

Eco-planning & Management for Adaptive and Appropriate Human Settlement

适应性宜居城市的生态规划与管理

中国·重庆 Chongqing, China



Urban and Transport Management

-- International Trends and Practices

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1. Trends in Mobility and Urbanisation

1.1 Societal Values, Mobility and Spatial Development Worldwide

In advanced industrial countries the societal values, in line with Locke's philosophy, tend to put the emphasis on individual achievements rather than on group solidarity, on the individual's rights, rather than on his duties. Gender complementarities give way to equal access. Producers of consumer goods or services and their marketing advisers have made good use of this trend through detailed customer socio-cultural typologies and refined market segmentation.

In particular the automobile industry has diversified its products to suit individual tastes and quest for individual recognition as well as convenience and comfort. The automobile, together with the individual detached home, reflects a change in social values sometimes referred to as "Me culture" or "mass individualism" (GAUCHET, 1985). This has been a major factor in urban change towards lower density forms of urbanisation because of the space consumption by the automobile and its parking (ILL. 1: Space consumption by mode)

The success story of the car remains in full bloom. According to the OCDE countries statistics during the last fifteen years (1980 to 1995) the vehicle-kilometres travelled increased by 65% while the car ownership increased by 50% and the population by 13%. There are four times more new cars than new babies. Vehicle-kilometres travelled have increased five times faster than the population. Mobility increases much faster than the economy. Exceptions are found in 3.2.

1.2 Observation of Europe's Urban and Rural Space: the Polycentric Paradigm

At European Level, ESPON (European Spatial Planning Observation Network), based in Luxemburg, is collecting available data about land use, urban and rural. Its maps indicate among others a ranking of locations according to the influence of functional urban areas (ILL. 2:

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Urban-rural Typology 1999) and a ranking of locations according to its accessibility or time to reach them (ILL.3: Potential accessibility multimodal 2001).

These observations open the way towards policy discussions about either accepting the spatial trends or trying to change them. Discussions around the European Spatial Development Perspective (ESDP) are illustrated by the debate around polycentric development. The three maps exemplify the views of the peripheral and maritime regions' lobby (ILL. 4: The "evil blue banana"; ILL. 5: The "evil black pentagon"; ILL. 6: The "good global economic integration zones").

Statistical ex-post observations are complemented by real time satellite observations of the land cover (CORINE LAND COVER: www.eea.eu.int). They irrefutably picture the dynamics of Europe's changing urban and rural landscape: nearly a million ha of Europe's land cover were converted to artificial/urban surfaces in the period 1990-2000.

They also give clues about the actual policies at work and their results.

An example of dynamic change revealed by the satellite observation is taken from Ireland. Over the last ten years the urbanisation, i.e. the transformation of agricultural land into urban features such as infrastructure, residence, shopping, etc, is now de facto covering the whole country. EU financed programmes aimed at revitalising agriculture by improving access to farms are shown to provide in fact a subsidy to second residences, as no signs of agricultural activity do appear in the plots benefiting from these subsidies and farm buildings appear to have been transformed into residential use (conservatories, swimming pools, etc.).

Another example of land use dynamics is taken from Spain. Large transfers of water from the Ebro Basin to the urbanising coastal areas of Murcia and Almeria are occurring. The implementation of the National hydro-graphic plan would encourage these transfers, at the expense of existing aquifers. A heated debate is taking place about this issue (ARROJO).

Future progress in observation could include a synergy between satellite imagery of expanding urban use and policy analysis based on common definitions. A forthcoming tool for full fledged land accounting is to start in 2006 and be fully operational in 2009: The Infrastructure for Spatial Information in Europe – www.ec-gis.org/inspire.

The overall finding is that dispersed urbanisation is gaining ground all over Europe, particularly in coastal areas and resort-type locations. The environmental effects are also evidenced, in terms of increased water consumption and pollution of ground water reserves. Policies both reflect and enhance this trend.

1.3 Observation of Specific Urban Areas and Policy Findings



Comparable data about urban areas are difficult to collect.

The definition of urbanised areas does not correspond to the municipal boundaries. Therefore comparisons can only be made if available municipal statistics are reworked in accordance with a common definition

Employment basins are probably the best criteria for defining a functional urban region.

To be comparable, observations of employment basins also need to include the same indicators, measured in the same way.

This exercise has been done for 100 cities in the UITP "Millennium Data base" (UITP 2001).

The observations are for the year 1995 and the Data Base was published in 2001.

The observation of these 100 cities allows interesting comparisons, not only of urban development, but also of policies and their results in terms of land use dynamics.

The illustrations indicate the link between land use and energy consumption and overall cost of personal mobility within an urban area. See ILL.7-(Modal choice and energy consumption per inhabitant) and ILL.8 (Modal choice and transport cost in percentage of GDP).

The general findings of the UITP Data Base, analysed by J. Vivier, could be summarized as follows :

- Public transport consumes in average four times less energy per passenger kilometre than the automobile
- Dense cities of Asia or Europe, well served by public transport and soft transport modes, are spending much less resources for their mobility than the spread-out cities of America or Africa both in monetary terms and in terms of accident numbers :
- The % of GDP spent on transport, not including parking, ranges from 4 % (Copenhagen) to more than 20 % (Jakarta)
- There is a clear relation between public transport use and supply of parking
- Sustainable urban mobility requires an integrated supply of built space, public transport, parking and amenities. In cities where the population is less than 20 inhabitants per hectare public transport costs more to the community than motorised private transport. The higher the density, the higher the patronage
- Growth in income does not necessarily imply an urban development model based on the automobile and urban sprawl. Inversely growth in automobile traffic in developing countries may compromise economic development and worsen the living conditions of city dwellers



- Rail modes and public transport modes separated from general traffic are the most competitive in larger cities, as they escape congestion

To mention specific examples a comparison between Singapore and Houston, cities of comparable size and affluence, indicates that Singapore spends each year 10 billion \$ less than Houston for the transport of its inhabitants, i.e. 3.000 \$ less per inhabitant, while insuring a better accessibility to all its inhabitants, whether or not they use an automobile. Houston comes last in the accessibility ranking and one of the worst in terms of travel times, at a cost of 14 % of its GDP

The Singapore policy favouring the use of public transport rather than the use of the automobile is an example of decoupling between economic growth and motorization. This restrictive automobile policy has not hampered Singapore from becoming the premier Asian business hub, according to the Economist Intelligence Unit Asian survey of April 2002, and a healthy fiscal surplus allowing future tax cuts.

The case of Copenhagen is outstanding: only 4 % of its GDP is spent on transport, due to a combination of some individual automobile use restriction and strong use of bicycle, notwithstanding the Nordic climate. Munich, Frankfurt, Vienna, Milan, Paris and London all spend less than 7 % of their GDP for transport. By contrast, for the Chennai (Madras) or Jakarta metropolitan areas the figure is above 20%.

In a dynamic perspective the findings confirm the UK Standing Advisory Committee on Trunk Road Assessment (SACTRA 1995) about the Generation of traffic. It has shown that the additional traffic induced by new roads is producing in itself a congestion that tends to be higher than in the existing situation

To conclude this first part of the paper devoted to land use and mobility, let us quote Prof. Phil Goodwin's remarks at the 2004 EU Hitachi Science and technology Forum about the effects of urban sprawl: "Congestion will increase in intensity, duration and geographical spread. The supply of road space will not be matched by demand. So demand management will provide the key policy context. Because of this new demand-led policy agenda the way technology is applied to transport will be changing fundamentally. The dream – technology for capacity and speed – is mistaken. It will be replaced by technology for demand management, environmental protection and quality of life" (GOODWIN).

This naturally brings us to the second part of this paper: urban planning.

2. Urban Planning and the European Union's Policies

The EU has no direct competence on urban matters but many of its Directives and



programmes have an impact on them. This is why many cities have a direct representation in Brussels, beside their national and regional representations. These Directives and programmes have become part of the background to be taken into account in urban planning. Most of them have favoured urban dispersal.

- Regional Policy

The regional policy is mainly embodied in the structural funding programmes for areas with below average income (ILL. 9 Map of the priority areas for development help by the EU). It is clear from this map that the European help, namely through the Regional Development Fund help on infrastructure, has been favourable to the peripheral areas in the EU and the areas peripheral to cities, although some help has been provided to urban projects (ILL.11. Photo of Manchester's Metrolink. Metrolink is a pioneering tram-train network replacing since 1992 an old commuter rail line and using the streets as well as the rail tracks).

However the URBAN Community initiative, launched in 1994, has been an important EU programme exclusively in favour of cities themselves. It was part of the follow-up to the Green Paper on the Urban Environment (Com (1990) 218). This Green Paper analysed the complex relationships within the Urban System and recommended a policy combining economic, social and environmental help to cities. Specific actions recommended included improving water quality in Lisbon and Naples and improving air quality in Athens through the construction of a Metro. It recommended support for measures combining land use and transport, traffic management, congestion pricing, enhancement of the historic heritage and urban green spaces.

ILL. 10 shows the huge success of this initiative in number of participant cities.

The URBAN Community initiative allowed direct contacts between the Commission and individual cities, which did not necessarily please the central governments sitting at the Council of Ministers. URBAN II could go ahead as a result of a strong cities lobbying movement. But there will be no URBAN III. It has disappeared from the Regional Programme 2007-2013 (Com 2004/107). An urban dimension could however be introduced in the new Regional Policy Objective II (Enhancing regional competitiveness through the strengthening of cities) and the new Objective III (Territorial cooperation through city networks, programmes and projects).

- Transport Policy

The transport policy is meant to help develop the European single market, and the economic and social cohesion, through major transport infrastructure projects such as the Trans European Networks (TEN), not specifically related to cities. According to most observers the transport policy has been mainly favourable to motorways and transport of goods by trucks, not to a balance between

modes (BANISTER).

- Environment

A major European development in the urban planning field has been the Directive on Strategic Environment Assessment – SEA (Com (2001) 42) – that became compulsory since 21 July 2004. It requires an environmental impact assessment not only of projects but also of urban programmes and plans. It requires an examination of alternatives, and the publication of the findings, before the adoption of the programmes and plans. It aims at integrating the requirements of the specific environmental Directives (air and water quality, soil contamination, noise levels, etc)

On the other hand the Commission has entrusted the European Environment Agency with the preparation of an Urban Environment Thematic Strategy Report (Com (2004) 60). Its preparation is going on and it should be presented around the end of 2005.

- Other

These three areas are of particular importance to cities because of the regulatory and incentive framework they have put in place. Other important areas include IT applications to cities and urban planning (for example intelligent transport systems), Research and Technology Development Programmes (the 7th Framework Programme is presently under discussion and includes themes of interest to cities) and the Cultura Programmes (funding of urban heritage projects).

Besides programmes linked to a specific area of competence within the Commission, cities can benefit from initiatives and programmes spanning over the entire Commission. A recent example of these is the European Governance White Paper (2001) and the Framework for trilateral agreements between the EU, the national governments and regional/local authorities (Com (2002)709). Some agreements have already been signed (Milan).

Last but not least the sheer dimension of the European Single Market has generated a global institutional economy at European level. Tenders tend to be Europe-wide. Planning practices tend to look at Europe-wide partnerships. Urban projects are looking for Europe-wide implementation funding.

3. Urban Planning and Management in the Global Economy: Regulatory Frameworks

Two broad schools of thought seem to emerge from the ongoing practice world-wide.

3.1. Laissez Faire and Creative Chaos

The first one could be summarised as planning along the Business-as-Usual scenario.



Business-as-Usual means the pursuit of the world-wide sprawl of cities (the Ecumenopolis announced by Doxiadis in the 60's). It is also called "Edge City", i.e. a mix of urban development and open space, shaped according to public investments in motorways and urban infrastructures and evolving along the changing flow of private development initiatives. The Business-as-Usual scenario somehow goes hand in hand with the weakened position of the planning profession, as the huge build up of infrastructures was masterminded by engineers, not planners (LACONTE 1). This scenario accepts the growing dominance of individual transport for people and goods, as mobility by cars and trucks are what the trend indicates. Freedom of location, made possible by dispersion, can generate diversity and creativity, knowledge and employment.

To sum up, it sees planning as a consensus-building process (mediating between the main actors within a given space), rather than formulating a vision for a community of citizens living in a specific place.

It however ignores the high economic, social and environmental cost of dispersed human settlements:

The economics of sprawl require a massive transfer of resources from the public purse into the infrastructures and services of privileged suburbs, eventually to become new brown fields. Moving out of the city to the suburbs or beyond is a preferred economic choice for citizens only if the cost of accessibility is a cost not borne by them (external cost). Urbanisation without neither borders nor economic constraints actually undermines the city and its historic accumulation of economic investments.

The social cost of sprawl is the demise of solidarity between generations and classes, richer and poorer neighbourhoods. It limits democratic governance to fragments of the urban space ("urbanisation" vs. "urbanism").

The environmental cost lies mainly in the over consumption of undervalued but nevertheless precious open land and in the increase in fossil fuel consumption resulting from the increase of vehicle miles travelled and the resulting pollution, ground ozone level and acceleration of climate change. Shopping centres are in fact a trade-off between cheaper shopping and costlier travel.

This urban philosophy and practice have been prevalent in the US (WEBBER), with the major exception of Portland, Oregon.

Portland's urban growth has to take place within the boundaries fixed by the 1976 State legislation, what has led to a higher urban density and a reported higher quality of life.

A countertrend seems to appear in the US planning practice, as a result of the successful "New Urbanism" movement, that advocates the development of higher density urban clusters and the

revival of traditional urban settings (www.cnu.org).

3.2. Urban Place Building within the Global Economy

The second school of thought might be summarised as Urban Place Building. Challenging the urban sprawl, this second school of thought has a proactive vision of cities as specific human communities and as specific built places. It pays attention to urban form and welcomes emerging new dense urban clusters, “Cities on the Rebound” and “Liveable Communities”.

It explores the potential of historic heritage and of cultures, both intellectual and popular, for shaping or reshaping urban identity and pride of belonging to a city and it praises the quality factor of personal relations. It takes its inspiration from Christopher Alexander’s timeless ways of building rather than Le Corbusier’s urban functionalism. It encourages mixed use developments that save energy spent on motorised transport and urban centres attractive to both commuters and residents (“back from the edge”). While the creative laissez-faire approach would rather be identified with the US the place building approach would rather be identified with Europe and its tradition of innovative cities and urban entrepreneurship.

3.3. Selected Examples of Place Building

CURITIBA, Brazil: THE ECOLOGICAL PROJECT

The Ecological City (concept by Jaime Lerner and Cleon Ricardo dos Santos) of Curitiba remains more than ever, after 25 years of Jaime Lerner rule (as planner, Mayor and State Governor) a Mecca of sustainable development: booming industry and services, social cohesion, environmental management. The Curitiba master planning process aims at developing five high density corridors. Each of them is served by express buses running on reserved lanes. This idea of an express bus network has been taken over and expanded in Bogota.

Implementation has been made possible through a market-led transfer of development rights from designated low-density areas, landmarks and space reserved for public parks and water catchments.

Citizen Awareness is achieved through strong citizen participation in cleaning and greening, urban education in schools e.g. selective garbage collection) and green jobs for the street children. Social cohesion and abundant industrial techno parks have made it a booming employment place (see www.ippuc.pr.gov.br)

As president of the International Union of Architects, Jaime Lerner has further pursued the dissemination of urban practices favouring environmental quality and solidarity.



BERLIN, FRG: THE CRITICAL RECONSTRUCTION

Since the City regained its Capital status its planning has aimed at reconstructing the central parts along the lines taught by its rich history. Under the 12 year leadership of its “Baudirector” Hans Stimmann, it adopted a strong regulatory planning framework called “critical reconstruction”.

The strict rules on bulk and building height and the fact that the planning regulations include the obligation to provide some 20% housing in all office buildings had striking effects. They generated the production of high density mixed office/shop/housing projects within the authorised bulk limits. These projects often integrated the remains of buildings that escaped the war and the urban massacre of the 50s and 60s. In turn they generated a mix of urban activities, day and night, and appear to be much more resistant to the current overproduction crisis than projects built in the periphery.

A typical mixed use project integrating the remains of a pre-war building is the “Tacheles” project (Oranienburgstrasse), aimed at filling a large site that has remained mostly vacant since the war. Its overall design (by Andres Duany) includes offices, shops and new housing. Individual buildings are to be built by different architects in a way that allows subsequent changes in use (ceiling height 3.20 m; building depth of 13.50 m, etc.). The project integrates existing listed buildings (not only their facades). But its completion will depend on the evolution of the property market.

By contrast to the general master plan, the reconstruction of the Potsdamer Platz, which was part of the Wall, became the responsibility of the Federal Government, owner of the land. The reconstruction was entrusted to the Treuhand (a public body in charge of the privatisation of Eastern German enterprises). The Treuhand in turn sold it, en bloc and with no planning strings attached, to Daimler Benz and Sony. The size of the project and the high density-high rise buildings had the effect of creaming off the demand for new offices in Central Berlin, while the sites between the Potsdamer Platz and the former City centre remained largely vacant.

The “critical reconstruction” process is still fully under way. In spite of the economic crisis Berlin is more than ever Europe’s largest building site and hence a sparring ground for the property world: The advocates of laissez-faire try (without success) to circumvent the master plan, guardian of city planning order, of urban shape and of the existing parcelling out...

The constraints of the Berlin Master plan do in no way exclude international contemporary architecture, represented by, among others, Daniel Libeskind, I.M. Pei, Frank Gehry, Norman Foster, Jean Nouvel and Dominique Perrault (ILL. 12: Friedrichstrasse after its reconstruction and building by Jean Nouvel).

Berlin is the host of the Council for European Urbanism's 2005 Congress (www.ceunet.de).

BILBAO, Spain: BUILDING A CULTURAL IMAGE

The abrupt collapse of the iron and steel-based economy in the 80's generated an acute crisis of the City (350.000 inhabitants) and its Metropolitan area (880.000 inhabitants). It affected the Region's economy and society as a whole (loss of confidence and self-pride). It also brought the realisation that the city should shape a new economic, social and physical vision in accordance with the requirements of a modern service based society, rather than attempting to look at other industries to generate activity and jobs. Industrial activities and jobs had for many decades created prosperity but also a negative urban image. Hemingway remembered it as prosperous but ugly.

The new vision would concentrate on place making and public art, on quality of life and urban pride, on accessibility from the outside and mobility inside. This vision became embodied in a strong general master plan for the City adopted in 1989 (Ibon Areso Mendiguren, chief planner, presently political head of planning as Deputy Mayor). The master plan concentrated on the transformation of the industrial waterway that crosses the city and links it to the Nervion Estuary. The implementation of the master plan was only possible if the key areas along it, such as railway yards and old warehouses, were controlled by a single hand instead of a multitude of public fiefdoms pursuing their own agenda. These fiefdoms included State agencies, the Province and 30 municipal governments. The crucial step and key to the Bilbao renaissance was an agreement by all the political factions to delegate the development of their real estate to a public corporation collectively owned and controlled by them: Rià 2000 (Angel Nieva Garcia, General Manager). The Port Authority was persuaded that its historic know how in handling and storing goods should no longer be used in the urban part of the waterway. The Railways were persuaded there was more added value for them in joining the city-wide vision than sticking to their own investment plans.

The most improbable tract of waterfront industrial land (although located at five minutes walk from the central Place of the CBD) was cleared and partially used for the Bilbao Guggenheim Museum (ILL. 13) and the Congress Centre. The remainder of the tract became very valuable land, entirely controlled by Rià 2000, and is presently developed as offices, a five star hotel and luxury apartments. The equity is used to rehabilitate difficult areas such as the slums of the crime-ridden Old Bilbao. The waterfront of Old Bilbao has been made entirely pedestrian. A new tram line, with exclusive right of way, follows the waterfront (opened Dec. 2002). Old Bilbao now starts to attract new investors. The existing commuter rail line running south of the waterway has been modernised and a spectacular new Metro crosses the city and runs north of the waterway along urban marinas towards the new port.

To sum up, the Bilbao economic, social and environmental vision has been to switch from



industry to services and culture and to consider its underused waterfront, tracks and wharves as an asset rather than as a liability. It was implemented through an effective “public-public” partnership aimed at co-ordinating the high quality public front investments needed to attract the private sector.

For an in-depth account and comments about Bilbao, in Spanish and French, see Masboungi, A. (Ed.), *Bilbao: La culture comme projet de ville, La cultura como proyecto de ciudad*; Paris: la Documentation française, 2001, Euro 20 – ISBN 2-11093151-5. A summary report is available in English (LACONTE). For a detailed report in English about the Basque Country as a City-Region, Bilbao and Vitoria, see: *Fundacion Metropoli, Euskal Hiria, Vitoria: Central Publishing Services for the Basque Government*, 2002, Euro 30– ISBN 84-457-1905-X.

Bilbao is hosting in October 2005 the Congress of the International Society of City and Regional Planners (www.isocarp.org)

SINGAPORE: ADVANCED TECHNOLOGY AT THE SERVICE OF SUSTAINABLE DEVELOPMENT

A remarkable feature of Singapore’s transport policy is its continuity and its long term goal to balance investments in the public and in the individual modes, knowing that the space consumption of the automobile, including parking provision, is up to 100 times the space consumption of a public transport user. Ownership and use of the car are subject to marginal social cost pricing. This is achieved by setting quotas on car ownership: each month a fixed number of “Certificates of Entitlement”, i.e. new license plates, are auctioned and the unsuccessful bidders have to try again later. The use of the car is subject to a congestion charge (“Electronic Road Pricing” – see ILL. 14), applicable in the Central part of the city and on the congested parts of the motorways network. The level of the charge effectively varies with the level of congestion.

In June 2003, about seven years after the initial decision, the Land Transport Authority (LTA) of Singapore, in charge of all surface transport infrastructures, opened its 20 km long driverless North East heavy rail line (NEL), with a capacity of 75.000 passengers per hour in each direction.

LTA justified its decision in favour of automatic operation by safety considerations, the human behaviour of drivers being considered as less reliable than automation (KNUTTON 2003). It was built by Alstom and is operated under a 30 year license by SBS, the island’s largest private bus operator, at its own risk, without subsidies. Smaller automatic people-movers are connecting several of its stations to neighbourhoods and shopping centres.

Optimised staff efficiency is achieved by ensuring the same training to the stewards (Customer Service Assistants) and the station managing staff (Assistant Station Managers). The entire staff is thus deployed in the public eye instead of buried in a cabin.



The opening of the first automated heavy rail transit line, to be followed by two others, is the latest achievement of the Singapore transport policy, twenty years after the decision was made in favour of building a mass rail transit system, against the opinion of the World Bank, confirmed by a team of Harvard economists (PHANG 2003). By 2006 the underground rail network length will reach 145 km.

On the other hand the technical progress in deep tunnel boring techniques, including more efficient distance monitoring of shields, better adapting to terrain uncertainties and reduction of damage risks at the surface have lowered the cost of tunnelling.

Deep tunnelling also generally dispenses from expropriation if it does not affect the future use of the surface land. The alignments of deep tunnelled transit lines can therefore be fixed independently from

the street pattern, horizontally linking the points of maximum future demand along a string of underground stations.

These underground stations can be linked to the surface both vertically, through lifts, and diagonally, through escalators. The points of exit can be freely located by the owner of the system, within the circle of exit opportunities above each station. The size of this “circle of opportunities” is directly proportional to the depth of the tunnel.

The actual location of the exits can therefore be made according to an analysis of the negotiated costs and advantages of any number of potential places. They can be either on public land or, preferably, on private land ready to be redeveloped and whose owners could see the advantage of incorporating a direct access to the underground rail network.

As within the “circle of opportunity”, there is obviously more than one location that presents a real estate interest, the respective owners can potentially be put in competition. This is where the principle of uncertainty comes in. In fact the “circle of opportunities” can be “elongated” thanks to the fact that the owner of the system has the possibility to locate the stations at any point within reasonable distance from the next one on the line.

In the case of automated transit the reduced costs of operation would therefore be combined with a reduced cost of expropriation and potentially the benefit of some value capture.

N.B. Many other cases could have been selected, such as Portland, Oregon, mentioned in 3.1., Paris, which has drastically reduced car traffic, and Zurich, which has an exceptionally high patronage of public transport. On the other hand the statistical material about the relation between urban transport, land use and environment can be found in the UITP Cities Database.



4. Conclusions and Items for Discussion

1. Europe has been studied in the “European Spatial Development Perspective”. Its conclusion suggest the existence of a European “banana” or “pentagon”. Peripheral and maritime regions are lobbying the EU to provide incentives aimed at changing this situation. Statistical observation of the European space is complemented by real time satellite observation (“Corine Land Cover”). Its accuracy and frequent updating helps to analyse the dynamics of Europe’s changing urban and rural landscape towards ever more artificial surfaces.
2. **URBAN SPACE.** Observation of urban areas and their environment in a comparable way requires a uniform definition of urban employment basins and uniform observation tools. This was achieved by the Millennium Cities Data Base for Sustainable Mobility. Such comparisons allow an assessment of urban policies related to mobility, energy consumption and environmental quality. For example the % of GDP spent on transport, not including parking ranges from 4% (Copenhagen) to more than 20% (Jakarta). Accessibility ranking and travel times put Singapore on top and Houston at the end notwithstanding a cost of 14% of its GDP. Findings illustrate the possibility of an effective decoupling of economic growth and growth of energy consumption. The growing traffic congestion, as an inevitable result of the increase in automobile ownership, whatever the amount of road investments, suggests the need for travel demand management, and therefore the search for urban forms favouring sustainable mobility and energy savings, at all policy making levels, from the EU level down to the level of cities themselves.
3. **EU.** The quest for sustainable cities is not directly part of the EU competence. But the EU policies deeply affect land use in general and urban land use in particular, justifying an increased attention of cities for the EU. The regional policy of the EU and the use of the structural funds have acted in favour of reducing disparities between European regions and therefore favoured peripheral areas within the Union at the expense of the existing urbanised clusters. An awareness of the urban problems has led to the URBAN community initiative, which has allowed direct contacts between Europe and its cities. This initiative has now been thwarted and other tools are being considered to link urban planning and the EU structural funds. The transport policy has in a similar fashion favoured pan European motorway networks and high speed rail connections (“Trans European Networks”), while urban transport networks received less support (such as the funding of the Athens Metro). The environment policy is by contrast encouraging integrated urban panning by requiring, since July 2004, a Strategic Environmental Assessment of urban plans and programmes.



4. **CITIES.** Urban planning as a regulatory framework for urban development has lost part of its clout, because of the growing structural role of the transport infrastructures: airports, motorways, urban rail investments, etc. The planning of these infrastructures is subject to politics. Their implementation is dominated by specialised engineering disciplines, leaving little place to the urban planning professions. The Laissez Faire and creative chaos of spaces structured only by their infrastructures has become the underlying philosophy of many urban developments. It is often associated with the US urban planning practices. The challenge to cities is therefore to be able to conceive and implement an integrated urban project, achieving “Place building”, within the constraints of a changing global context.

5. **SELECTED EXAMPLES.** Four examples have been selected among many, to suggest that integrated planning remains possible as well as desirable, if a strong willed individual or group has developed a vision and the implementation tools. CURITIBA, Brazil, is a prime example of sustainable urban development, combining economic growth, social cohesion and environmental quality, through the vision of its Mayor-architect. BERLIN, FRG, is an example of a Capital’s rebuilding; using the rich history of its Prussian urban past. Under the leadership of its planning director it has achieved the principles of mixed use development and recreated a vibrant central core on the very location of the infamous wall and its surrounding no man’s land. BILBAO, Spain, is an example of a city that suddenly lost its entire coal and steel based industry as a result of global competition and developed a collective vision for an integrated alternative urban project. It succeeded in building a place of culture and services capable to thrive within that same globalisation that took away its industry. SINGAPORE combined the challenge of building a nation capable to discourage military invasion and a star of the global economy, while making optimal use of its scarce land resource. This has been achieved, under the leadership of its founder, by developing a state-of-the-art public infrastructure ranging from the airport, automated port services, high tech urban transportation and multiple IT applications. The Government has been encouraging a service and high tech based private sector, a high level of personal income and a low level of individual energy and resource consumption. It achieved this result through a strong planning and regulatory framework, an effective travel demand management and the stewardship of its scarce natural resources, so enhancing the quality of life of its citizens. The replicability of such examples in other contexts remains a point of contention.

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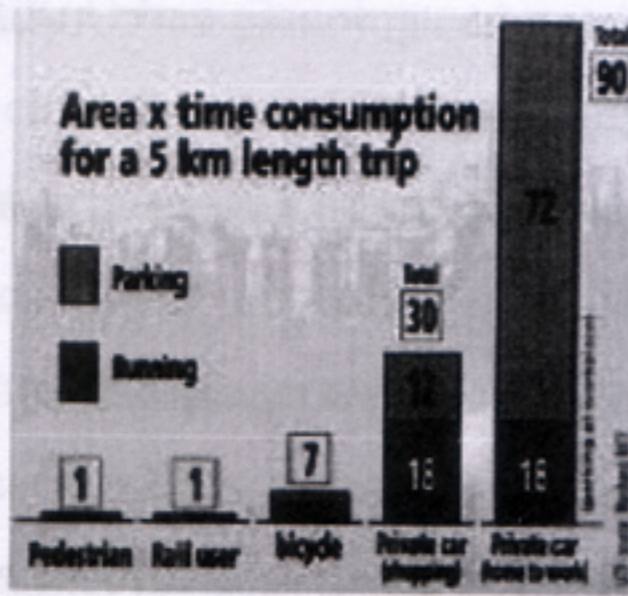
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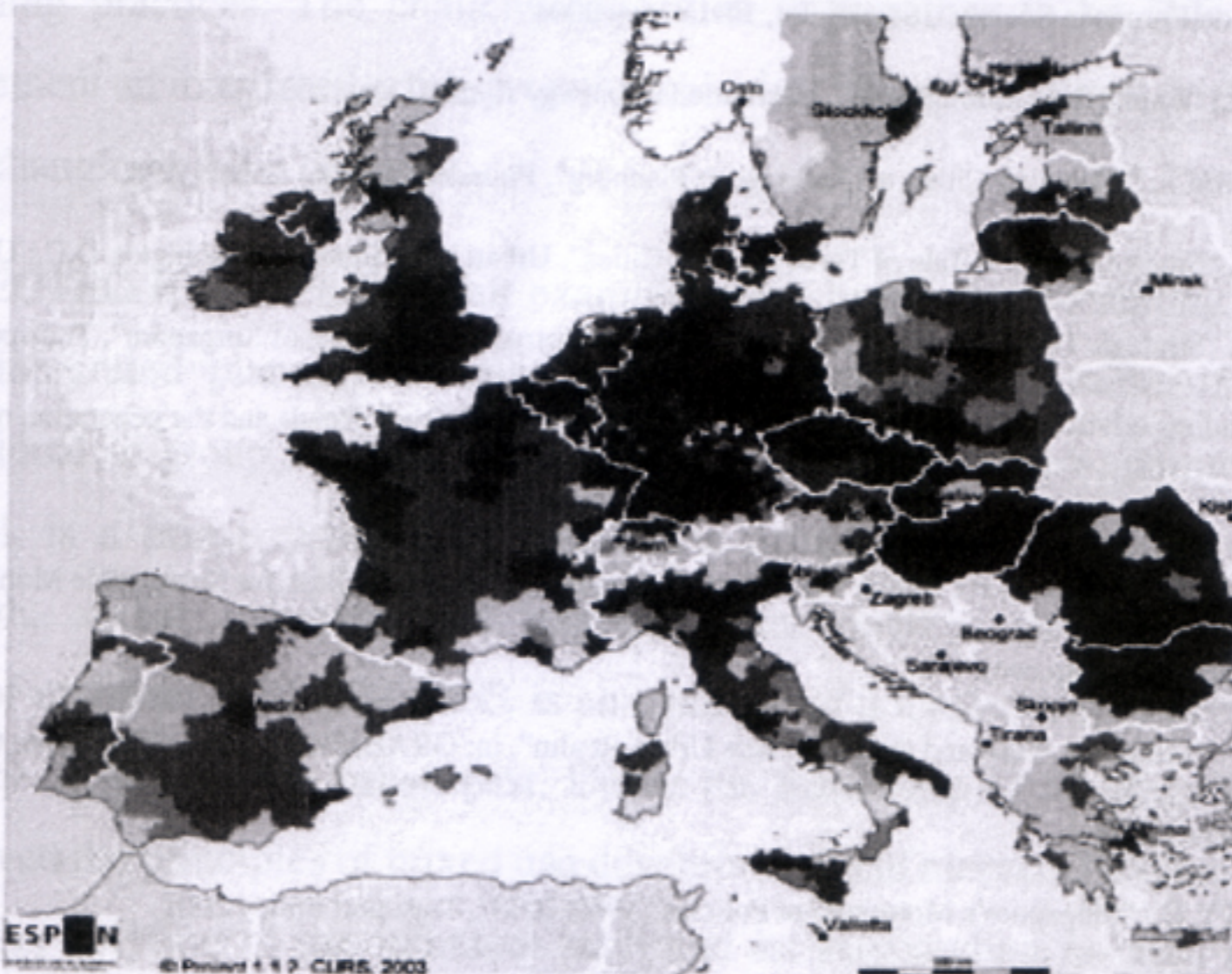


(1) Space Consumption by Mode (RATP)

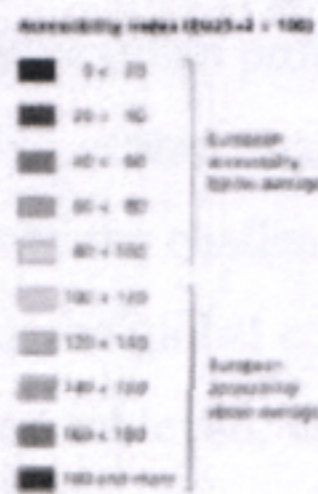
Urban-rural typology

Urban-rural typology, based on population density ranking of Functional Urban Areas and land cover

- High urban influence, high human intervention
- High urban influence, medium human intervention
- High urban influence, low human intervention
- Low urban influence, high human intervention
- Low urban influence, medium human intervention
- Low urban influence, low human intervention
- No data

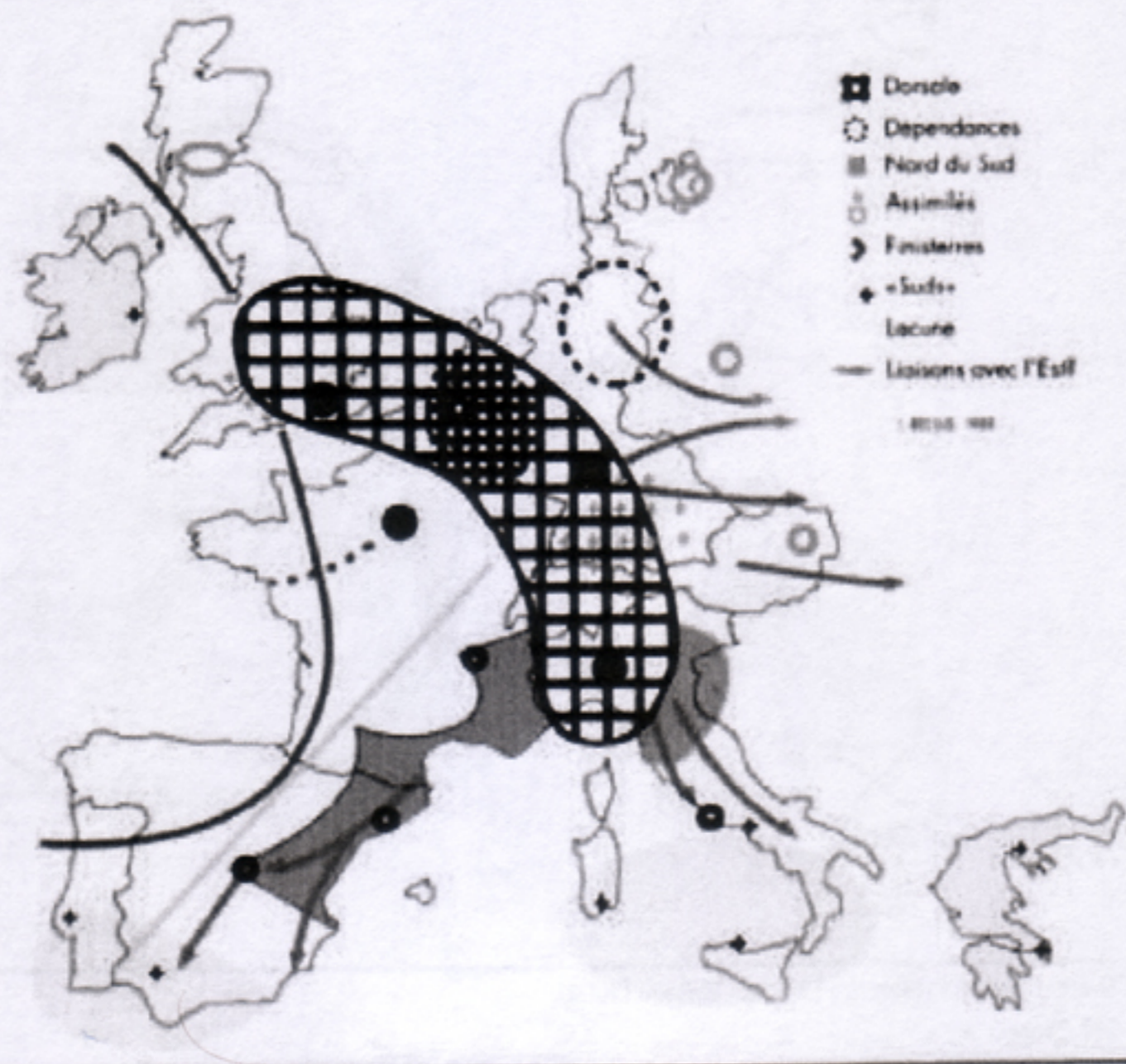


(2) Urban-rural Typology 1999 (ESPON)



World Development of New Global Economic Integration Zones

The Blue Banana Indicating the (Core) Area with Most Cities with More than 200.000 Inhabitants



Source: Brunet (1989)
See Chapters 2 and 4

(4) The "Polycentricity" paradigm (I): the "evil Blue Banana" (FALUDI)

The "20-40-50 Pentagon," Just One Global Economic Integration



Source: Schön (2000)

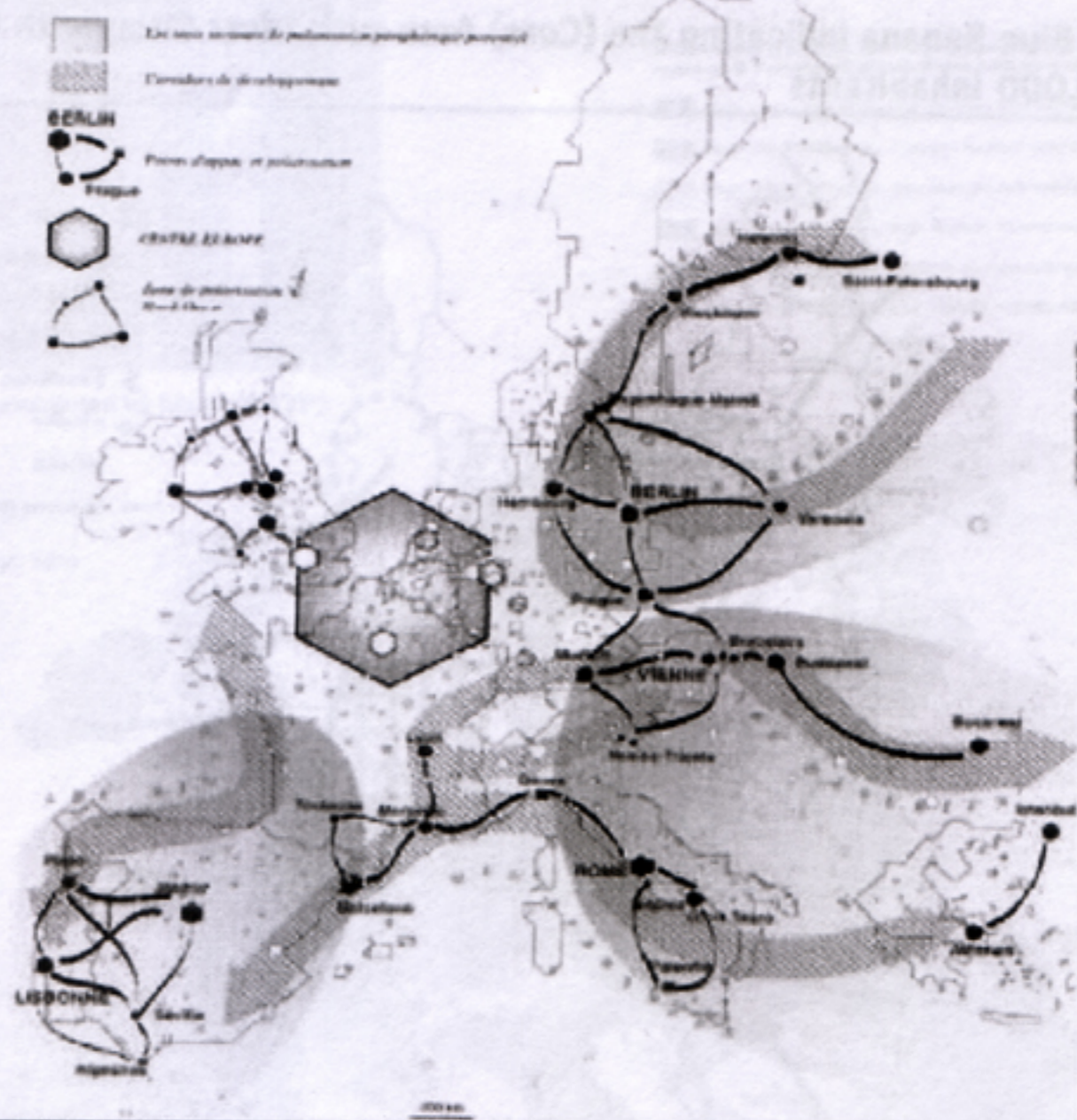
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Possible Development of New Global Economic Integration Zones

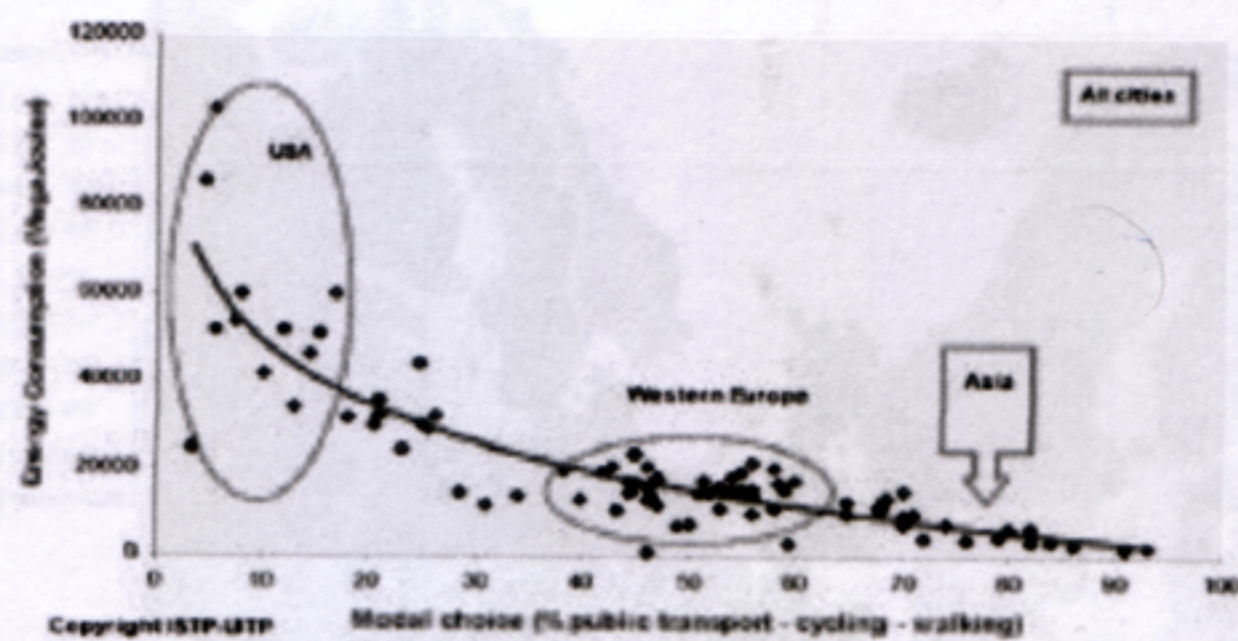
TEINTATIVE POUR UNE DEFINITION SPATIALE
DES ZONES D'INTEGRATION MONDIALE PERIPHERIQUE



Source: French Presidency (2000b); Guigou (2002)
See Chapter 4

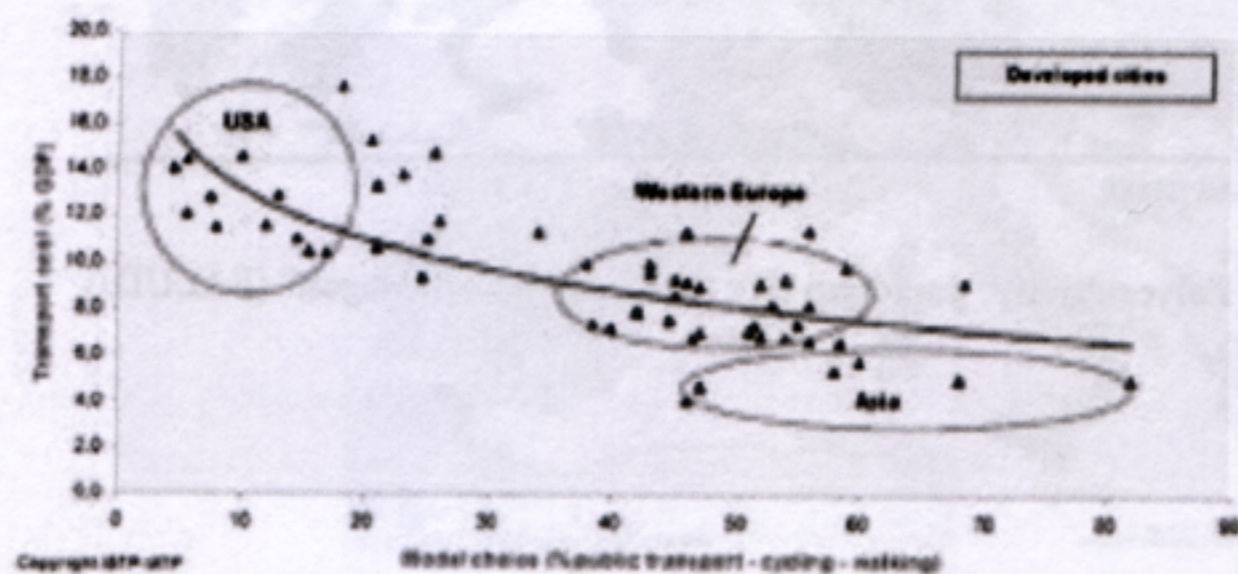
(6) The "Polycentricity" paradigm (III): the "good global economic integration zones" (FALUDI)

Modal Choice (% public transport + cycling + walking) vs Energy Consumption per Inhabitant per Year (MegaJoules)



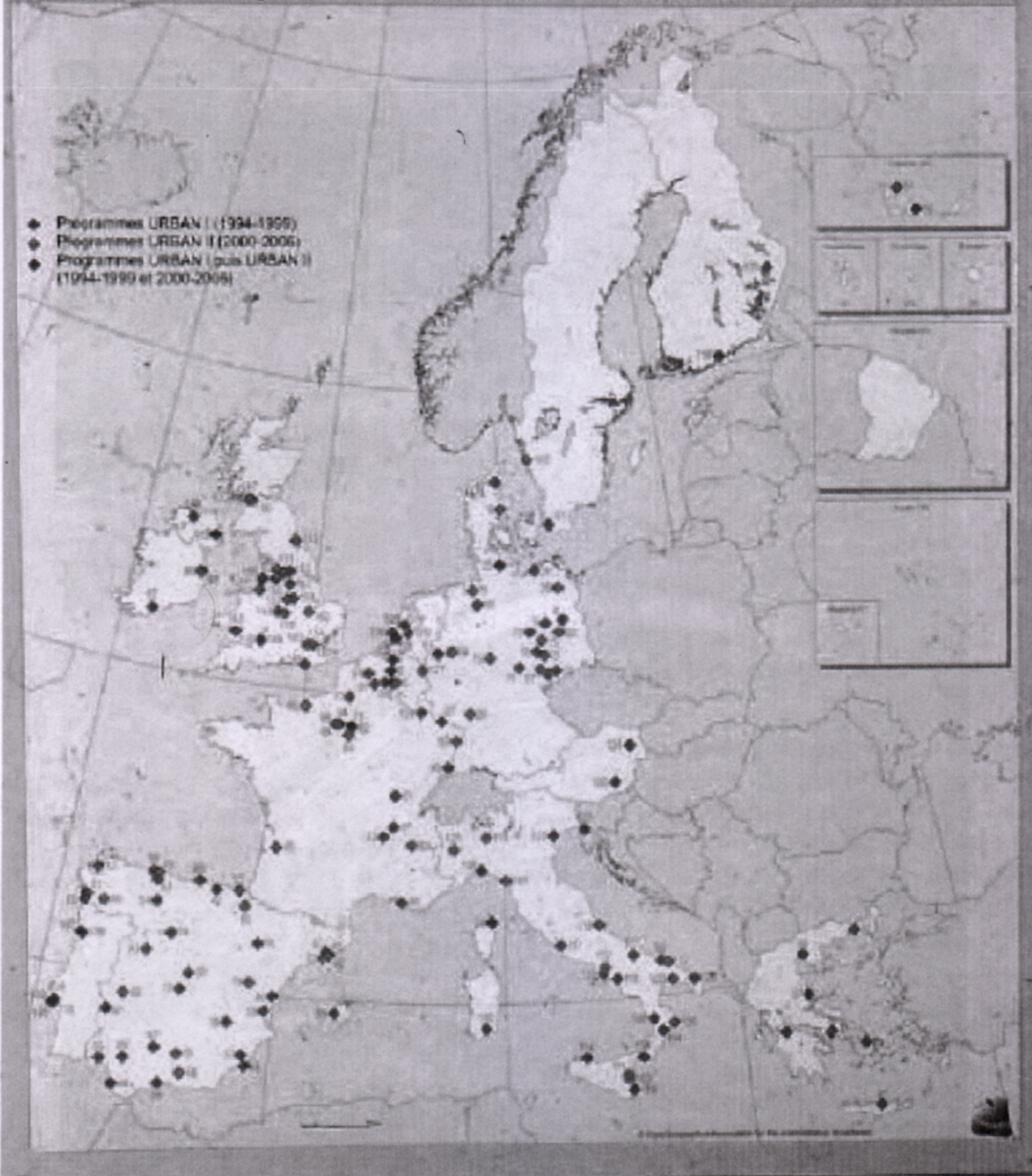
(7)

Modal Choice (% public transport + cycling + walking) vs Transport Cost (% GDP)





Villes participant à l'Initiative communautaire URBAN



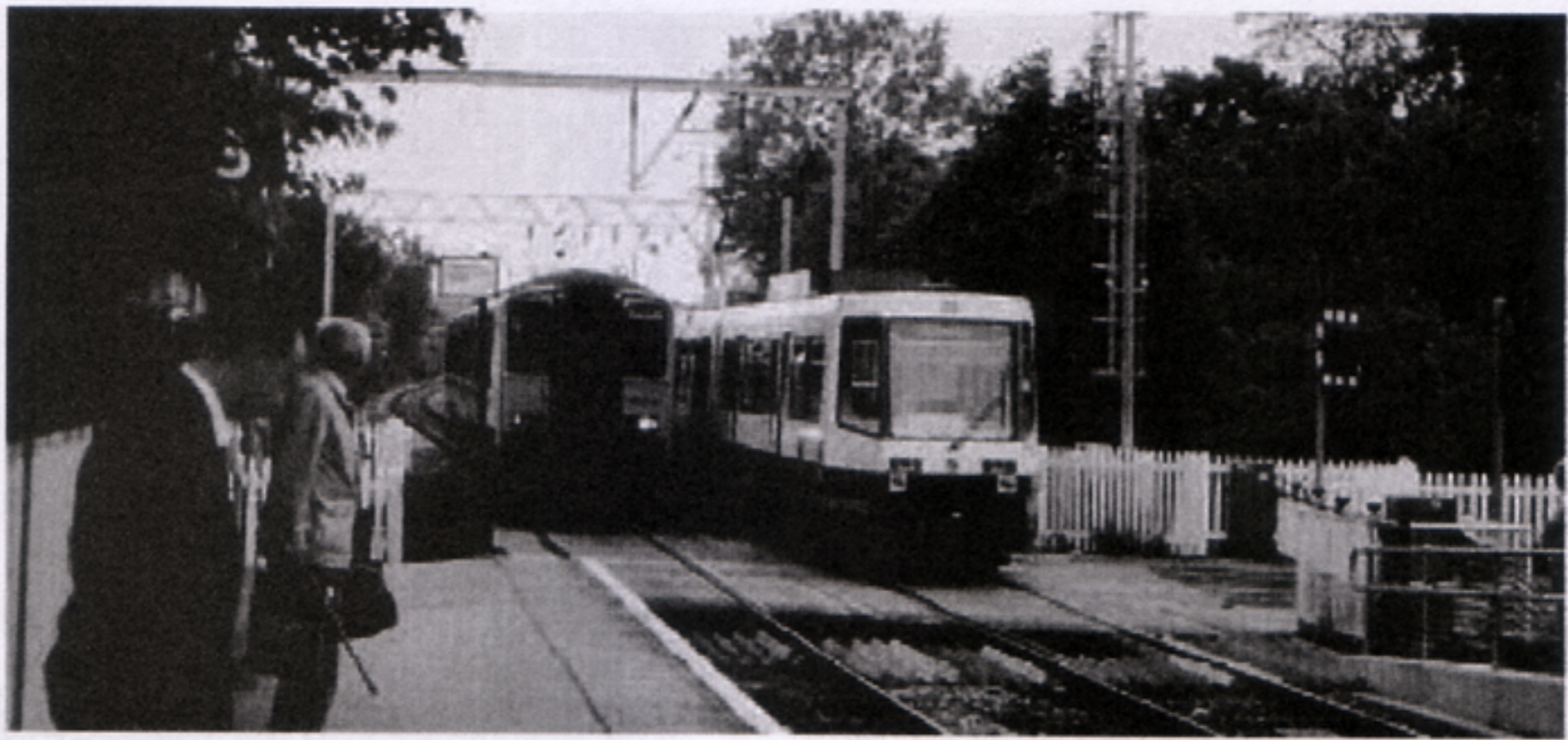
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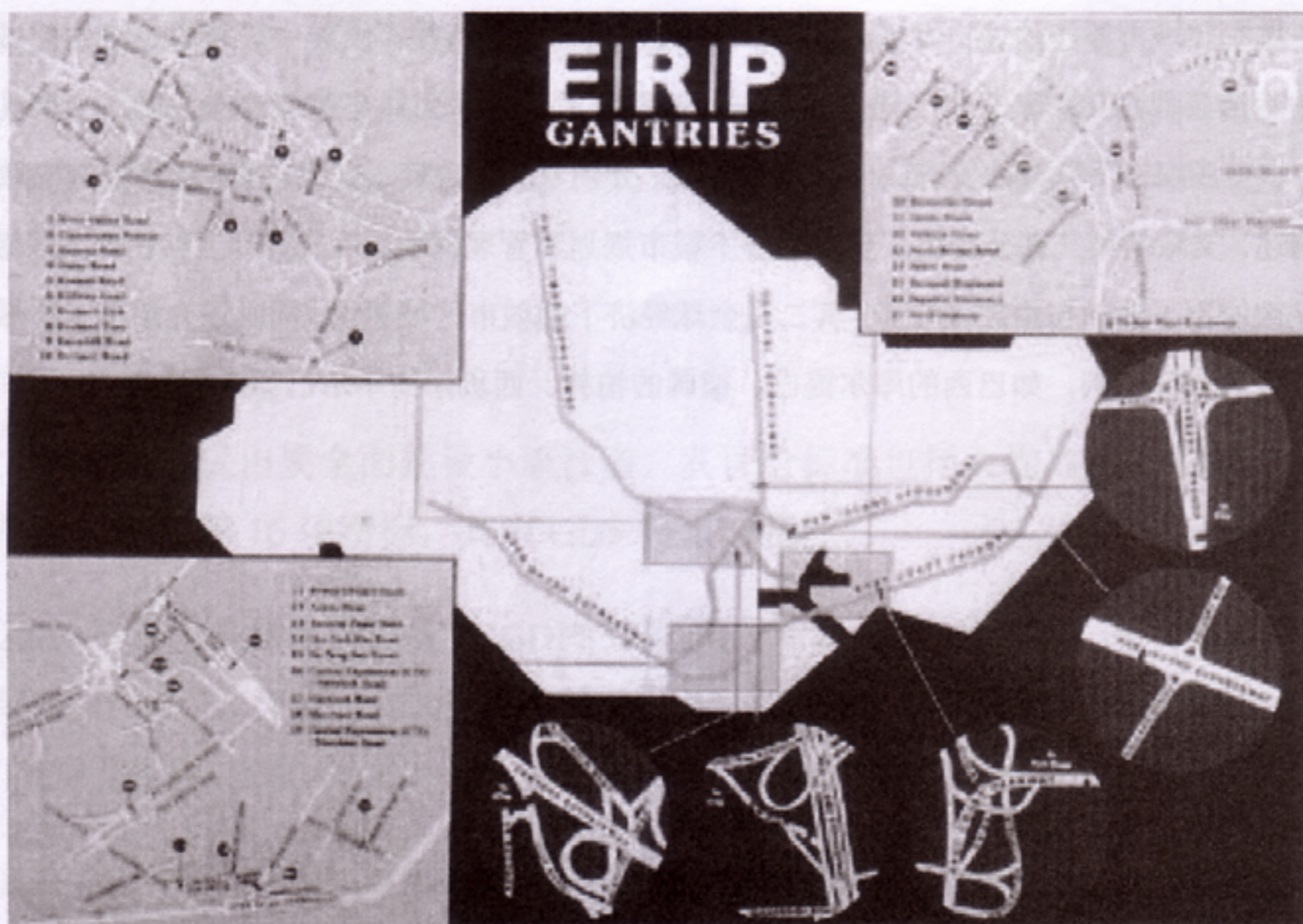
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86 Le Mans
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125 Den Haag
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Autriche



Ecopolis Development of New Urban Ecopolis Development Zone





（三）基本步骤

要做实力南岸，必须实现帕累托最优，通过“三步走”达到速度、质量、突破和循环。

第一步，2007年前，经济增长速度达到14%以上，经济总量比2002年翻一番，人均GDP