the project were the proactive role of the local authority, the integrated approach of that authority and government and the participation of all interested actors (EF 1993a; INTA 1995).

Interesting lessons may also be learned from the rehabilitation of the commercial and waterfront area of Galway. As economic activities relocated to sites outside the city (or disappeared altogether) a central area was left abandoned and dilapidated, being used for marginal activities (warehousing and open-air parking). The 1986 Urban Renewal Act designated this a priority-assisted development area. Economic measures were introduced, promoting rehabilitation as well as new building. The major objective was that any new building should reflect Galway's unique character and atmosphere and promote a mixture of functions considered essential for the vitality of the city centre. By the end of 1992, all derelict space had been rehabilitated and a balance created between shops, services, offices and dwellings. The construction of housing units (much more suited to Irish culture than flats) on the terrace roof of the city's main shopping centre is a good example of mixed functions within one building (EF 1993a).

The conversion of waterfront areas, seasides and riversides for activities of the future is a major feature of several European cities. As a result of economic and technological reforms over the last few years, city-centre ports have disappeared, leaving behind the husk of an infrastructure in need of a new role (Hoyle et al. 1988). Disused dock buildings are being turned into exhibition halls, shops, craft workshops and centres for cultural activities. The Salford Quays development on the Manchester Ship Canal came about through the will to turn derelict space into the ultimate leisure area, respecting the environment and promoting culture (EF 1993a). The conversion of the old harbour area in Gothenburg into a mixed-use city, after the closing down of shipyards, transformed the 4-km abandoned area into a multifunctional city through a multi-partnership between the city, the architects, the former shipbuilding companies and the public. Industrial buildings were given new intelligent functions (EF 1996c).

In Turku, the metamorphosis of an old industry and harbour area into a new arts centre is an inspiring example. Factories and warehouses were established in Aurajoki west bank from the 18th century until the 1970s. Their closure left behind unique urban structures and in 1987 the Turku city council announced an open-air competition for their reuse. The master plan for the area, based on the winning entry "Despina", foresees new buildings for educational, museum and office purposes. Two massive former shipbuilding halls and a former rope factory will form a major fine arts complex, including a conservatory, the Turku School of Art and Communication and the Turku School of Fine Arts. The rope factory was elected, some years ago, as the ugliest building in Turku. The buildings have now been turned into a magnificent mixture of old and new structures in brick, steel and glass (EF 1996c).

D.   INNOVATIONS TOWARDS THE SOCIALLY SUSTAINABLE CITY

Cities become increasingly fragmented, a far cry from the European urban archetype or the great urban utopias. The "Balkanization" of the urban fabric - cities torn to pieces - and the cumulative spiral leading to poverty and distress become an obstacle to the creation and distribution of (class

and intergenerational) urban wealth. The unequal distribution has draining effects on the vitality of the urban activities and it is a source of both unsustainable lifestyles and obstacles to cultural change (EC 1994a). European cities that are showcases of financial power will never become sustainable if they hide social micro-jungles. This is not just the ransom to pay for success, it is a land-mine to success. Urban renaissance must regenerate all these micro-jungles, their spatial webs and their social fabric. Social justice must be seen as a basic precondition for sustainable wealth. Harvey reminds us that "there is nothing more unequal as the equal treatment of unequals" (EF 1992b; Harvey 1983; Young 1990).

The social city, "the city of solidarity and citizenship", cannot be perceived without equity, otherwise it will be the polysegmented city (Moss) or the city of forced solidarity (Durkheim). Even in the most prosperous European cities, there are urban islands where environmental degradation and social exclusion go hand in hand. They are more or less extended zones in run-down city centres or chaotic peripheral zones, where the disadvantaged spatially concentrate. (Martinotti 1993). They remind us of the third or even the fourth world. They are the lowest depths of the city, where the city secretes another city or the tentacular suburbs that have nothing in common with the poetic "tentacular" cities of Verhaaren. They are places of functional impoverishment, with poor housing and insufficient equipment and facilities. Is it a coincidence that the social features of these areas are poverty, delinquency and crime, high unemployment, low mobility, little access to information, education and training? (EF 1992b; Jacquier 1991). Partnership and solidarity are highlighted as European answers towards the city that integrates and assembles (DIV 1995).

The spirals of unemployment and exclusion constitute the most severe problems for cities (DIV 1995) that strive not to become dual cities (Mollenkopf & Castells 1991). In the 1990s, the European Union has stepped up the pace of its action for the disadvantaged and the excluded. In this vast and vague category, one should include the more than 52 million people (15% of its population) estimated to live below the poverty line, the 18 million unemployed and more than 3 million homeless. "A Europe that does nothing to help its 18 million unemployed will be an empty structure" was a recent strong statement of the president of the European Commission at the European Parliament. The European Confidence Pact for Employment is described as a process to restore the confidence of European citizens. Confidence cannot be decreed, it has to be won.

Identifying sources of employment in cities is not an easy task. The need is sharp and the achievements not always promising. The EC's report on "Local Development and Employment Initiatives" identified 17 urban fields as potential sources for job creation (EC 1995b). Services improving everyday life and the quality of the environment, as well as services of leisure and tourism, might have an important potential for employment and enterprise creation. Most schemes include training, enhancing the ability for reconversion, professional guidance and orientation (EF 1993a, 1994b). The Swedish case from Rinkeby shows the importance of the merging of social services and the support for "starting working" in a community highly dependent on social welfare. The project includes meaningful training, the establishment of an SMEs incubator for immigrants and creation of new jobs in activities ranging from crime and drug abuse prevention to dramatic action (EF 1996c).

Kirkegaard said that "it is not the path which is difficult it is difficulty which is the path" and this is more than true when looking for job creation. Innovative projects come from the countries with the highest unemployment in the EU. Ireland is committed to reducing the incidence and mitigating the effects of unemployment, while promoting an open, competitive economy. The Dublin inner city partnership represents a local area-based response to long-term unemployment. The "Argilan" employment, guidance and training project in Vitoria-Gasteiz, Spain, has three specific objectives:

regeneration of the economic web of the city through new professions; qualification and requalification of the labour force, adapting it to the requirements of demand and prevention of social exclusion (EF 1993a). The world's greatest snow castle in Kemi, Finland, provides many opportunities for creative new jobs (EF 1996c).

"The Big Issue" in London gave new opportunities to the homeless and unemployed. Launched in 1991, with the support of The Body Shop, the Big Issue quickly became London's fastest growing publication with a circulation of 80,000 copies per issue and 1,000 vendors. It is now self-financing and expanding in many British and European cities (EF 1993a). The "Big Issue" project is exemplary in linking employment generation with the major problem of homelessness in European cities, which is still far from the 100,000 homeless of New York, but figures are escalating. More than 2,000 homeless seek shelter in the Paris metro stations every night. They are under a two-fold threat, they may drift into delinquency or may become tramps. It is the health of the whole of urban society which is put in question. And prevention is again highlighted as of prime importance.

The improvement of the housing environments, the living cells of a city, leads to the coherence of the urban fabric. Mass housing (social and subsidized) has often created social tensions on the urban fringe. It has often been paternalistic, large, remote, uniform, collective, reactive, anonymous, devoid of management and it has failed. In many European cities, housing is now beginning to be self-regulated, local, personal, individualized, proactive, with corporate neighbourhood space and responsive local management. It has to provide proof of vitality of work and enterprise and to allow personal identification. Vibrant local communities are replacing void neighbourhoods. Many disadvantaged poor estates are going through a radical rethinking of the space and social significance (Delft Institute of Technology 1992; OECD 1996a). A new human face is judged necessary in most of those built quickly and cheaply after the war, as if they were to house interchangeable people.

From Hällefors to Alicante and Reggio Emilia, there are many best practices on reconceiving and improving spaces and functions (EF 1993a). The Mascagni development in Reggio Emilia shows how a multifunctional urban space can be created from a rigid series of anonymous buildings, a functional marriage between old and new, with integrated public services and schemes to create local business (EF 1993a). In Alicante, "the Barrio de Mil Viviendas" (1,000 unit housing development) is being totally rebuilt to house 600 families in a completely different environment. The new plan for the district was redrawn after consultation with residents who asked for more open, flexible, attractive spaces. Unemployed residents were taken on for the rebuilding work and it is hoped that small businesses will take root, including small shops and services, which will ensure a mixture of functions and the district's self-sufficiency (EF 1994b). In Hällefors, in Sweden, the transformation of the housing area Klockarskogen, through selective demolition, provided opportunities for the creation of a sculptural park to "cover emptiness" and generate skills (EF 1996c).

In Finland, the Top Toijla project tried to activate and strengthen tenants' potential and engagement for the improvement of the Rautala housing area. Ambitious renewal has been achieved with a modest budget. A "community theatre" has been created to identify and solve problems and nourish visions and actions. In Sweden, the Athena Housing Project in Örebro, creates high quality housing environments, ecological, safe, functional and beautiful. The project group, consisting only of women for the design, building and owning of the housing, insists on the role of participation for making changes inexpensive. In Vienna, the Urban Gürtel Plus project aims at improving living and income conditions in the western Gürtel area, where 34% of the population are foreigners. The

revitalization of the local economic structures and the creation of 400 new jobs are considered to be a must (EF 1996c).

The renewal of the Holly Street Estate in the UK provides an interesting case. The estate was constructed during the 1960s and 1970s as a series of slab and tower blocks, replacing the traditional two-storey East London row houses. The estate, comprising 1,187 dwellings, became notorious for its state of deprivation, crime and delinquency. The Borough Council recognized that the only means of dealing with the problems of Holly Street was through its demolition and reconstruction. The renewal project was initiated in response to the British Government's Comprehensive Estates Initiative, making funding available for the redevelopment of social housing estates whose physical and social decay is so severe that refurbishment is not viable. This is an effort to maximize every opportunity for community and economic development through the redevelopment process and to help break the cycle of welfare dependency and poverty. Pleasant Victorian-style houses replace the tower blocks, giving opportunity for home identification (EF 1993a).

There is everywhere a need for intelligent buildings and home environments. The Social Housing Association in Greece created an innovative residential village for low-income households, called the Solar Village. The design and planning of the area constitute an experiment, as it exploits sunlight to the maximum and provides many environmental benefits (EF 1993a). The Danish co-housing concept offers an innovative approach, reconciling the need for new forms of housing with the demand for sustainable development. There are about 30 co-housing communities in Denmark, each comprising 20-50 households. They consist of individual and owner-occupied houses, each one of them designed by the owner himself. A communal house, in the middle, includes a communal dining-room and various workshops and facilities, from a playground to an organic garden and a couple of wind turbines producing electricity.

Urban safety is a major challenge for cities. Car accidents and delinquency put cities at risk. Crime is, in some cases, in linear relationship with unemployment. Graffiti attacks, not related to any form of artistic expression, seem to be the post-modern way of attacking public spaces and property. Transport enterprises are the ones most affected as transport spaces and mobile elements are main targets. RATP in Paris set up a specific service for the prevention of graffiti attacks through research on the attackers and on more efficient ways of preventing and repairing damage. Cities have set up innovative direct or indirect crime prevention plans. Danish cities are experimenting with a series of action plans, focusing lately on the strengthening of area consciousness through the inhabitants' involvement in the creation of a better physical residential environment. The safety committees in the neighbourhoods of Barcelona are being constituted by citizens engaged in improving the everyday quality of life (EF 1993a).

An innovative integrated approach to fighting graffiti in public spaces has been developed in Maastricht. The project includes extra means to trace the offenders, education programmes to improve the skills of the graffiti "artists" and an anti-graffiti bus with formerly unemployed people specialized in removing graffiti. The city made a wall available to every citizen wishing to express themselves through the means of graffiti. Within two years the damage caused by graffiti pollution decreased considerably (80-90% at the railway station). The result of prevention is always hard to prove, but it is clear that graffiti has decreased considerably in Maastricht. Tracing and conditional or alternative punishment have a noticeable effect on preventing recidivism, while there are former offenders, who, after their artistic training, have become famous artists (EF 1993a). The project is now expanding in the region.

E.   VISIONS AND ACTIONS FOR PLANNING THE SUSTAINABLE CITY

Cities, which Braudel called the "greenhouses of civilization", and Levi-Strauss "objects of nature and subjects of culture", have unique aesthetics, character and culture. There is such a notion as "Euroaesthetics". The Foundation's study on aesthetics, functionality and desirability of the sustainable city shows a number of ways to understand a city's soul, to appreciate the desires of its citizens and to listen to its heartbeat. The study suggests itineraries that can be metronomes of desire in various cities. From Fornovo di Taro to Poundbury, there is a common quest for urban beauty, the ultimate antidepressant. Long rejected as a sign of frivolity and elitism, the beauty of cities, made up of asymmetries, paradoxes and contradictions, is returning to the urban stage (Calvet 1994; EF 1995d; Fortier 1995; Sansot 1973).

A city is something more than the simple addition of people and spaces. It is constituted by relationships and conflicts, convergences and divergences, myths and legends, with not additive but synergetic results (Calvet 1994). Creating the quintessential City Urbane demands science and art. The art of creating the sustainable city can only produce prototypes. Design, the graphic language, involves responsibility for the appearance of a city. It needs strong leaders and enlightened private developers. It takes into consideration efficiency, flexibility and imagination and deals with land management, building masses, preservation and enhancement of core urban elements and citizens. Historical continuity should be respected and historic areas must be preserved as functioning components of the city. Design should enhance continuity and change, reveal the potential of a city's physical and cultural assets and portray humanistic values. Functional coherence should be achieved through various land uses to make a city more efficient and enhance its aesthetic quality. "Special projects" could become a ferment for the whole urban fabric. The city is ultimately complex, to intervene in its operation requires an understanding of complexity (EF 1995d; ISOCARP 1992).

"Building Eutopia" (Doxiadis 1975a) becomes a sustainable planning aim. There is a growing unanimity about the need for urban mix (EF 1995b), reflecting a need for "a little of a city everywhere in the city". The preference for the compact city, as a contrast to the diffuse city, is gaining ground and controversies. The dense, compact city has the advantage of integrating structures and providing shorter distances between home and work or leisure (EF 1994a). Breheny argues that the compact city is not necessarily energy efficient and that it does not correspond to lifestyle preferences (Breheny 1993). Owens suggests that a sustainable urban form on a regional scale would contain many relatively small settlements, some clustered to form larger settlements of 200,000 and more people on the sub-regional scale (Owens 1986). It would consist of compact settlements, probably linear or rectangular in form, where people could live and work (Hall 1995). The interrelated questions of density and compactness are quite interesting with their contribution to reconstruction and sustainability. Reconstruction schemes destroyed cities more than war. "High density" should be distinguished from "high rise". Correa suggests "high density low rise" as the preferred composition (World Bank 1995a).

Besides the allegory of the city, European cities witness a great range of practices that try to create spaces or urbanity. Transport and land-use management represent two powerful and interlinked instruments. Planning laws in Switzerland, Denmark and the Netherlands request further housing and work places to develop in the vicinity of public transport. Minimizing transport and mixing land uses have one critical precondition and consequence: that everybody can find work near his/her residence. Concentration and intensified use of space provide advantages for promoting an urban structure which minimizes rates of flow per person and urban patterns which lead to a drastic

reduction in the contribution to the greenhouse effect, minimization of depletion of non-renewable resources, maintenance of biodiversity, approach to nutrients, materials and components, together with the use of local materials and labour skills.

To the Janus-faced problem of town-planning -preservation versus new development- most cities give the answer: renewal rather expansion, consolidation of the urban fabric and improvement of the suburbs. The "soft urban renewal" in Vienna includes block improvement schemes, enhancement of public spaces and ecological measures. The social criteria insist on avoiding segregation or gentrification. Soft renewal allows inhabitants to remain in place and avail of a range of resident-friendly measures (EF 1996c). In Barcelona, the rehabilitation of the Ciutat Vella, comprising four quarters in the historic centre, is an unprecedented and unique event, in terms of dimension, time and civic spirit. Following the opening of the city towards the sea and the creation of the Villa Olimpica, the whole urban fabric is changing, with the injection of improvements on various scales. Selective renovation, rehabilitation, construction, pedestrianization and greening are the visible elements. Civic centres have been created and have become points of multiple encounters and cultural reference. The invisible elements that made everything happen are the strong neighbourhood groups that have been partners with the authorities, played a pioneering role in the attribution of new housing and services, the dismantling of unsound activities and the whole change of climate (EF 1993a; Rueda 1995).

Cities open to the future cannot be conceived without regeneration of the suburban areas, the places where one does not know if one is "in" or "out" (Touraine 1991). This entails recreating the economic diversification, the social heterogeneity and cultural diversity in the periphery. In the south of Stockholm, the Huddinge Centrum is a successful experiment in transforming a suburban shopping centre into a town square, focal and meeting point for the community. The location, next to the train station, generated the creation of new offices and apartment units and the whole area has been remodelled, after the model of the old medieval city of Stockholm. The Donau-City project in Vienna, aims to create a new skyline to the north-east, across the River Danube, and a new mixed-use waterside quarter (EF 1996c).

Public spaces belong, by definition, equally to everyone. What Koolhas describes as fortresses of freedom (La Ville 1994b) have great potential as islands of urbanity in the archipelago of the city (Council of Europe 1992; UNESCO 1995). Public space is very charged, because of the multiple risks of conflicting interests. Many experts suggest that public open space is not the space "just left" after construction; it should be given major importance as a civic space and shaped as a priority. The unification of the archaeological spaces in Athens and their functional and aesthetic links to green spaces is expected to create a high value public space. Inviting public spaces may foster democracy (EF 1995c). In many cases, "standardized" public space cannot meet its challenges of space for "negotiating" democracy, and becomes space of confrontation and of exclusion. Setting up qualitative recommendations for the functional, environmental, cultural and aesthetic character of the spaces, roads and pavements, roadside plantations and public lighting is very important in forging cultural identity. The Manual of Public Spaces in Brussels is a good example (EF 1993a).

The recreation of cities like "civitas" highlights the reconstruction of the "urbis" as an area of universality, organized in a given territory, increasingly functional and varied (Petrella 1993). Medium-sized cities are among pioneers in this process. The regulatory plan of Siena (1990) is an example of creating modern life in an old city where cultural associations (Conrade) have a power parallel to the city. The special plan of Toledo is based on the following axes: clarification of the dialogue between historic and modern city, enhancement of the historic legacy (consisting of movement spaces, vernacular architectural spaces and the fabric of the streets), accessibility plan

(including access plan for cars, which absolutely have to go to the centre), optimization of the potentialities (coming out from the physical morphology, an island anchored on the valley of Catilla), optimization of the structural image of Toledo and the coexistence of the historic centre with the socio-economic centre, promotion of the functional mixity and articulation of university/cultural/administrative and touristic functions - the plan offers a good radiography of the city and its problems (EF 1994b, 1996a).

Along with urban planning, structural projects contribute to shaping the image of cities, provide landmarks and symbolize their dynamic forces. Often, these structural projects are linked to some unique events that act as catalysts for the future restructuring of the cities and the regions (EXPOs, Olympic Games, etc.). Other projects, such as "Seine-Sud Est", result from a well-determined effort to re-equilibrate the urban fabric. In order to meet their objectives, the projects must synchronize the long-term potentials for continuity and flexibility. Flexibility is imperative for adapting the project to market fluctuations, while continuity is linked to a vision for the future of the infrastructures. In most studied projects, the trend is towards guaranteeing an optional multiplicity of land use and a good spatial, functional and economic integration in order to enhance the vitality and livelihood of the whole area. Barcelona, the city which has been reconciled with its sea, gives a good example. The stable financial structures for the long-term realization of major projects are of the highest importance, while the cost of land and infrastructures is a key issue for economic equilibrium. Consultation and partnership become important on several levels, vertically and horizontally. The success of the projects greatly depends on a constant and affirmed political determination, withstanding changes in elected representation (EF 1993a; Borja 1995, METROPOLIS 1996).

F. THE HUMAN AND PARICIPATORY EUROPEAN CITY: AN AGORA FOR THE 21ST CENTURY

Citizenship means participation. This was one of the important messages from the Attica Workshop (Lavrion, 6-8 October 1995) (EF 1996a). Citizenship must be dynamic, prospective and interdependent. It is a precondition for the construction of the political identity of the European Union (CEMR 1996). There is a unanimously recognized trend: city dwellers are increasingly invited to act as partners rather than protesters (EF 1992c; Healey 1992). Very different projects, ranging from the improvement of exceptional vernacular architecture such as Otranto and Bari, to the tracing of the new metro lines in Valencia, have been crowned with success thanks to the active participation of residents. Efforts for creating citizen-friendly and environment-friendly cities expand. The passage from ego-citizens to eco-citizens will certainly need a lot of mobilization, of education and culture. But no more major decisions concerning the future of cities are taken without the search for a well-defined civil consensus.

Decision-makers should become change-makers. Decentralization, empowerment and devolution are preconditions for meeting the challenges of change. A non-participatory community is inherently unsustainable and citizens' participation is a common denominator for projects initiating the new era. Citizens with conflicting interests come together to prepare environmental laws and charters (IIUE 1995). In Barcelona, hundreds of associations participated in the preparation of the economic and social strategic plan. In Brussels, the consultation procedures for planning introduced new participation concepts. In Reggio Emilia, citizens participate in the compiling of the city budget, with the use of new technologies. Cities like Evora, Siena or Galway have hundreds of citizens' associations committed to cultural activities or voluntary action (EF 1994b, 1996a). In

Dunkerque, neighbourhood committees with young people aged between 12 and 13 years, have proved to be promising for the future of the city (URBANISME 1996).

Women's associations, NGOs, universities and the social partners have great energy to invest in the noble aim of improving a city. Scenario workshops try to bring together different local groups, traditionally opposed, on "neutral grounds" and on "equal terms" to formulate consensus on a vision of a sustainable city (IIUE 1995). Action planning schemes introduced in the UK, but also in Eastern Europe, involve the organization of carefully structured collaborative events in which all local stockholders participate. Urban regeneration is not about places, it is about people and these kinds of event proved to unlock creative individuals, co-articulate a sense of vision and create a momentum, a thrust for the future. Among them, the Action Planning weekends from London to Moscow nourished visions for places ranging from redundant railway lands to docklands (PWIA 1996).

The "Charette" method inspires and teaches. In the resort town of Saltsjöbaden, in Sweden, a proposal for a new modern hotel has been the cause of strong public reaction. Citizens decided to put forward alternative plans respecting the historic and cultural character. Public hearings were organized, exhibitions and alternative evaluation reports were presented and all actors sat together for a new pragmatic vision for the whole area. The committee formed by all interested parties put together a plan for a multifunctional leisure and living area, with respect for tradition (EF 1996c).

Promoting art and culture in cities is a joyful and purposeful means of participation and co-action. From the Kemi snow castle to the Phaliron art project, actions highlight a festive presence, a panegyric iconography. Forms that evoke memory and stimulate imagery will always foster local communities (Charbonneau 1994). A feast for the return of the citizen to the city (before 1994) was suggested by UNESCO in its preparatory works for HABITAT II.

Urban democracy, representative and direct, is a key element to the existence of cities and their capacity for sustainability. Cities have promoted open democracies since the age of Pericles. But democracy may be fragile. It needs an everyday reconfirmation of the civic values, an on-going reinforcement of the civic bond. It has to precede any gestation of visions and plans and touch the heartbeat of the city. Citizens should be transformed from mere users and consumers into city actors and rise to the new challenges of the urban governance (METROPOLIS 1996; Paquot 1994). Cities must endow themselves with strengthening citizen action in local communities (EF 1993d). The Finglas enlivenment project constitutes a strong community planning approach creating self-reliance (EF 1993a). Among the various developments in Europe it is worth highlighting a symbolic one: the recent opening of an Embassy of Local Democracy in Sarajevo.

The art of co-governing cities with all actors from institutions, civil society and the voluntary sector is confronting new challenges. Institutional innovations are needed to provide fertile ground for improvements and creativity. Future citizens have to be given high priority. The "Cities in Schools" project in the UK addresses the multiple needs of persistent truants and underachievers (EF 1993a). The "Children as Urban Planners" project in Kitee aims at educating active citizens in environmental awareness and responsibility for their built and natural environment (EF 1996c). Nine hundred schoolchildren studied the urban history of Helsinki and then redesigned Helsinki City Centre (EF 1996c). Cities generate new identities. New visions emerge, towards a human face for the urban environment (Abbott 1996; Short 1989; World Bank 1995a).

G.   TOWARDS THE COMPETITIVE, INNOVATIVE, CREATIVE CITY

An unusual definition for sustainability is that sustainability is a striving for eternal youth. The term of rejuvenation is also significant. A more common definition is that sustainability is a careful journey without end-point, a journey to Ithaca. A continuous invention of new opportunities, as youth itself, a capacity for innovation which is a non-depletable resource, a permanent thirst for the unknown. Ancient Greeks always had an altar to celebrate the unknown god (EF 1993a, 1994a). Many urban policies have failed, but failure has to be seen as the birth of a new world. Innovations collectively attempt to tackle the range of urban problems evident throughout Europe: environmental degradation, congestion, social exclusion and marginalization, landmines for sustained growth. There are hardly any innovative projects that are neither the products of partnerships nor of strategic holistic approaches. The vast majority of projects call for decentralization, empowerment and devolution. The longer-term view and the investment of the emerging creative conflicts on this horizon are lessons identified in many projects (EF 1993a, 1994a,d, 1995a-d).

Today in the face of world urban, demographic and economic changes, there seems to be a list of qualities that each city should have in order to be successful. Nietzsche said that "Success has always been a big liar". What is today judged as successful might not be thought so tomorrow, when in cities in full progress "the important is in what will be and not in what has been". Future generations might have different values. Success might also create overconfidence in cities; they are cities than spend too much energy in publicizing their successful innovations, instead of investing in new ones. In all cases it seems also that the list of qualities is much longer in what concerns the software than the hardware of cities, even if it is difficult to divide the matrix of interventions and assess the results.

Physically, a city should be compact, mixed-uses, car-free, public transport oriented, with good housing environments and plenty of working places. Financially, it should be independent and allow for the higher returns from the most productive use of space and time. It should have the economic basis not only for its conversion from a greedy city into a resourceful city, but also for fostering its competitiveness. And most importantly, to achieve all this, it should be inherently open and flexible, proactive and anticipatory, inventive and intelligent, participatory and human. One usually adds that a city should be responsive, but this is a much more passive term. It implies the capacity of cities to respond to change, when most cities want to be actors in the change, to shape it according to their wishes and their visions. This list has been closely followed when establishing the check-list of criteria for the evaluation framework.

One will easily agree that a city with all the above qualities cannot be non-competitive. A city with innovations leading towards this direction, gains. But the final test will always be the continuous quality of life that it offers to its citizens. If we look into the geographical distribution of the identified innovations, we will find many common points with the competition map of Europe. In Italy, 6 out of 11 selected projects (EF 1993a) come from Emilia Romagna, a region with traditional openness and climate of entrepreneurship. One can go back to the Mackintosch definition and reflect on what creates and obstructs new ideas and what leads or not to commercial exploitation. An innovative milieu in research and education and an innovative milieu in business, without forgetting the innovative links between them, may be the two cornerstones for sustainable innovating.

Are innovations the most important goods and services that a city does export ? (J. Jacobs). They seem to be non depletable resources that have the power to mobilise the resolution processes, markets and policies, for the provision of better goods and services (Fig.6). Cooperation,

interaction and mutual enhancement, rather than command and control relationships increase the possibilities for cross-fertilisation of new ideas and commercial exploitation. International intergovernmental cooperation on innovative research and business agreements have a great potential in conceptualising and prioritising challenges introducing innovations. Analysing the best practice guides and paradigm shifts triggers creative capacity. Sound evaluation, openly shared, empowers everyone.

P. Hall, after an extensive study of cultural-intellectual, technological-productive and technological-organisational innovations in frontier and edge cities, highlights the importance of the downstream innovation (and not the primary one) tuned to the market. The continuous ability to ally knowledge to the changing demands of the market place depends highly on the networking of prestigious research institutes to industry. Silicon Valley is probably the best example of world innovative milieu. A permanent innovative milieu may itself be a micro-project for mega-change. It has more strength to deal with innovation property rights or incentives for innovation, typical obstacles to the implementation of new ideas. But it has to have a high social significance and be able to deal also with fighting discrimination in innovation.

If innovation is an art, then it requires knowledge and effort. P. Hall suggests that "innovative cities at their zenith (Athens, Florence, London, Weimar, Berlin) were cities in transition, out of the known, into new and still unknown modes of organisation" (Hall 1995b). Probably the period of transition we go through is a yeasty period for innovation. Innovation might be also the result of the strive for survival. Complex problems that inhibit innovation often create a sharper need for it. After all "necessity is mother of invention" and an ancient legend tells that the God of Innovation is the Son of the God of Scarcity and the Goddess of Beauty in Distress.

REFERENCES AND INSPIRING LITERATURE

Abbott, J. 1996. *Sharing the City: Community Participation in Urban Management.* London: Earthscan

Alberti, M., Solera, G. & Tsetsi, V. 1994. *La Città sostenibile.* Milano: Franco Angeli

Alexandre, A. 1992. Une Cause pour l'environnement urbain. Dans *L'Observateur de l'OCDE*, N° A5

ALFOZ. 1995. *La Ciudad accessible.* No. 109. Madrid

Ambiente Italia. 1993. *Per une Mobilitá urbana sostenible.* Milano

Ansay, P. & Schoonbrodt, R. 1989. *Penser la ville.* Brussels: AAM

Ascher, F. 1995. *Metapolis ou l'avenir des villes.* Paris: Ed. Odile Jacob

Attali, J. 1994. *Europe(s).* Paris: Fayard

Australian Commonwealth Department of Housing and Regional Development. 1995. *Urban Futures.* Canberra

Banister, D. 1996. *Transport and the Environment.* Economic and Social Research Council. London

Banister, D. & Berechman, J. (eds.) 1993. *Transport in a Unified Europe.* London: Studies in Regional Science and Urban Economics

Barrozzi, A. & Tagliaventi, G. 1992. *Il ritorno alla città.* Seminario di studi sulla città di Bologna. Ed. F.C. Panini

Berque, A. 1994. *La Maîtrise de la ville.* Paris: éd. de l'EHESS

Borja, J (ed) 1995. *Barcelona. Un Modelo de transformación urbana* (1985-1995). Ajuntament de Barcelona, Gestión Urban N° 4

Breheny, M.J. (ed.) 1993. Sustainable development and urban forms. *European Research in Regional Sciences*, **2**, 138-159. London: Pion

Breheny, M. & Hall, P. 1996. *The People - Where do they go?* London: Town and Country Planning Association

Bryant, C.R. et al. 1992. *The city's countryside.* London: Longman

Burtenshaw, D. et al. 1991. *The European City (A Western Perspective).* London: D. Fulton Publishers

Burwitz et al. 1991. *Vier Wochen ohne auto.* Bericht über ein freiwilliges städtisches Abentaur. University of Bremen

Calvet, L.J. 1994. *Voix de la ville.* Paris: Payot

Car-Free Cities Club. 1994. *Car-Free Cities Charter.* Brussels

Castells, M. & Hall, P. 1994. *Technopoles of the World. The Making of Twenty-first Century Industrial Complexes.* London: Routledge

CEMR. 1996. *Local Agenda 21.* In Documents of XXth General Assembly, Thessaloniki

Centre National de la Recherche Scientifique & IFRESI. 1994. *Villes, entreprises et société à la veille du 21ème siècle.* Documents de travail. Lille, 16-18 March

Charbonneau, J.P. 1994. *Arts de ville.* Ministère de l'Equipement, du Transport et du Tourisme. Paris

Cheshire, P., Dennis, H., Carbonaro, G. & Bevan, N. 1988. *Urban Problems and Regional Policy in the European Community.* Brussels: Commission of the European Community

Conseil National des Transports. 1991. *Transports urbains et exclusion sociale.* Paris

Convery, F. & Feehan, J. (eds.) 1996 *Assessing Sustainability in Ireland.* UCD: Dublin

Council of Europe. 1990. *European Towns Strategies and Programmes.* Standing Conference of Local and Regional Authorities of Europe. Strasbourg, 6-8 June

Council of Europe. 1992. *The European Urban Charter.* Standing Conference of Local and Regional Authorities of Europe. Strasbourg

DATAR. 1993. *Les Villes, lieux d'Europe.* Paris: Editions de l'Aube

DATAR/RECLUS. 1989. *Les Villes européennes.* La documentation française. Paris

Delarue, J.M. 1991. *La Rélegation.* Rapport au Ministre de la Ville. Paris

Delfan, G. 1994. *Le retour du citoyen, démocratie et territoire.* La Tour d'Aigues, DATAR. Paris: Editions de l'Aube

Delft Institute of Technology. 1992. *European Cities: Growth and Decline.* Conference papers, April

DIV. 1990. *Les Villes contre la délinquance.* Paris

DIV. 1995. *Territoires urbains et exclusion sociale.* Paris

DIV, OECD, URBA 2000. 1990. *Cities and New Technologies.* Paris

Dogan, M. & Kasarda. 1988. The Metropolis Era. Volume 1. *A World of Giant Cities.* Newbury Park: Sage

Doxiadis, C. 1974. *Anthropopolis.* Athens Publishing Centre

Doxiadis, C. 1975a. *Building Eutopia.* Athens Publishing Centre

Doxiadis, C. 1975b. *Action for Human Settlements.* Athens Publishing Centre

Doxiadis, C. & Papaioannou, J. 1974. *Ecumenopolis, The Inevitable City of the Future.* Athens Publishing Centre

Elkin, T. & McLaren, D. 1991. *Reviving the City.* London: Friends of the Earth

ENA Recherche. 1996. *La Ville et ses usagers.* Paris: La documentation française

Etudes Foncières. 1991. *La Mixité comme objectif.* N° 53. Paris

European Commission, DG XI. 1990. *Green Paper on the Urban Environment.* Brussels

European Commission, DG XII. FAST Programme. 1991. *Europerspectives Conference.* Working documents. Namur

European Commission, DG XI. 1992a. *The City Without Car.* Rome: Tecnoser

European Commission, DG VII. 1992b. *Green Paper on Transport (Sustainable Mobility).* Brussels

European Commission, DG XI. 1992c. *Towards a Sustainable Development.* Brussels

European Commission, DG XVI. 1992d. *Europe 2000.* Brussels

European Commission, DG XI. 1993a. *Towards a New Development Approach.* Conference papers. Brussels

European Commission. 1993b. *White Paper on Growth, Employment and Competitiveness.* Brussels

European Commission. DG XI. 1994a. *First Report on the Sustainable City.* Brussels

European Commission. DG XI. 1994b. *For a New Development Approach.* Workshop papers. Brussels, November

European Commission. DG XVI. 1994c. *Competitiveness and Cohesion, Trends in the Regions.* Brussels

European Commission. DG XVI. 1995a. *Europe 2000+.* Brussels

European Commission. 1995b. *Local Development and Employment Initiatives.* Brussels

European Commission. DG XI. 1996. *European Sustainable Cities.* Brussels

European Environment Agency. 1995a. *Europe's Environment: The Dôbris Assessment.* Copenhagen

European Environment Agency. 1995b. *Environment in the European Union 1995*

European Foundation for the Improvement of Living and Working Conditions. 1989. *The General Use of Time.* Dublin

European Foundation for the Improvement of Living and Working Conditions. 1992a. *European Workshop on Cities and the Global Environment.* (The Hague, 5-7 December 1990). Proceedings. Dublin

European Foundation for the Improvement of Living and Working Conditions. 1992b. *European Workshop on the Improvement of the Built Environment and Social Integration in Cities.* (Berlin, 9-11 October 1991). Selected papers and conclusions. Dublin

European Foundation for the Improvement of Living and Working Conditions. 1992c. *European Workshop on Land Management and Environmental Improvement in Cities.* (Lisbon, 6-8 May 1992). Proceedings. Dublin

European Foundation for the Improvement of Living and Working Conditions. 1993a. *Innovations for the Improvement of the Urban Environment. A European Overview.* Dublin

European Foundation for the Improvement of Living and Working Conditions. 1993b. *L'Impact de la domotique sur les fonctions urbaines.* Dublin

European Foundation for the Improvement of Living and Working Conditions. 1993c. *Telelifestyles and the Flexicity.* Dublin

European Foundation for the Improvement of Living and Working Conditions. 1993d. *Strengthening Citizen Action in the Local Communities.* Dublin

European Foundation for the Improvement of Living and Working Conditions. 1994a. *European Conference on Urban Innovations.* Reports. Dublin

European Foundation for the Improvement of Living and Working Conditions. 1994b. *Visions and Actions for Medium-sized Cities.* Dublin

European Foundation for the Improvement of Living and Working Conditions. 1994c. *Urban Innovation and Employment Generation.* Dublin

European Foundation for the Improvement of Living and Working Conditions. 1994d. *Bridging the Gulf.* Dublin

European Foundation for the Improvement of Living and Working Conditions. 1995a. *Urban Eco-auditing and Local Authorities in Europe.* Dublin

European Foundation for the Improvement of Living and Working Conditions. 1995b. *Le PMEs dans la revitalisation de la ville européenne.* Dublin

European Foundation for the Improvement of Living and Working Conditions. 1995c. *Transport and Public Spaces: the Connective Tissue of the Sustainable City.* Dublin

European Foundation for the Improvement of Living and Working Conditions. 1995d. *Esthétique, fonctionalité et désirabilité de la ville durable.* Dublin

European Foundation for the Improvement of Living and Working Conditions. 1996a. *Intermediary Cities in Search of Sustainability.* Dublin

European Foundation for the Improvement of Living and Working Conditions. 1996b. *What Future for the Urban Environment in Europe: Contribution to HABITAT II.* Dublin

European Foundation for the Improvement of Living and Working Conditions. 1996c. *Innovations for the Improvement of the Urban Environment: Austria - Finland - Sweden.* Dublin

European Foundation for the Improvement of Living and Working Conditions. 1996d. *Perceiving, Conceiving, Achieving the Sustainable City.* Dublin

European Foundation for the Improvement of Living and Working Conditions. 1997. *Perceive-Conceive-Achieve the Sustainable City. A synthesis report*. Dublin

European Sustainable Cities and Towns Campaign. 1994. *Charter of European Cities and Towns: Towards Sustainability.* Brussels

Evans, A. 1985. *Urban Economics.* Oxford: B. Blackwell

Fortier, B. 1995. *L'Amour des villes.* Liège: Ed. Mardaga

Friedmann, S. & Wolff, G. 1983. World city formation. In *International Journal of Urban and Regional Research,* Vol. 6, No. 3

Friends of the Earth. 1992. *Towards a Sustainable Environment.* London

Friends of the Earth. 1995. *Less Traffic Better Towns, Friends of the Earth Illustrated Guide to Traffic Reduction.* Amsterdam: Friends of the Earth

Garreau, J. 1991. *Edge City. Life on the New Frontier.* New York: Doubleday

Gelford, P., Jaedicke, W., Winkler, B. & Wollmann, H. 1992. *Ökologie in den Städten.* Basle-Boston-Berlin: Birkhäuser Verlag

Girardet, H. 1992. *Cities: New Directions for Sustainable Urban Living.* London: Gaia Books Limited

HABITAT II. 1996. *An Urbanizing World, Global Report on Human Settlements.* Oxford: Univeristy Press

Hahn, E. 1991. *Ecological Urban Restructuring.* WSB (Science Centre Berlin), Paper FS II 91-402

Hall, P. 1988. *Cities of Tomorrow.* Oxford: Basil Blackwell

Hall, P. 1992. *Urban and Regional Planning.* (Third Ed.) London and New York: Routledge

Hall, P. 1993a. Forces Shaping Urban Europe. In *Urban Studies* **30**, 883-898

Hall, P. 1993b. Planning in the 1990s: an international agenda. In *European Planning Studies*, **1**

Hall, P. 1995. The European city: past and future. In *The European City: Sustaining Urban Quality.* Copenhagen, 24-28 April

Harvey, D. 1983. *Social Justice and the City.* London

Harvey, J. 1992. *Urban Land Economics.* London: Macmillan

Healey, P. 1992. Planning through debate. *Town Planning Review,* Vol. 63, No. 2

Healey, P. & Williams, R. 1993. European urban planning systems: diversity and convergence. In *Urban Studies,* **30 (4/5)**, pp. 701-720

Hoyle, B.S. et al. (ed.) 1988. *Revitalising the Waterfront.* London, N.Y., Belhaven Press

ICLEI. 1995. *Towards Sustainable Cities and Towns.* Report of the First European Conference on Sustainable Cities and Towns. Aalborg, May 1994

IFHP. 1993. *Cities for Tomorrow*. Working papers of the 80th International Congress. Helsinki

Indovina, F. 1993. *La Città occasionale.* Milano: Franco Angeli

INTA. 1995. *Strategies for Cities of the 21st Century.* Working papers. Vienna, September

International Institute of the Urban Environment. 1995. *Environmental Awareness Workshops.* The Hague

ISOCARP. 1992. *Design: Three Comparative Studies.* The Hague

IULA. 1991. *International Conference on Health, Environment and Lifestyles.* Working papers. Oslo, July

Jacobs, J. 1961. *Death and Life of American Cities.* New York: Random House

Jacobs, J. 1969. *The Economy of Cities.* London: Penguin

Jacobs, J. 1985. *La Ville et la richesse des nations. Réflexions sur la vie economique.* Quebec: Boréal

Jacobs, J. 1992. *Systems of Survival.* New York: Random House

Jacquier, C. 1991. *Voyage dans 10 quartiers européens en crise*

Konvitz, J. 1995. L'Environnement et les villes. Dans *L'Observateur de l'OCDE,* N° 197

Landry, C. & Bianchini, F. 1995. *The Creative City.* London: Demos/Comedia

La Ville. 1994a. *Catalogue d'Exposition.* Paris: Centre Georges Pompidou

La Ville. 1994b. *Six Interviews with Architects.* Paris: Le Moniteur

Martinotti, G. 1993. *Metropoli: la nuova morfologia sociale*. Bologna: Il Mulino

Masser, I. et al. 1992. *The Geography of Europe's Futures.* London: Belhaven Press

Mastrantonio, C. (ed.) 1991. La Città amica. Rapporto sulle esperienze più avanzate di gestione dei servizi municipali. Suppl., *La Nuova Ecologia* 84, Roma

Mega, V. 1993a. *Challenges for the European Sustainable City.* In the "Sustainable City" (The Prince of Wales's Institute of Architecture, 1993 Summer School). London

Mega, V. 1993b. Ecopolis: Cadre de Vie, Cadre de Ville. Dans *Actes du Colloque.* Nantes

Mega, V. 1993c. Innovations for the Improvement of the Urban Environment: A European Overview. In *European Planning Studies*, Vol. 1, No. 4

Mega, V. 1994a. Improving the Urban Environment: European Challenges. In *AMBIO*, Vol. XVIII, No. 7. Stockholm: Royal Swedish Academy of Sciences

Mega, V. 1994b. *Les Fronts de l'Innovation Urbaine en Europe*. Interview in "Urbanisme", No. 276-277. Paris

Mega, V. 1994c. Le Innovazioni Urbane e le Sfide Europee. In *VIA (Valutazione Impatto Ambientale)*, No. 28/29. Milano

Mega, V. 1994d. Improving the Urban Environment. In *European Urban Management*, No. 1. Brussels

Mega, V. 1994e. *Transport space is public space*. In Conference Papers "Car Free Cities?", Amsterdam

Mega, V. 1995a. City and Innovation: The European Challenge. In *Sociedade e território*, No. 22. Lisbon

Mega, V. 1995b. *New Directions of Ecological Management for the protection of the Urban Environment in the EU.* In proceedings of "HELECO '95". Athens

Mega, V. 1995c. En Quête de la Ville Durable. In *Les Petites Affiches*, N°96, Paris

Mega, V. 1995d. *Local Agenda 21: A Testament and a Tribute to the Cities and Regions of Europe* for the "Irish Conference on Local Agenda 21", Dublin, 9-10 June 1995. Proceedings published by An Taisce in 1996

Mega, V. 1996a. Our city, our future: towards sustainable development in European cities. In *Environment and Urbanization*, Vol. 8, No. 1. London

Mega, V. 1996b. Innovazioni per il Miglioramento dell'Ambiente Urbano: Una panoramica europea. In *La città sostenibile*. University of Parma

Mega, V. 1996c. *La Ville et ses usagers: Experiences européennes* for the conference "La Ville et ses Usagers". Paris: la documentation française

METROPOLIS. 1996. *Metropolis for the People.* Conference documents. Tokyo

Ministère de l'Environnement. 1993. *Chartes pour l'environnement (ecologie urbaine et rurale, qualité de la vie, territoires).* Paris

Mollenkopf, J.H. & Castells, M. (eds.) 1991. *Dual City: Restructuring New York.* Russel Sage

MOPTMA. 1995. *City: Place of Problems and Opportunities.* Working papers. Madrid

Mumford, L. 1961. *La Cité à travers l'histoire.* Ed. Française. Paris: Le Seuil 1964

Municipality of Amsterdam. 1994. *Car-Free Cities?* Working papers

Municipality of Athens. 1994. *From the Organic City to the City of Citizens.* Athens

Nijkamp, P. & Perrels, A. 1994. *Sustainable Cities in Europe.* London: Earthscan Publishers

OECD, 1989. *Energy and the Environment.* Policy Overview. Paris

OECD, Group on Urban Affairs. 1993. *The Ecological City.* Research project initiated in 1993. Working papers

OECD, Group on Urban Affairs. 1994. *Cities for the 21st Century.* Paris

OECD, Group on Urban Affairs. 1996a. *Stratégies pour le logement et l'intégration sociale dans les villes.* Paris

OECD, Group on Urban Affairs. 1996b. *Innovative Policies for Sustainable Urban Development. The Ecological City.* Paris

OECD-ECMT. 1994. *Urban Travel and Sustainable Development.* Paris

OECD-Sweden. 1995. *Urban Policies for an Environmentally Sustainable World.* Stockholm: Swedish Council for Planning and Co-ordination of Research

Owens, S.E. 1986. *Energy, Planning and Urban Form.* London: Pion

Paquot, T. 1994. *Vivre la ville.* Paris: Ed. Arléa, Corlet

Petrella, R. 1993. *Urban Ecology or Urban Renaissance.* Paper at the First Global and European Conference City 93/EPH 93. Antwerp, 25-30 October

Petrella, R. et al. 1992. Dialogue sur la ville. Dans *Cahiers de l'Institut d'Aménagement et d'Urbanisme de la Région Ile-de-France*, 100. Paris

Prince of Wales Institute of Architecture. 1993. *The Sustainable City.* Report on the 1993 Summer School. London

Prince of Wales Institute of Architecture. 1996. *Action Planning.* London

Rautsi, J. 1993. *The European City Today.* The Helsinki Round Table on Urban Improvement Strategies. Helsinki: Ministry of Environment

Rodwin, L. & Holuster, R. 1984. *Cities of the Mind.* New York: Plenum Press

Roullier, J.E. 1989. *25 Ans de villes nouvelles en France.* Paris: Economica

Rueda, S. 1995. *Ecologia Urbana.* Barcelona: Beta Editorial

Sansot, P. 1973. *La poétique de la ville.* Ed. Klincksieck. Paris

Sassen, S. 1991. *The Global City: New York, London, Tokyo.* Princeton UP

Sassen, S. 1994. *Cities in a World Economy.* London, New Delhi: Pine Forge Press

Schmidt-Eichstaedt, G. 1993. *Schwabach, Modell-Stadt-Okologie.* TU Berlin: Institut für Stadt und Regionalplannung

Schoonbrodt, R. 1987. *Essai sur la destruction des villes et des campagnes.* Liège: Pierre Mardaga

Short, J. 1989. *The Humane City.* Oxford: Basil Blackwell

Sterner, T. (ed.) 1994. *Economic Policies for Sustainable Development* Dordrecht: Kluwer Academic Publishers

Tagliaventi, G. & O'Connor, L. 1992. *A Vision of Europe.* Firenze: Alinea

The Bartlett School of Planning, UCL and Comedia. 1994. *Four World Cities - A Comparative Study of London, Paris, New York and Tokyo.* London: Llewelyn Davies

Touraine, A. 1991. *Citoyenneté et urbanité.* Paris: Esprit

Tsetsis, S. 1996. *Towards a European Physical Planning Policy.* Athens

UCD. 1996. *Assessing Sustainability in Ireland.* Dublin

UITP. 1991. *Green Light for Towns.* Brussels

Una Politica para las Ciudades. 1992. In *Revista Estudios Territoriales* **39.** Madrid: Ministerio de Obras Públicas y Transportes

UNESCO. 1988. MAB, *Towards the Sustainable City?* Paris

UNESCO. 1995. *Les Libertés de la ville.* Passages. Paris

URBANISME. 1996. *Hors série nº 6*

Viard, J. 1994. *La Société d'archipel ou les territoires du village global.* La Tour d'Aigues, DATAR. Paris: Editions de l'Aube

Vickerman, R.W. 1984. *Urban Economics.* London: Philip Alan

WHO-OECD. 1996. Our cities, our future. *First International Congress on Healthy and Ecological Cities.* Copenhagen

World Bank. 1991. *Urban Policy and Economic Development; An Agenda for the 1990s.* Washington DC

World Bank. 1994. *Making Development Sustainable; From Concepts to Actions.* Washington DC

World Bank. 1995a. *The Human Face of the Urban Environment.* Washington DC

World Bank. 1995b. *The Business of the Sustainable Development.* Washington DC

World Resources Institute. 1994. Developing environmental indicators. A report on the workshop on *Global Environmental Indicators.* Washington DC, 7-8 December 1992

Young, I.M. 1990. *Justice and the Politics of Difference.* Princeton