

usuario acrítico, están anticuados. Esos arquitectos «racionalistas» consiguieron tras la Guerra Civil española reanudar los lazos con el movimiento internacional, con la arquitectura de Sert (que se había exiliado) —no hay más que comparar la pesadez escurialense de la Facultad de Farmacia de la Diagonal de Barcelona con el grácil (y termodinámicamente ineficiente) edificio de vidrio de la Facultad de Derecho, de 1957, al otro lado de la misma avenida. Se ganó una batalla contra la arquitectura fascista, es verdad. Empero esos arquitectos urbanistas de Barcelona han sido incapaces de tener una visión ecológicamente racional o, más que incapaces, se han despreocupado de la cuestión. ¡Oriol Bohigas, en sus escritos sobre el «modernismo», no menciona a Geddes ni a Cebrià de Montoliu!¹³ Sin renunciar necesariamente a la belleza del edificio singular, en el estilo que sea (y aquí *no* propugno en absoluto un absurdo retorno al Art Nouveau), ciertamente hay que supeditar la arquitectura (como ha escrito Oriol Bohigas) a una lectura histórica y morfológica del entorno urbano, pero *además* las concretas intervenciones urbanas en cualquier lugar de la conurbación deben inscribirse en una interpretación ecológica que abarque todo el entorno regional en el sentido más amplio. En Barcelona, los arquitectos han mandado demasiado en los últimos años, y los arquitectos no están bien preparados para ser urbanistas; los urbanistas deberían ser ecólogos humanos, que se salgan de sus bosques y de sus humedales, y se dispongan a «mojarse» políticamente.

Urban sprawl and ecology in Barcelona

Introduction

There is at present a reaction against the architecture and urban planning of the rationalist, modern, international style, that is to say the tower block of cement, steel and glass; separate zones for working, entertainment, and sleeping; endless suburbs of little houses (something quite opposite to the garden city movement, of self sustained cities, disconnected from the conurbation). Post-modernism has relegitimated a variety of styles, even the mixtures of styles, and urban planning (not to speak of regional planning) is out of fashion. Post-modernism is a free-for-all. But within post-modernism, there is an emergent trend towards a renewed regional and urban planning and a new bioclimatic architecture strongly influenced by the ecological critique of industrialization, and by the ecological critique of the automobile.

«Post-modernism» came after the Modern International Style. But when we Catalans talk about *modernisme* we mean the movement and style between 1880 and 1920 which was inspired by Ruskin and William Morris, the architecture of Domènech i Montaner and Antoni Gaudí and so many others. Catalan «modernisme» was our version of Art Nouveau and Jugendstil. Why was it so strong in Catalonia? Was there an urban planning movement at the same time in Barcelona which was connected to the ideas of Ebenezer Howard and Patrick Geddes? These are the starting points of this paper.¹

In Catalonia, after «modernisme» in the sense of Art Nouveau or Jugendstil, came a period in which the influence of the International Style, and personally of Le Corbusier, was dominant both in architecture and urbanism. This was truncated by the Civil War of 1936-1939 (and Franco's preference for a munimen-

1. Which grew out of the chapter on Geddes in my book *Ecological Economics* (Blackwell, Oxford, 1987). See also Eduard Masjuan, *Urbanismo y ecología en Cataluña, 1901-1937* (Madre Tierra, Madrid, 1992). The present version was intended for the Global Forum on Cities, Manchester, 25-29 June 1994.

13. Bohigas, O., *Reseña y catálogo de la arquitectura modernista*, Lumen, Barcelona, 1983.

tal style), until the fifties, when through the Group R, of the young Oriol Bohigas and other architects, the links with the rationalist Sert, which combined the international style with some vernacular elements, were renewed. Oriol Bohigas has been the main force behind the urban developments of Barcelona as an Olympic city. In terms of money spent, the main Olympic public works have been the ring motorways around and inside Barcelona, which facilitate access by car to the city. The next gigantic public works will be the conversion of the Llobregat Delta, immediately to the south of Barcelona, into an extension of the harbour and a large industrial and transport distribution centre, at the cost of the loss of a large area of agricultural land and marshes. Thus, the conurbation of Barcelona keeps growing. This city of architects wishes to become the Rotterdam of the Mediterranean, at a time when Rotterdam would like to be the Barcelona of the north. Most tourists in Barcelona, which is a pleasant city with a fine new beach by the Olympic Village, never see the impact that Barcelona has on its surroundings.

Both in architecture and regional and urban planning, the post-modernist confusion will probably end with a new ecological trend.² There is still no sign of this in Barcelona. Things could have been different, as explained in this paper.

Of course the problems of Barcelona look really small in the world context, particularly in a Third World context. Urban development occurs as a result of emigration from rural areas, due to the loss of the active population of the agricultural sector when productivity increases (measured with conventional economic, rather than ecological, criteria), and the size of Third World cities also increases as a consequence of the internal growth of the urban population. The biggest cities in the world are Mexico City and São Paulo, which are not in rich countries but in countries whose active agricultural population is experiencing a marked relative decrease. It is an anomaly that the largest cities are not found in the countries with the largest populations. If China and India followed the path blazed by the «developed» economies (that is to say, if their active agricultural populations went down to 10% or 15% of the total as a result of the replacement of human and animal energy in agriculture by fossil fuels), then we would see hitherto unknown monsters, such as a city like Beijing or Shanghai with 80 million inhabitants, or cities like Bombay,

Delhi, Calcutta and Madras with 60 million inhabitants. So humanity really has a lot to learn from the ecological regional and urban planning advanced by Patrick Geddes or Lewis Mumford. The dreams of cities that are organically linked to their rural surroundings (the figure of not more than 100,000 inhabitants is often given) are without a doubt Utopian. They are, however, a much more agreeable prospect than the nightmare awaiting a large part of the world's population, cooped up in immense, unpleasant conurbations. In many of these conurbations and for most of their inhabitants the problems of living in the city (air and water pollution, lack of space, and general unhealthiness) will not be compensated for by the advantages. The inhabitants of Mexico City already suffer pollution from exhaust gases, but most of them do not have, and probably never will have, a car. Will we, perhaps, see a spontaneous ecological movement of the poor against the car in the world's poor cities? Meanwhile, in Barcelona the tendency is towards almost universal possession of a car and the construction of more and more urban motorways, following on a small scale the model of Los Angeles. This is an anti-ecological model in which the use of the bicycle is all but impossible. But at least it is a more equitable model (on the local scale) than that of Mexico City, as in Barcelona almost everybody has a car (except children, old women and African immigrants), and the pollution produced thus affects those responsible for its production.

The Barcelona conurbation

The new Olympic Village by the sea housed the participants in the 1992 Olympic Games and was built on former industrial land in the Poblenou district. It was given the name of Nova Icària (New Icaria). There is a fine view of the sea, there is a large, new, cleaned, beautiful beach and there is also a new port for yachts and splendid large McDonald's fast food restaurant. It is all reminiscent of Miami Beach, but it was called Nova Icària, a name with revolutionary and Utopian overtones, because there were people in Barcelona who agreed with Cabet's ideas. The fact is that this vast property development operation has few, if any, social-

2. White, R. R., «Convergent Trends in Architecture and Urban Environmental Planning», *Environment and Planning (Society and Space)*, 1993, vol. XI, pp. 375-378.

ly or ecologically Utopian aspirations. The Olympic Village includes two huge tower blocks that are the typical glass towers, but taller than the tallest ones in Madrid. They were designed by internationally fashionable architects, like so many of the Olympic installations. It is not yet clear whether these towers are premonitions of the future or leftovers from the Le Corbusier Plan for Barcelona (1932-1934), also known as the Plan Macià. This plan consisted of Le Corbusier's typical ingredients for urban development; immensely tall buildings, overhead motorways and the destruction of the old town. Absolutely no attention was paid in these two towers, or in the housing in the Olympic Village, to construction following bioclimatic criteria, taking advantage of orientation to the sun to install solar heaters for water, nor was there selective collection for composting of organic rubbish in local allotments. The domestic rubbish is, in fact, all ground up together using a primitive system that was very fashionable in the United States in the sixties. In social terms the construction does not allow any other lifestyle than the small family crammed into an apartment. Some of the other Olympic construction projects have been on Montjuïc mountain in Barcelona. The most important development operations have been outside Barcelona itself, behind the Collserola hills, in El Maresme region, and in the Llobregat Delta, if we exclude the Olympic Village and the area at the end of Diagonal Avenue in Barcelona itself. The idea is to achieve the urban *mise-en-valeur* of several thousand hectares all around Barcelona, in a half-circle (because of the sea) of about 30 km radius. A few years ago it was possible to take the train to the Autonomous University in Bellaterra, a journey of about three-quarters of an hour from the centre of Barcelona, and see vineyards and the almonds flowering in February and March. Now, few of them are left; they have been replaced by housing developments with semi-detached housing («separate» houses they are called in some of the adverts), or even by the housing built for the many Olympic police (later converted to student use).

This lust to build is not a new phenomenon, as there were plans in the sixties to build on the land now occupied by the Olympic Village, by getting rid of obsolete factories, meaning that their owners would be able to make money when the town-planning status of their land changed. The plan was known as the Pla de la Ribera and involved Narcís Serra and Miquel Roca, who were then two young lawyers and economists,

and who are now important Catalan politicians. Many aspects of contemporary Barcelona have their roots in the Barcelona of the fifties, when the plans were drawn up for the grand metropolis. But they also go back further, to the urban expansion plan of the thirties inspired by Le Corbusier's ideas. This planning approach, based on the creeping occupation of the perimeter, was the object of criticism right from the beginning of the century, although this opposition was always defeated. This opposition ranged from the idea of the garden city disconnected from the metropolis to the anarchist vision of a synthesis between rural and urban areas, with small cities that were organically linked to their rural surroundings. This alternative never had a chance, and we can now see the continuity of the current development plans. This is to be seen, not only in the urban motorways, but also in the Collserola tunnels, and the diversion of the River Llobregat (which is the subject of ecological opposition). The Llobregat Delta is an ecologically important wetland, and the site of the Airport. They wish to divert the Llobregat so that its mouth is a few kilometres to the south, so as to extend the port of Barcelona in order to turn it into a huge trade centre. This will mean that the railway line from Portbou (on the French border) to the port will use the same width of track as European railways (Spanish and Russian railways use wider track). This means that the French TGV (High Speed Train) will burst into Barcelona, but it will also run through the Vallès district behind the Collserola range of hills to reach the port and then continue to Madrid. Why we need the both extension of the airport and the TGV is really a mystery.

The dreadful quality of much construction work also dates back to the fifties and sixties. Surprisingly little has been said in Barcelona about asbestosis, but there is much talk of aluminosis. Many of the flats bought by working class families in Barcelona will not last very long, and some have already started to collapse. This is because the beams use aluminous cement, which has become fragile due to humidity and the passing of time. It is an undeniable fact that this cement was produced by the company Cementos Molins, and that a member of this Barcelona bourgeois family was «conseller» (Minister) for Public Works in the Government of the Generalitat of Catalonia in the eighties. This brings to mind the famous saying of one of the mayors of Barcelona when he looked down from the Tibidabo mountain and said to his guests, «So

much urban property!» Barcelona would like to be a city with an industrial and professional bourgeoisie, new technology and a literary and musical culture. Unfortunately the sad truth is that the most profitable business, the best jobs, are in construction, as they were at the beginning of the century, in the sixties and now more than ever. We should replace the idea of Barcelona as a manufacturing city with the idea of Barcelona as a city based on property speculation. Soon when one looks away from the sea, from the Tibidabo or even more so from the new Collserola communications tower, towards the interior, towards the Pyrenees, one will see another «sea» of factories, tower blocks and detached housing in the Sant Cugat and Cerdanyola areas (which cover an area greater than that of the Eixample, the grid developed after 1859 under Ildefons Cerdà's plan). It was a poet, not an almost illiterate property developer like Nuñez (President of Football Club Barcelona), who wrote the famous verse, «Au, Barcelona, salta la carena, / que hi ha uns solars que valen molt la pena.» The current municipal and regional administrations do not intend to reduce the Collserola range (both socialists and Catalan nationalists agree on this point) from 500 m to 100 m or 200 m, but they do intend to drill two or three tunnels through it (in the same way that they have drilled tunnels such as the Rovira tunnel through the hills that became part of the city as a result of its growth at the beginning of the century). These new tunnels are for cars and to improve access to the city from the outside, in keeping with the Los Angeles model of development that is being imposed, not as a result of general plan, but as a result of piece-meal planning schemes. Improved car access to Barcelona through urban and peri-urban motorways (the main Olympic investment) is turning Barcelona into a city for car traffic and the development of car parks. This is a great pity as the structure of part of Barcelona, the Eixample district planned by Cerdà, allows people to move easily on foot or by bike. A historic error has been committed by choosing to invest in things that favour car transport and the extension of the city like an oilstain. But what is happening now «spontaneously» (in the absence of a town-and-country planning system, which should be under democratic control), looks very similar to what was foreseen in the plans drawn up under the Franco military dictatorship from the first in 1953 to the last in 1976. This is why Porcioles, the former mayor and member of the Opus Dei, a supporter of

Franco, who died recently, drew big praise from the current elected mayor, a socialist, Pasqual Maragall. These plans aimed at locating at least half a million more people on the other side of the mountain, extending the conurbation to Sabadell like an oilstain, with the Tibidabo city park jutting out. The feature that used to serve as a limit to the city, the Tibidabo, should serve the same function as Central Park in New York, according to Maragall, the mayor of Barcelona, who studied at the New School for Social Research in New York; that is to say, a park to serve as the centre for the entire conurbation (an important word, introduced by Patrick Geddes) as it extends. The ecological degradation of the Vallès area is socially heterogeneous; ranging from the rich Golf district of Sant Cugat to the blocks affected by aluminosis in Montcada and Ripollet.

Much has been said about Barcelona's effects on its surroundings and on Catalonia as a whole. This started in the thirties with discussions about regional planning (using the English term because it sounded better), but nobody really considered following Lewis Mumford's ideas of Regional Planning. There was also talk of Gross Barcelona after Gross Berlin. There are and have been two theories held by those who take the decisions. One is Catalonia-city and the other is Barcelona-metropolis-and-the-rest-of-Catalonia-a-colony. Of course nobody openly defends the second option, as the Barcelona authorities feel a certain responsibility for the rest of Catalonia. The idea of Catalonia-city means a highly urbanised Catalonia with services dispersed among all the regions, not concentrated in Barcelona. A more rural version would combine a not so big Barcelona with important local cities: Girona, Lleida, Tarragona, and also Vic, Manresa, Tortosa and Reus. This is a merely theoretical version, because it would have been necessary to maintain a strict *agricultural belt* around Barcelona to avoid the city developing like an oilstain. This is something that the Barcelona authorities could never have considered either under democracy or under the Franco dictatorship. This is in spite of the fact that the geography of Catalonia greatly favoured the possibility of keeping an *agricultural belt* around Barcelona, as the land in El Maresme, Baix Llobregat, Delta del Llobregat and El Vallès areas is extremely fertile, with undeniably valuable environments and considerable agricultural production, which could have been maintained in the form of local allotments or larger agricultural areas, as

well as woodlands and the large wetland of the Llobregat Delta (which can still be saved), all of which could be open to the local population within reason. But these areas are being dug up and paved over, obliterated by the logic of differential rent measured only in chrematistic terms. The real model adopted has been that of Barcelona as a metropolis, a conurbation with an overall population of four million, who use cars for transport (the investment in new public transport is far less than the investment in new peri-urban motorways).

The population of Catalonia (Table 1) is basically growing in the Barcelona conurbation (it is possible to reach areas such as L'Hospitalet, Badalona, Santa Coloma de Gramenet, and Cornellà very quickly using the metro or the new motorways; there is no division at all between them and Barcelona, not even a five metre strip of greenery). At the same time, the cities in the interior or the coast which are not within short distance of Barcelona have lost demographic weight in relative terms.

Population of the largest towns in Catalonia

	1857		1986
Barcelona	183.787	Barcelona	1.701.812
Reus	28.171	L'Hospitalet	279.779
Tortosa	24.977	Badalona	225.016
Lleida	19.627	Sabadell	186.115
Tarragona	18.023	Terrassa	160.105
Mataró	16.595	Sta. Coloma	135.258
Manresa	15.264	Lleida	107.749
Igualada	14.000	Tarragona	106.495
Sabadell	13.945	Mataró	100.021
Vic	13.712	Cornellà	86.928

Source: Casasas, Lluís, *Barcelona i l'espai català*, 1977, p. 293; and INE (Spanish National Institute of Statistics), *Padrón municipal de habitantes, 1 de abril de 1986*, Madrid, 1988.

There are more inhabitants in Badalona, Santa Coloma (the worst developed area of the entire conurbation) and Sant Adrià de Besòs (to the north-east) than in the entire Eixample district. Similarly, in L'Hospitalet and Cornellà (to the south of the city and through which you will pass if you come from the airport) there are more inhabitants than in the whole Eixample. But these municipalities are full, and it is necessary to seek other territories along the coast to the

north, to connect with Mataró, and on the other side of the Collserola range of hills towards Terrassa and Sabadell.

The figures from the most recent census indicate a reduction in the population of Barcelona city, but this is not a symptom of what in other European countries and in America has been called *counterurbanisation* (that is to say, the faster growth of population in the municipalities *outside* the area of the metropolitan labour market)³. This change is simply the effect of the low birth rate in Barcelona and the displacement of some inhabitants towards the outside areas *inside* the conurbation; some in search of cheaper rents, others in search of fresh air and more socially distinguished neighbours.

The Llobregat Delta

For much of the history of humanity, wetlands were considered to be unhealthy areas; their potential was not exploited and it was felt that the best thing to do was to drain and improve them. This is what has happened in Catalonia with the Ebro Delta since the 18th century, although much of the wetland remains. The Llobregat Delta has not only suffered the incursions of agriculture but also the spreading of the Barcelona conurbation in the form of industry, warehouses and the airport. Recently this primitive and negative vision of wetlands has changed all over the world, and also in Catalonia. This has been due to the educational work of many ecologists. In Catalonia there have been well-known conflicts over wetlands, such as the *aiguamolls* (fresh water marshes) of the Empordà region, which were threatened and have been partially destroyed by tourism and property speculation over the last few years. Part of this area has been saved and is now a much-visited natural park 130 km to the north of Barcelona. The Ebro Delta is 160 km to the south of Barcelona. A more civilised attitude is arising towards the conservation of wetlands, but at the same time the pressure exerted by Barcelona on the Llobregat Delta is increasing. Which will prevail?

The Llobregat Delta is immediately south of Barcelona and covers an area that is approximately the same

3. Champion, A. G. (ed.), *Contraurbanization: the Changing Pace and Nature of Population Deconcentration*, Arnold, London, 1989, pp. 21-23.

as that of the municipality of Barcelona. It has many important ecological functions; it is an area with a very high production of biomass, it serves as a resting point for migratory birds, it regulates the flow of water in the Llobregat (providing an area for floods), it also prevents the seepage of water from the sea and thus the salinisation of the aquifer on which many people depend, and in addition, nitrogen and phosphorus are recycled, as well as the heavy metals and other pollutants. It is a habitat for the juvenile stages of many fish and other marine species and also provides a place where children and old alike from the Barcelona conurbation can learn a little about nature. Its conservation is compatible, at least in some areas, with non-intensive agricultural use, but not with industrial use. The Llobregat Delta has been greatly damaged by property speculation. The Zona Franca, or Free Trade Zone, ruined the left bank of the Llobregat, and there are also many industrial constructions on the right bank. As some industries go into decline (such as the large SEAT-Volkswagen factory in the Zona Franca, which has been replaced by the new factory in Martorell), would it not be possible to change the land use for something greener? The destruction of a wetland to instal a car factory will seem barbarous to our descendants, as will the proposed installation of an enormous incinerator for urban waste in the middle of the Llobregat Delta.

Barcelona's new airport is a genuinely attractive building designed by Bofill. The new control tower is in the wetland area and there is a threat to build a further runway in the same area. Fortunately, private property and the golfcourse of El Prat occupy areas that have been preserved or could be recovered. The ecological value of the Delta, and maybe its economic value (if we knew how to assign a monetary value to its ecological functions) makes its preservation worthwhile. Chrematistically motivated proposals (typical of the logic of the spendthrift heir that typifies three Catalan politicians: the Minister of Public Works, the President of the Generalitat and the Mayor of Barcelona) are to extend the airport. What is really needed is an immediate *moratorium* on new public works, in the area between the River Llobregat and the municipality of Gavà beyond the small lagoon of El Remolar and from the town of El Prat to the sea. In the meantime, studies should be carried out on the ecological value of the Delta, in order to combat property speculation interests and those of the companies specialised in public

works. At the same time it is necessary to improve the level of environmental education in the area, as the El Prat Council has done. However, the same Council and the Communist Party of Catalonia have been willing to accept (after the 1993 elections) the diversion of the river, a *volta-face* probably caused by the large investment promised in the midst of the economic crisis of 1993 (equivalent to 3,000 million US dollars), apart from the well-known links between public works and the financing of political parties. Ecologists oppose this development and propose that the Llobregat Delta should be included in the Ramsar Wetlands Convention.

The ecology of the city

Catalonia is one of the most nuclearized countries in the world. Every hour 3 million kilowatts are produced by the nuclear power stations Ascó 1 and 2 and Vandellòs 2 (by the side of the Barcelona-València motorway, 30 km to the south of Tarragona and sited on a beautiful Mediterranean beach). About one third of the heat they produce is converted into electricity. This electricity is enough to allow every inhabitant of the Barcelona conurbation to have an electric heater on day and night, twelve months a year. The radioactive waste is partially reprocessed in France in order to recover (as the *Gran Enciclopèdia Catalana* says in its entry for Vandellòs) «the uranium not consumed and the plutonium produced». This waste used to pass right through the heart of Barcelona along the underground railway route following the carrer d'Aragó, but now it goes behind the Collserola range on a new railway line. The city expels the transport of radioactive materials, and it is also expelling lorry traffic to new motorways running parallel to the railway line. It has even expelled the dead, which is the reason for the construction of the new cemetery in the woodland on the northern side of Collserola. Barcelona expels and absorbs. Most of the rubbish is burnt in the incinerator at Sant Adrià de Besòs and then deposited in dumps, such as the one in the Garraf (south-west of the city, towards Sitges). This «has been heavily criticised because it is in a karstic area, and there is a serious risk of leaching that could affect the neighbouring localities by contaminating subterranean water supplies».⁴

4. Parés, M., Pou, G., and Terradas, J., *Ecologia d'una ciutat: Barcelona*, Ajuntament de Barcelona, 1985, p. 118.

There are new proposals for a giant new incinerator. In some districts within the conurbation of Barcelona, they are now beginning the recycling of rubbish, mainly because of the action of environmental groups (such as CEPA), but much unnecessary rubbish is still produced. For instance, many citizens from Barcelona drink water from outside the city, packed in plastic bottles, but the regional authorities so far have declined to impose a refundable deposit on such bottles.

In 1990 there occurred the most serious ecological controversy so far in Catalonia (in addition to the controversy after the major fire in 1989 in Vandellòs 1 nuclear power station, which was a total write-off). Molins proposed a plan to «eliminate» Catalonia's industrial waste, based on dumps and incinerators located in rural areas, some of which (like Castellbisbal) were close to Barcelona, while others were up to 100 km away. Spontaneous local opposition led to this plan being withdrawn (following an electoral defeat in several of these villages, such as Castellbisbal, where a young ecologist is now mayor), although this opposition has not yet managed to introduce terms such as «dioxin» into the Catalan political vocabulary or mass media.

Have you ever heard of Andorra? Not the Andorra of Max Frisch, nor the «state» of Andorra in the Pyrenees, which is a VAT-free tax haven for the consumers of Barcelona, but the Andorra in Aragon, where there is a large power station belonging to ENDESA (the national electricity company, whose director, Feliciano Fuster, likes to present himself to the media, in paid advertisements, as a good ecologist, but who has been charged under the Penal Code for excessive SO₂ emissions). This power station (of almost 1,000 kW) burns lignite fuel and supplies other areas, including Barcelona, with electricity, and dumps its sulphur dioxide and nitrogen oxides into the atmosphere, which the wind carries to the Els Ports area, at the junction of Catalonia, València and Aragón, where there is a medieval city, Morella. The pinewoods, the crops and grazing have been severely damaged so that Barcelona can have the electricity it needs. Greedy Barcelona! In the past, part of this electricity was generated in Barcelona, and the three chimneys of the power station can still be seen in the Paral·lel, next to the El Molino nightclub, near Montjuïc. This power station became famous in 1917 as a result of a serious strike, «The Canadiense» strike, which was the name of the power company owned by Mr Pearson, a famous person who has been honoured

with a pretty avenue in the richest area of Barcelona, Pedralbes. Next to the mouth of the River Besòs, near the Olympic Village, there are a further three tall chimneys, belonging to a different power station, which is often in operation. Nowadays, nearly all the electricity used comes from outside Barcelona, from the Catalonia it has colonised and depopulated, or even from outside Catalonia. Some of it comes from the Pyrenees. Hydroelectric power is exported into Barcelona from its region of origin, and the bills are also paid in Barcelona, where some of the electricity companies have their headquarters, not where it is generated. This means that the money does not return, and these areas which are «poor» in resources according to the official version, get the booby prize of being allowed to reduce the size of their national parks, such as Aiguestortes (the home of the last bears in the Spanish Pyrenees is being developed for a ski resort). Chrematistic accounting takes precedence over ecological accounting. «Barcelona es poderosa, Barcelona tiene poder...» (Barcelona is powerful, Barcelona has all the power), as the Olympic rumba sang. The high-voltage supply lines that destroy the gentle landscape of rural Catalonia are like a huge spider's web. If we looked at them from the air, we would soon see where the spider is lurking. The collectivised factories in Barcelona shut down in 1938 when Franco's army blew up the hydroelectric dams in the Pyrenees. It may be that there could not have been any soviets without electricity, but there could not be any Barcelona-metropolis without electricity, either.

Barcelona does not only absorb kilowatts. It absorbs everything: food, oil, Algerian gas with an increasing taste of blood... The imported energy necessary for the exosomatic consumption of Barcelona's citizens in the form of gas, oil and electricity is forty times greater than the energy imported in the form of food. Barcelona is a modern, prosperous city with a car for every three inhabitants. A week's rent for a flat costs as much as a month's rent for a parking place in the centre of the city, but instead of making the inflow of cars difficult, the administration makes it easier by building motorways around and into Barcelona, and it finds it more lucrative to give permission to build more car parks. There is as yet no talk in Barcelona of a «congestion tax» to be paid by cars. However, this city full of cars is not as proportionately full of dogs as the cities in the north of Europe, although we do have more pigeons (more than fifty thousand) and seagulls,

who feed on waste. The sewer rats, *Rattus norvegicus*, are the most common animals (there are about two million), and without doubt the ecological functions of this urban fauna would repay investigation.

The average consumption of water in Barcelona is about 400 l per person per day, without distinguishing between different social classes, and including industrial use. A considerable part of this water is lost before reaching the consumers. There have been recent strong debates on increased water charges. The general consensus is that Barcelona needs more water (in some housing developments with detached housing and gardens, average consumption may reach Californian levels of a thousand litres per person per day). Average rainfall per square metre is almost as high as London, about 600 l/m², but its distribution is quite different; rainfall is concentrated in the spring and autumn. It sometimes rains too much. Most of the water Barcelona consumes comes from the River Ter, which is near the border with France, and there are now plans to take water from the River Ebro, a very controversial transfer, or from the River Segre (a tributary of the Ebre) by means of the new and barbaric Rialb dam (which has drowned small, beautiful villages with Romanesque ruins). This involves the loss of water from the Delta of the River Ebro, 160 km to the south, which is a most fertile area, eaten away by the sea and suffering salinisation. Even if all the rain that falls in Barcelona were stored in the city, it would still be necessary to import about five times more in order to maintain current levels of consumption. The water that arrives in Barcelona is needed in other places, because although it rains enough in Catalonia, it does not rain regularly, and the level of evaporation is very high.

In 1991 the Catalan government appointed its first Minister for the Environment but, in a touch worthy of a comic opera, instead of appointing an important politician or a «recycled» ecologist (as was the case for Brice Lalonde in France) they appointed Albert Vilalta, the engineer responsible for beginning the transfer of water from the Ebro up to Tarragona, and for constructing the Vallvidrera car tunnel. The Vallvidrera tunnel brings about twenty thousand cars a day into Barcelona. There is still no debate about Los Angeles smog, which is produced by cars, mainly in summer (nitrogen oxides and surface ozone would perhaps have choked the athletes in the Olympic marathon if they had not taken the precaution of organising the event outside the city, along the coast, where there is a

breeze from the sea on summer afternoons). Peter Brimblecombe (1987) has written a history of the atmospheric contamination of London, and in Germany there has recently been great progress in research into the history of acid rain due to sulphur dioxide since 1850. Many rich countries have recently experienced a reduction in sulphur dioxide pollution due to the elimination of lignite and the reduction of the use of coal as fuel, and the installation of filters in copper smelters. In general, sources of sulphur dioxide pollution were easy to locate and identify, and these externalities gave rise to many protest movements. In rich countries «London smog» is decreasing, while pollution by nitrogen oxides and surface ozone («Los Angeles smog») is increasing, mainly due to car exhausts. This pollution is more diffuse and cannot be socially attributed to a single factory or power station. This is the case in Barcelona, for example. In other locations, such as Mexico City, both types of air pollution are increasing simultaneously: sulphur dioxide (in addition to soot, etc) and «Los Angeles smog». Will really an ecological movement arise to protest against cars, led by those who do not possess cars, but who suffer their effects? The car cannot be generalised to everybody in the world, it is a «positional good», and in Mexico City, like the other Third World megacities, most of the population do not own a car, and will not own one in the foreseeable future. This question has not even been raised in Barcelona. In the working-class districts that have suffered most from the construction of urban motorways for the Olympic Games (such as Nou Barris, to the north of the city) there have been citizens' movements demanding that these motorways should be underground, or at least that acoustic panelling be installed to mitigate the noise. Often the authorities have covered a stretch (thus increasing chrematistic costs and reducing ecological costs). But there has not really been a strong anti-car movement. Only the ecological-anarchist group Amics de la Bicicleta (Friends of the Bicycle), a few local initiatives (such as COVI, the Irritated Neighbours, in the Eixample district, who would like to pedestrianise some streets) and the wide environmental umbrella movement under the name of *Barcelona estalvia energia* (Barcelona saves energy) oppose the predominance of the automobile, which is in a more and more commanding position, because the favoured access to the city is now by means of the new Olympic motorways. Since 1992, motor traffic has increased and public transport has decreased.

The paradoxes of «modernism»

Are you aware that the secretary of the Societat Cívica Catalana la Ciutat Jardí (the Catalan Garden City Civic Society), Cebrià de Montoliu (1873-1923), left Barcelona in 1920 in self-exile, disgusted by the property-holding interests, and went to Albuquerque in the United States to help set up a settlement called Fairhope, where he died in 1923? In Albuquerque, of all places! Cebrià de Montoliu was a Catalan disciple of Patrick Geddes (the Scottish town-and-country-planner who invented the derogatory word «conurbation») and an admirer of John Ruskin, William Morris and Ebenezer Howard. Is it not incredible that a city full of buildings inspired by the Pre-Raphaelite movement, the city of Domènech i Montaner, the site of Parc Güell (originally a project for a garden district), the city of Gaudí, should have forced him into exile? To use modern terminology, Cebrià de Montoliu was an ecological town-planner. He was the theoretician of «organic» town-planning in Catalonia. Chronologically (having been born in 1873), Cebrià de Montoliu belongs to the «rationalist» and *noucentista* (as we say in Catalonia) period. He was born too late to join the initial Arts and Crafts and Art Nouveau movement in Catalonia, but his ideas were quite the opposite of rationalist *noucentisme*. He was linked to the Pre-Raphaelites, he translated Ruskin and was the author of the introduction to a Catalan translation of *New from Nowhere* by William Morris. Cebrià de Montoliu came from an aristocratic family and tried to join the popular movements of his time, and he unsuccessfully denounced the fact that private ownership of the land in Barcelona's area of expansion was an obstacle to development in the form of new garden cities (not garden suburbs), separate from the conurbation. Perhaps because he was excessively influenced by town-planners like Howard, the creator of the new garden cities, he did not attach enough importance to the potential role in Catalonia of the inland regional cities in the process of decentralisation. As he was a man with practical aspirations, he collaborated with major landowners in Barcelona, although their intention was to develop their properties near Barcelona rather than to create an alternative model of urban development. In the end, however, he ended up a frustrated man, defeated by the clan of property speculators.

Olympic Barcelona disguises itself as a utopian project and receives Harvard prizes for urban design,

but it is the same Barcelona that considers land merely as a means to make money. After 1880 and until as late as 1920 the patricians in this city were building themselves houses and even factories in the Art Nouveau style or Jugendstil, which we Catalans are very proud of and confusingly call *modernisme*. The fact that these patricians adopted this style would appear to indicate that they supported the anti-industrialist ideas of John Ruskin and William Morris, but they did nothing, nor have their descendants, to create an ecological model of urban development consistent with Art Nouveau or Jugendstil: this is a double paradox. Why did these families of industrialists, such as the Batllós or the Güells (a business and slave-trading family in Cuba, who became industrialists), build themselves Art Nouveau houses? Why did industrial Barcelona support architects like Antoni Gaudí, Domènech i Montaner, influenced by the Pre-Raphaelites? Other places in Europe (Brussels, Glasgow, Vienna) also adopted this architectural style, which was developed for aristocrats but realized by craftsmen, with its romantic ideals of protest against the social and aesthetic ugliness of industrialism. This return to the medieval became a national style in Catalonia, the result of simultaneous economic, political and artistic factors, because Catalan patriots liked to recall Catalan expansionism in the Middle Ages, and the moment was right for investment in property. The first paradox is: how could a style based on anti-industrialist protest conquer Catalan industrialists in the fields of architecture and domestic art? This protest against the social and aesthetic disasters of industrialism, originally British and in tune with a line of thought derived from Carlyle and continued by Ruskin and William Morris, leads to a socialist critique, or in the case of Morris, mildly anarchist, as he demonstrated in his booklet *The Policy of Abstention* or utopian socialist in the best sense of the term, as shown by his famous book *News from Nowhere*. And the second paradox is why did the model of urban development consistent with the social and aesthetic critique of industrialism that Art Nouveau represented, and the idea of the garden city separate from the metropolis, fail so completely in Barcelona, one of the capital cities of Art Nouveau? Were the material interests at stake in urban development more important than in architecture?

There is now a certain respect for Barcelona's *modernist* architectural heritage, but local politicians, even the «socialists» (Obiols, Maragall, Lluç and Serra),

declare that they are the heirs of the *noucentista* tradition; they reject the ideas of Ruskin and Morris and support industrialism and urban expansionism, now and in retrospect. Thus Barcelona, which used to have a bourgeoisie that was architecturally eccentric and a proletariat that was rebellious, now hoped that the European Union would install an agency or two, but did not want something like the European Environment Agency, vainly hoping that the European Bundesbank would be sited here, in one of the two glass towers in the Nova Icària. What a farce! But nobody laughs.

Modern town-planning began at the end of the last century and the beginning of this one. Some of those involved were Patrick Geddes, Ebenezer Howard, Camillo Sitte and Raymond Unwin. This «science of cities» was a rather late response to industrialisation and the accompanying phenomena of unprecedented urban growth. This was not the first time that cities had been planned, but the profession of town planning, with its congresses, magazines and university chairs, was quite new. Now, at the end of the twentieth century, when there are cities with populations of more than twenty million inhabitants, and everything suggests there will be cities of more than fifty million inhabitants if we continue along the same uncertain path, when ecology provides a different and critical perspective on the Industrial Revolution, the ecological version of urban development and town planning advanced by Patrick Geddes and Lewis Mumford is ever more relevant. However, the position generally held by architects and town planners is still not one of clear adhesion to the proposals of ecological urban development, but is closer to a total rejection of the very idea of planning cities. The idea of overall planning for cities sounds suspiciously «modern» at a time when being «postmodern» is all the rage; nowadays what is favoured are urban schemes and projects limited to specific sites (rehabilitation and gentrification in the centre, chaotic development of peripheral agricultural land by isolated schemes). This is how Barcelona's agricultural belt is being destroyed, by the new rings of motorways and by projects on the periphery, some of which develop hundreds of hectares at a stroke; some of the projects over the last few years have been the Cerdanyola Technology Park, the development of the campus of the Autonomous University in Bellaterra, the occupation of a large part of the Delta of the River Llobregat, the expansion of Gavà, the develop-

ment of Montigalà, the threat to develop what remains of Gallecs, etc. The occupation of agricultural land and woodland by leaps and bounds has been made easier by the fashion for building golf courses, promoted by property speculation interests. Golf courses need to be watered, and they use water treated with public money, but which contains much nitrogen and phosphorous. The excuse is that the contaminated water used to go straight into the sea or the rivers, and now at least it serves some purpose. Each golf course is followed by a new housing development. Just because golf courses are green, some people mistakenly believe they are ecological.

There were two main lines of town planning. One praised industrialisation and progress. The other mourned lost rural landscapes, the destruction of the historical buildings and structures of the medieval city. The first approach, associated with Le Corbusier, to cite a name, opposed the apparently reactionary, romantic approach of those who fought the city's loss of organic unity with its region resulting from the pressure of industrialisation. This approach favoured technological civilisation (and, since the twenties and thirties, urban development in favour of the car). Instead, Geddes had had a cultural approach to town planning, which tried to prevent the loss of identity suffered by smaller cities, captured and absorbed by the expansion of the conurbations, and which also opposed the destruction of historic human environments. There is one clear example of this in India. Patrick Geddes proposed that India, as well as Europe, should conserve its historic areas, but Le Corbusier's influence has led to the disaster of Chandigarh (the capital of Punjab and Hariyāna states), a sinister place built with the car in mind, but without taking into account the endemic poverty of India, and now full of abandoned dirty spaces.⁵

5. The newly independent state of India participated in this typically Corbuserian town-planning project, under the direction of Nehru, whose obsession with industrialisation was the opposite of Gandhi's ideology. The example of New Delhi is quite unlike that of Chandigarh; New Delhi was planned by Edwin Lutyens in the colonial period and has wide avenues and beautiful parks housing ruins dating from the Moghul empire. New Delhi is a planning success with gardens and monuments, but this is because it is the capital of the Indian state and is the centre of official life and the big hotels. New Delhi can absorb sufficient resources to care for its parks and to fill its avenues with traffic; many poor cyclists get run over and killed. The in-

The current rejection of the idea of general town planning in favour of limited specific projects, makes it possible to hide the fact that in the «science of cities» there were these *two* approaches, not just one. There was an organic, cultural, historic, regional and antimetropolitan approach that had a sound basis, because Patrick Geddes' and Lewis Mumford's ideas on *regional planning* had an explicit ecological content, perceiving the role of the flows of energy and materials in the human economy. This was perfectly compatible with an appreciation of the aesthetic approach of Ruskin and William Morris, but could also have been compatible with a new bioclimatic architecture designed on rational lines. This approach favouring organic urban development includes regional proposals for town and country planning, which are of course different from those advanced by the other, metropolitan, line, the one favouring «progress» and industrialisation. This approach had appeared quite early in Barcelona in the work of Ildefons Cerdà; it could, in fact, have turned out to be considerably different from the actual results and later adopted even less humanist lines with the change from the grid of square city blocks, of 100 m each side and about five stories high (easily transformed into pedestrian islands), to individual buildings between which pedestrians disappear. The blocks in the Eixample district of Barcelona are more and more inhospitable for pedestrians (now that the pavement has been invaded by cars and motorbikes), and things are getting worse because the interiors of many blocks are being converted into car parks. However, this city block structure is potentially much more human than Le Corbusier's isolated tower blocks, ships in an ocean where the car is the only lifeboat.

On the one hand, there is the line represented by Ruskin, Morris, Howard and Geddes, and in Barcelona by Cebrià de Montoliu, and maybe some anarchists, and on the other hand there is the industrialising and dehumanising approach (intended to be rationalist) from Cerdà to Le Corbusier and beyond. Now *both* these proposals for overall town planning are rejected. The holistic side of town planning, the hint of general rules that must be obeyed, clashes badly with the spirit of postmodernism, but this is no excuse for ignoring ecological and organic town planning. A specialist on the subject, Peter Hall, believes that Geddes, even more than Howard, considered that planning ought to be based on an ecological under-

standing of regions and on economic and social trends rather than on the imposition of an arbitrary vision of the world. Perhaps Geddes' intellectual training had something to do with this. He was not an architect who, by definition, thinks in terms of the structures that he wishes to build, but a biologist turned geographer and sociologist who started from the basis of the society and the land that he was planning.⁶ In the last five years, Patrick Geddes' rooms in Edinburgh's Outlook Tower have been reopened to the public, and his work is once again taken seriously.

Thus it is not correct to say that the historicist, culturalist and organicist tradition preferred to work at the level of architecture (the Art Nouveau or Jugendstil houses in Barcelona's Eixample) rather than the level of town planning. There was an ecological and organicist approach to town planning, Geddes' approach (and also Ebenezer Howard's approach, with its Garden Cities),⁷ and these ideas clearly reached Barcelona, but they were defeated with the exile of Cebrià de Montoliu around 1920 and the crushing of the anarchist movement during and after the Civil War. Nowadays, it seems unlikely that this approach will be resurrected in the institutions, that is to say in the Schools of Architecture, in council policies, in the ministries of the Government of the Generalitat of Catalonia (Public Works, Environment). This tradition of town planning which started with Geddes is regionalist, organicist, culturalist, anti-industrialist (but with the restrained technological optimism that characterised Mumford's and Geddes' «neo-technical» perspective) and historicist. It is basically ecological and thus scientific. It opposes the other approach, also generalist, but based on a belief in progress and industrialisation, which culminated in Le Corbusier and which ignores ecological considerations. The town-planning tradition of Ruskin-Morris-Howard-Geddes (together with the advocates of the Garden Cities) is anti-industrialist and romantic, but it turns out that the romantics were more ecological and thus scientific because they saw the cities in their *regional* context (where does the en-

habitants of Delhi lie in the old town or in much poorer suburbs, more and more of which are on the other side of the River Jamuna, where cholera breaks out every year.

6. Hall, P. *Urban and Regional Planning*, 2nd ed., Allen and Unwin, London, 1980, pp. 80-81.

7. Cfr. Creese, W. L., *The Search for Environment. The Garden City before and after*, John Hopkins U. P., Baltimore, 1992.

ergy water come from? where does all the rubbish go?).

In the history of town planning there have thus been two quite different approaches. Among the adjectives I have used for Geddes' approach is «organic» because that is what he called it. Although biological reductionism is not an adequate explanation for the phenomena that make up human history, such as cities, it is definitely useful to use the adjective «organic» for its natural connotations, its emphasis on the fact that the «biology» of the city requires a supply of energy and materials (on a scale that depends on the number of inhabitants and their exosomatic energy consumption) and generates wastes. The city cannot be ecologically separated from its region, and I mean this in a more material sense than the French school of regional geography. The incoming and outgoing flows of energy and materials will vary in accordance with the form of urbanisation adopted and will depend on the technologies used to transport persons and things, on the extent to which rainwater is collected and used water is recycled, on rubbish collection systems, on heating systems, and on the construction techniques used in buildings. The rural land around the city is not considered by ecological town-planning to be a mere reserve for the «production» of urban land where housing and communication facilities can be built, but as the site where the energy of the sun produces the plant material necessary for food, and furthermore it is aesthetically pleasing and plays an important climatic role. This leads to attempts to slow down the extension of the conurbations in «oilstains» by defending woodland reserves and *agricultural belts* where no building is allowed, and *new towns* beyond this belt, or, in the case of Catalonia, regional cities with good public transport links to, but separated from, the metropolis. Underlying this ruralist vision of urban development, there was in Geddes (and Mumford's) thought a genuinely ecological attitude.

Geddes and Mumford's vision of town planning was ecological, but this version of ecology had nothing to do with the later anti-urban and anti-industrial rhetoric of the anti-rational European fascisms. When the Greens appeared in Germany there were attempts to identify them with the alleged ruralist tendencies of Nazism, based on the ideology of *Blut und Boden* (blood and soil) advanced by some ideologists who participated in Nazism, such as Walther Darré, who advocated a return to the land, considering that the

peasantry was the backbone of the German race. In 1980, however, there were others who considered that the Greens were merely disguised like watermelon; green on the outside and red inside. In any case, as political ecology is a critique of industrialism (its ecological, social and aesthetic effects), and as political ecology undeniably sees many virtues in traditional agriculture, the equation *Ecology = Blut und Boden* is still used to discredit political ecology, as, for instance, by the French philosopher Luc Ferry. In reality, however, Nazism, like Italian and Spanish fascisms, favoured industrialisation and demographic growth, not really «green» causes! In the field of architecture Nazism favoured to some extent a rural *Heimatstil* in some constructions (as did, *mutatis mutandi*, Franco's Rural Colonisation Institute with its picturesque villages) and opposed the international style of Mies van der Rohe or Le Corbusier, but the real favourite architect of the Nazi regime was Albert Speer, who followed a neo-classical monumental style.

Nazism used the rhetoric of *Blut und Boden* but its praxis was based on *Blut und Autobhanen* (blood and motorways). This was true to such an extent that it is possible to quote enthusiastic praise for the car from Hitler himself.

«It makes us bitter to think that millions of working human beings, both virtuous and brave, do not have the means of transport that, especially on Sundays and holidays, would be a hitherto unknown source of joy to them... We must finish with the class nature of the car, the sad fact that cars separate society into different social classes; it is necessary for the car to be something that everybody uses, not a luxury.»⁸

This statement of Hitler's could have been made by Henry Ford ten years before Hitler or some high-up bureaucrat in the former DDR thirty years later. The statement is even more effective in dispelling the incorrect idea that fascism was ruralist and opposed «progress», if we bear in mind the origin of Volkswagen and that Volkswagen-SEAT is the largest enterprise in the conurbation of Barcelona. It would be very dif-

8. *Völkischer Beobachter*, March 9, 1934, cited in Wolfgang Sachs, «Die automobile Gesellschaft. Vom Aufstieg und Niedergang Einer Utopie» in Brüggemeier and Rommelspacher (eds.), *Besiegte Natur. Geschichte der Umwelt im 19 und 20 Jahrhundert*, C. H. Beck, Munich, 1987, p. 116.

difficult to launch a campaign in Barcelona against cars, not only as consumer goods but as a source of jobs.

Car-based civilisation, whose arrival has been one of the fundamental facts of the urban development of Barcelona over the last thirty years, and which has accelerated in the last five, not only leads to air pollution, noise, loss of agricultural land, but the happiness that its use may eventually bring to its users cannot be spread to the rest of humanity. This consideration would have been of no importance to someone like Hitler, who showed so little concern for humanity as a whole. But genuine liberals and social-democrats may be convinced of the necessarily minority nature of the car in a global context, and its serious ecological effects, and maybe this will make them reconsider some of their ideas. For the moment, I repeat, this is not the case in Barcelona, where town planning continues to be at the service of the motorcar, following the path taken in the thirties with Le Corbusier's recommendations for town planning, which were very well received, then and now, by socialists and communists in Catalonia (although not by the few anarchists who took an interest in town planning).

Corbusierian monstrosities

The obvious connection between the architecture of Gaudí and Domènech i Montaner and that of Ruskin and William Morris raises the question of why there was no «organic» school of town planning in Catalonia, although there was an «organic» school of architecture. Cebrià de Montoliu's attempt failed. Later, during the Second Republic, the 1932-1934 Macià Plan for Barcelona was inspired by Le Corbusier and was a sign of the Barcelona authorities' support for the «rationalist» (not rational) approach to town planning, the opposite of the «organic» approach. In fact, although it was perhaps correct to call Le Corbusier's architecture «rationalist», his ideas on town planning (what is under discussion in this paper) were not at all rational from an ecological point of view. Of course, the economic and political circumstances of the thirties fortunately did not allow the reconstruction of the city of Barcelona in accordance with Le Corbusier's town plan (drawn up together with a local group called GATCPAC). Why has this plan been so favourably considered in Barcelona by both Socialists and Communists? The reasons for this may have something

to do with the period when the plan was proposed, the Second Spanish Republic, and with its name, the Macià Plan (Macià was a hero of radical Catalan nationalism, and his name was given to this plan although he did not participate in it at all). Other reasons for their enthusiasm are related to this left's tendency towards progress in the form of cars and the cement industry.

Local experts in the history of town planning have concealed Cebrià de Montoliu's clear opposition to the expansion of the Barcelona conurbation. The most valuable academic study of the planning of Barcelona in the first third of this century is the doctoral thesis by Torres Capell,⁹ who dedicates a whole chapter to Cebrià de Montoliu and the Garden City Society, but attaches little importance to Cebrià de Montoliu's resignation and departure to the United States when he saw the failure of his plans around 1919-1920. The ecological and social significance that the idea of the Garden City could have had in Catalonia, connecting Ruskin-Geddes, Morris (and Howard) with the ecological town planning of Cebrià de Montoliu, is not really studied by Torres Capell, who, incredibly, hardly mentions Patrick Geddes. Cebrià de Montoliu specifically described Geddes as his mentor from 1913 onwards, even before the publication of Geddes' book *Cities in Evolution* in 1915. From reading Torres Capell nobody would guess that the term «civic science» (that is to say, science of the cities) that Cebrià de Montoliu used¹⁰ came from Geddes, as did the regional survey procedure that Montoliu recommended before drawing up a town plan. It is due to Geddes' influence that in Great Britain people talk of *town and country planning* rather than town planning, thus putting the city into its regional and ecological context. The distorted interpretation by Torres Capell attributes responsibility for introducing in Barcelona the idea of «urban rationality» to Montoliu. In fact, this would be adequate if we took rationality to mean an ecological approach, but it is wrong to use this term if it places Montoliu within the general consensus on the plans for expanding the Barcelona conurbation, which range from the

9. Presented at the Barcelona School of Architecture in 1978, before a tribunal consisting of Oriol Bohigas, Manuel Solà-Morales, Ernest Lluch, Manuel Ribas Piera and Enric Argulló. Published by the Polytechnic University of Barcelona, under the name *El planejament urbà i la crisi de 1917 a Barcelona* (Town Planning and the Crisis of 1917 in Barcelona), 1987, Barcelona.

10. Torres Capell, *op. cit.*, pp. 86-87.

Eixample plan by Cerdà, the Jaussely «traffic links plan» dating from the beginning of this century, the working class blocks and garden suburbs of the 1910s and 1920s (something quite different from the Garden Cities *separate* from the conurbation), and up to the Corbusierian Plan in 1932-1934. This plan has been considered in town planning in Catalonia as «progressive» or «leftist», as Torres Capell considers it. This is also how Francesc Roca interprets it.¹¹

There is another possible interpretation;¹² there was an organic or ecological approach to town planning (which came to nothing in practice) ranging from Cebrià de Montoliu to those anarchists who took an interest in town planning problems, especially Alfonso Martínez Rizo, author of the leaflet *La urbanística del porvenir* —The Town Planning of the Future— (1932). There was an alternative approach to town planning, which opposed expansion in the form of an «oilstain» on the periphery but it ran into several problems. In the field of ideas, it had to confront the illusion of unlimited urban expansion. In practice it ran into the problem of the chrematistic interests of the owners of the land that could be built on. Martínez Rizo clearly understood the theory of the Garden City and agricultural belts (which he supported and optimistically called «modern town planning») and he also clearly summed up the reasons for its failure in practice:

The large cities, in order to house the stream of new citizens that causes them to grow continuously, should build city nucleuses *separated* from the city centre by a specific distance that allows good communications but *leaves free the agricultural land* necessary for social health and hygiene... These are the conclusions reached by modern town planning, logical and reasonable as far as they go, because the truly rational thing to do would be to *disconnect* the large cities... but these conclusions are limited to laying down principles that cannot be put into practice. The owners of the land that would have to be turned into free areas are, in the capitalist system, a force that is showing itself to be effectively invincible.¹³

The current crisis of the idea of overall town planning does not bother Barcelona's town planners; on the contrary, they are like children at the postmodernist school taking their recreation break. However the triumph of isolated projects (which can consist of hundreds of hectares in the peripheral areas, but which do not form part of a general planning policy), this triumph against *regional planning*, is in my opinion a

short-lived triumph of metropolitan ideology over the ecological critique. The rejection of the general idea of town planning leads to the consideration of the city as something totally alien to its ecology, as a literally metaphysical entity. This is «culturalism» in the worse sense of the word, it is outdated, it is provincial, and it is what rules the roost in the Barcelona of today. The fact that overall town planning is out of fashion means that urban development occurs in the form of a scheme here, a project there; the «anything goes» approach that is postmodernism. But shouldn't these interventions be seen in some sort of context? What is this context? Is it the normal conception of urban expansion, or is it the ecological blending of the city into its surroundings? The absence of an overall approach to town planning allows this question to be ignored.

11. Francesc Roca is the current manager of the magazine *Nous Horitzons* (New Horizons, the magazine of the Communist Party of Catalonia), and he has written works on town-planning policies in Catalonia. These works do not clearly distinguish between Cebrià de Montoliu's approach and that of the «rationalist» school of development, but rather throw everything together into a progressive mish-mash. Francesc Roca misunderstands the British Pre-Raphaelite movement. Barcelona Council published in 1993 a collective book on Cebrià de Montoliu. In this book, Francesc Roca, who had already written about Cebrià de Montoliu, actually states (though it is difficult to believe) that Ruskin was an admirer of the Renaissance (p. 27), and also states that William Morris was a Marxist (p. 164) this mistake is perhaps due the unfortunate first edition of E. P. Thompson's biography of Morris, written while E.P. Thompson was still a member of the British Communist Party). This is quite ridiculous, and shows how Cebrià de Montoliu has been misunderstood in his home city. Montoliu is presented by Francesc Roca as the introducer and supporter of the opposite idea of the garden city, but at the same time as the introducer of the idea, urban expansion following the model of Gross-Berlin, and Roca argues that *all* his proposals (p. 129) have been continued in Catalonia. He does not investigate Montoliu's obvious failure. In the same book, a thoughtful piece by Montoliu criticising Taylorism in 1915 is distorted to make him appear as the «critical introducer» of Taylorism into Catalonia (Carmen Masana), and the young writer Agustí Colomines adds the final touch by declaring Montoliu to have been a *noucentista* (though a left-wing one!).

12. Eduard Masjuan has developed this idea in his article in the magazine *Archipiélago*, n. 7, 1991 and in *Urbanismo y ecología en Cataluña*, Madre Tierra, Madrid, 1992.

13. Martínez Rizo, *La urbanística del porvenir* (The Town-planning of the Future), 1932, pp. 24-25, cited by Masjuan in *Urbanismo y ecología en Cataluña, 1901-1937*, Madre Tierra, Madrid, 1992. The underlining is mine.

Thus, the absence of a general approach to town-planning has profoundly anti-ecological implications. Some proofs of this: at the same time as a pretty beach is opened in Barcelona, the old city is gradually being renovated, the neighbouring territory is being destroyed by motorways, the Llobregat Delta is being destroyed, the entire possible agro-forestry green belt is being built on, enormous amounts of energy created by nuclear power are imported, and water resources are managed in a colonial style.

The architects of Barcelona, such as Oriol Bohigas, whose vision is as extensive as a city pigeon, whose town planning does not extend to the very wide region in which the conurbation is ecologically located, and does not even reach Catalonia in the narrow sense, whose attitude to technology is that of uncritical users, are antiquated. After the Spanish Civil War (1936-1939), these «rationalist» architects managed in fifties to renew the links with the international movement; all one needs to do is to compare the heaviness (reminiscent of El Escorial) of the Pharmacy Faculty in the Diagonal Avenue, with the graceful (and energetically wasteful) glass building of the Law Faculty, dating from 1957, on the other side of the same avenue. It is true to say that a victory was won against fascist architecture. I stress, however, that the architects responsible for planning Barcelona have been incapable of an ecologically rational approach. Oriol Bohigas, in his writings on «modernism», does not mention Geddes or Cebrià de Montoliu.¹⁴ It is not necessary to renounce beautiful individual buildings, in any style (and I am not advancing an absurd return to Art Nouveau), and it is definitely necessary to subordinate architecture to a morphological and historical interpretation of its urban surroundings (as Oriol Bohigas has written). However, architecture should take the ecology into account. In addition, specific urban schemes within the conurbation should form part of an ecological interpretation including the regional surroundings in the widest sense. In Barcelona, architects have been too powerful over the last few years, and architects are not well prepared for the role of town planners; town planners should be ecologists, who come out of their woods and wetlands, and get involved in politics.

14. Bohigas, O., *Reseña y catálogo de la arquitectura modernista* (Catalogue and Critique of Modernist Architecture), Lumen, Barcelona, 1983.