

***The 22@bcn Activities
District****

Antoni Oliva

Aula Barcelona

* Translated to English version from the book: OLIVA, ANTONI: *El districte d'activitats 22@bcn*, Barcelona, Aula Barcelona (Model Barcelona, Quaderns de gestió, 15), 2003

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The idea for the **Barcelona Model. Management Booklets** began with the experience we have accumulated in the process of developing Barcelona over the past 20 years, and our basic aim is to study the management of the city and the key elements and people that made its transformation possible. The first phase involves preparing issue-based papers aimed at explaining the key elements of the Barcelona Model. The series is a proposal of Pasqual Maragall, Mayor of Barcelona 1982-1997.

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Abstract

Introduction

When I first began to work on the study entitled *Digital City* in the summer of 1998 I didn't realise the scope of the project to which I was making a modest contribution. Only with time would I be able to grasp an idea of its potential.

This text has been written from two points of view: firstly, as a privileged spectator lucky enough to experience some of the episodes in the gestation of the project, and secondly, from the point of view of someone convinced and affected by it: as a resident of Poblenou I confess I have been won over by the 22@ project.

This doesn't mean I don't take an uncritical view. Indeed, I have tried to gather information from very diverse sources to provide a perspective on all the factors involved. However, I think it is only fair to acknowledge that I may be somewhat subjective and would like to apologise for this in advance.

On the other hand, I wouldn't particularly mind the text being read as having a certain propagandist air. Long-term initiatives like this must have a shared vision on the project at hand. A shared vision is not the same as a single vision - indeed, that is its strength. Each person's contribution from his or her own point of view adds diversity to the overall work that strengthens rather than weakens it.

Finnish society knew how to transform an economy based on natural resources into one founded on information technologies and communications. The resources the Government put into the plan were no more important than the people's belief in the fact that change was possible. Each person could take his or her own path afterwards. This led to the emergence of Nokia as telecommunications giants and Linux and the movement around free software. The diversity of perspectives strengthened the shared vision and today Finland is one of the most advanced countries in ITCs and is seen as a model in the transition towards the knowledge society.

The project of the 22@ bcn Activities District goes beyond the strictly town-planning sphere to establish a new model for making a city. That is why my explanations are not restricted to the regulatory field. In this paper, I will go over the history and background, the concepts, regulations and the reality of the plan.

The text has been structured as follows:

- After a brief introduction, I will look at the history and territory of the area involved in the plan. I will begin by going over the history of Poblenou, move on to the most recent transformations and end with the first reorganisation proposal.
- In 'The Genesis of the Project' (section 3), I will look at the *Digital City* study and how complexity prevented us from determining single goals and forced us to take new approaches.
- Section four is an explanation of the modification of the General Metropolitan Plan that created the 22@ bcn Activities District. I take a detailed look at the infrastructure plan and the development of special plans and urban improvement plans.
- Section five looks at the role the new district must play in the Barcelona metropolitan region, which, as we see, can be summed up in two words: centrality and complementarity.
- The final section includes a brief summary of the situation two years after the activities began (this text was prepared in 2002 and reviewed in the spring of 2003). To end the paper, I have formulated a vision that the evolution of the 22@ area and the whole neighbourhood of Poblenou could follow. This involves a number of personal reflections on the project.

As well as the interviews with the people mentioned in the acknowledgements on the credits page, the articles about the 22@ bcn Activities District, the knowledge city and urban renewal by Josep Anton Acebillo (the chief architect at Barcelona City Council), Vladimir de Semir (the councillor responsible for the Knowledge City), the architects Richard Rogers and Oriol Bohigas, the geographer Oriol Nel.lo and the economists Joan Trullén and Rafael González Tormo were also very useful in the present study.

I trust this text will at least clarify some of the goals and solutions with which the project was put into practice. I hope it will also be inspiring and contribute to the appearance of the shared vision I mentioned earlier, under the particular point of view of each person, to make the 22@ bcn Activities District a leading initiative in the knowledge city.

The Historical Framework

The Trajectory of Poblenou

The 22@ project was developed entirely within the neighbourhood of Poblenou. Indeed, it is the latest transformation of its industrial areas. The area called Icària, which popular lore has it was named by the urban planner Ildefons Cerdà, began to be developed 15 years before the renewal process that gave rise to Nova Icària and Vila Olímpica.

It seems that this neighbourhood (576 hectares ranging from Ciutadella Park through to carrer Josep Pla, from the sea through to the avenues of La Meridiana and Gran Via, which pertains to the district of Sant Martí and that began the 21st century in the same way the previous one ended, i.e., with large-scale transformations) has still an important role to play in the urban, social and economic fabric of the metropolitan region.

The 200-year history of Poblenou (whose first mention as a separate nucleus dates back to 1848-1850 when it was referred to as the ‘new settlement south of Sant Martí’) is so intense, so well-lived, so rich in characters, mobilisations, actions and associations, that even today one can feel it when walking the streets, passages and squares. It is not surprising that literature abounds on the topic: much has been and is being written about the history of Poblenou.

Without aiming to give a new historical review, I would like to focus on the facts that contributed to the formation of an eminently industrial neighbourhood with a complex town-planning scheme and isolated from Barcelona, which gained a strong local flavour, based, as Elisabet Tejero and Rafael Encinas said, on “a popular and caring character”. Without this background, we would be unable to grasp the current neighbourhood or the impact that the 22@ development could have on it.

Having pertained to Sant Martí de Provençals until it was annexed by Barcelona in 1897, Poblenou consisted until the early 18th century of marshes and pastures. It was an inhospitable terrain where malaria wreaked havoc and where the neighbouring city established the activities whose extensive nature or the aggravation they produced prevented them from being located within the city walls. These activities included pastureland for the flocks that had to rest before slaughter (which stopped the land from being turned into crops), the quarantine station and the cemetery.

By the 1700s, the differentiation between the area with respect to the rest of Sant Martí de Provençals was clear. While the central area of the city was eminently agricultural, other types of activities were developed in Poblenou, although not on a very intensive scale. These included fishing, pottery and tile making, which made the most of the abundance of reeds; saltworks on the sea shore, and flax making, which was common because of the great availability of water and space for drying the fabric it was made into. This latter activity was the forerunner of the area’s first industrial specialisation, i.e., the calico fields. Calico was cotton fabric that required wide-open spaces to be laid out on the grass to dry in the sun as part of the whitening process before being printed. The great demand for calico led to the first conflicts between the calico fields and pastureland.

The calico fields were part of the 18th-century manufacturing system that preceded the mechanical phase within the process of the industrial revolution in Barcelona. After the third decade of the 19th century, cotton whitening began to use other processes that did not depend so heavily on sunshine, but industrialists of the time had already realised the new possibilities of an area that abounded in both water and

space. It didn't take long for the first steam-operated textile factories to be established in the part of Sant Martí closest to the sea, and around them sprang up boilermakers, foundries and workshops to service the needs of an increasingly mechanised industry, as well as other types of industries attracted by the dynamic manufacturing environment. By 1855, the number of factories in Sant Martí stood at 57, most of them located in Poblenuou.

With the definitive demolishing of Ciutadella, which began as a result of the 1868 revolution, the development of the neighbourhood accelerated. The first big industries were built and warehouses and factories in different sectors appeared all around. Although the textile industry (spinning mills and dyeing factories) continued to dominate, other industries also appeared, including flourmills and food factories, wine warehouses that took advantage of the proximity to the port, barrel making, chemical industries, tanneries, etc.

At the same time, the town-planning scheme became more complicated. Originally the only important route was the Mataró road (today Pere IV), but it didn't take long for a small network of squares, the first being Isabel II (later Plaça de Prim) and streets, such as Taulat, to be articulated. Other important streets that appeared included Sant Pere (today Marià Aguiló) and Triomf (today's Rambla del Poblenuou). The neighbourhood began to be built on this flimsy structure. Moreover, there was little control from Sant Martí Town Hall on the buying and selling of land and its subsequent use, which led to the indiscriminate mix of factories and private dwellings. Many of the buildings from these early days are still around, most corresponding to the old plot running perpendicular to Pere IV rather than any subsequent organisation.

Following the annexation by Barcelona in 1897 (a move not without conflict), the urban structure established by Cerdà's Plan nearly 40 years before expanded more rapidly. The plans to adapt the grid pattern to the existing reality lasted until 1925, and even then many small streets and factories continued to cut across the lines Cerdà had projected. The local passages have their origin in these early decades of the 20th century. Dividing a block internally made it possible to get more yield from it, given the increased housing demand due to rapid migratory growth, which from the second decade of the century on was further increased by the works for the second International Exhibition, finally celebrated in 1929.

To this complicated urban scheme we can add the proliferation of barriers that isolated the neighbourhood from Barcelona. Spain's first railway line, which opened in 1848 and ran from Barcelona to Mataró, represented the first physical limit separating Poblenuou from the sea. The Granollers line was added shortly afterwards. Although bridges like the ones in carrers Marina and Almogàvers (from 1927) relieved the situation to some extent, they did not prevent the feeling of a neighbourhood shoehorned between the railway tracks, Ciutadella Park and, in later years, Gran Via.

The population had grown spectacularly by the end of the 19th century (from 9,333 in 1860 to 26,000 by 1888 for the whole of the Sant Martí municipal area), attracted by the need for labour in the factories, the number of which had risen by 1888 to 243, with 152 located in Poblenuou. The strong immigration flow and miserable work and hygiene conditions led to a rise in social mobilisations and the development of associations, clubs and cooperatives. These were the unfavourable conditions under which a strongly structured neighbourhood expanded, a neighbourhood that would have a leading role in episodes of social unrest from the final decades of the 19th century through to the Civil War.

The urbanisation and industrialisation of Poblenou continued apace in the 20th century. The type of industry also underwent important qualitative changes: the first-generation industries of Poblenou, which consisted of factories that in many cases were composed of relatively simple single-floor bays, was transformed with the arrival of electricity. Boilermakers and steam-run industries gave way to bigger, more diversified plants. This was the second industrial generation. It featured metal factories, engine and vehicle plants, the food industry of a certain size, big chemical factories, machine-tool plants, etc. and led to a significant territorial expansion of Poblenou, configuring the industrial model that has had the most impact on defining the neighbourhood.

It was only in the 1950s that the area saw the appearance of new types of industry, favoured by the 1953 Regional Plan that authorised high-rise industrial buildings. The new factories involved lighter and smaller activities with less impact, which allowed a certain physical concentration of companies.

The area reached critical point in the 1960s. To the economic boost of the development plans was added the arrival of the production maturity of the area: the successive industrial generations had led to an extraordinarily rich and varied production fabric. Workers had developed an important degree of specialisation and a cohesive and compact population lived in the middle of the different industrial areas.

As in many big cities, factories began to move out during the 1960s. However, the decline was slow and, although the 1973 crisis sped it along, Poblenou continued to be (along with the ever-growing Zona Franca and Bon Pastor) the industrial area *par excellence* for the city of Barcelona. It was in this late period that the industries that support building began to take on an important role. The first transport companies, which went on to become a regular feature of the neighbourhood, also arrived during this time.

It is not hard to understand the mass arrival of transporters. The availability of bays that the transferred industries had left empty, which could be adapted into cost-efficient warehouses and loading and unloading bays close to the heart of the city, made Poblenou the ideal place for establishing cargo break centres and final cargo-distribution points.

In terms of town planning, there were five episodes prior to the large-scale transformations of the 1980s and 1990s that were particularly important.

The first episode was the extension of a practice that had already begun in the 19th century, i.e., the densification of the industrial blocks, often with the incorporation of housing. This trend was common at least until the mid-1950s.

The second episode was the idea of completely rezoning the whole area, as proposed by Le Corbusier and the GATCPAC group. The so-called Macià Plan of 1934 wanted to make the entire sector residential and transfer industry to an area above the future Gran Via. This plan, conceived within the rationalist style of the time, was still on the drawing board when the Civil War broke out.

The third episode was the 1953 Regional Plan. This plan determined limits for industrial expansion in the eastern part of the city and projected Besòs and Gran Via as areas for housing densification (with most of the dwellings being protected housing). Other decisive contributions of the plan were the regulations to open the area up to new industrial types and the classification of extensive areas of Poblenou as industrial land, despite the housing developments established there.

The fourth episode was the Ribera Plan, which influenced the consolidation of grassroots neighbourhood movements. The plan, which was initially announced in 1965, anticipated the creation of a 500m-wide strip along the coast from Barceloneta

through to Besòs for high-quality housing. The separation from the rest of Poblenou was determined in the shape of a highway running alongside the sea at approximately the height of carrer Llull. If the Macià Plan represented the rationalism typical of the 1930s, the Ribera Plan was a good example of the speculation of the 1960s. The plan was supported by big land-holding companies and approved by the City Council of the time. However, despite being approved in 1970, it was never put into practice due to opposition from local residents, with support from intellectuals and professional colleges. However, leaving the plan's approach aside, it did reflect the lack of definition that had begun to be felt with respect to a neighbourhood which, since the creation of Zona Franca in 1965, had, as I have already said, begun to experience industrial closures and transfers.

The revision of the Regional Plan and the subsequent approval of the General Metropolitan Plan (GMP) in 1976 was the fifth big episode in this town-planning review of the 20th century. The GMP contributed important elements, some of them worrying, for the town planning of the area. The strengthening of Glòries Square as a highway hub and the coastal rail reserve gave a *regulatory* nature to the isolation of the neighbourhood to the north and south. Meanwhile, the consolidation of the industrial zones as set out under the Regional Plan confirmed the irregular situation of nearly 5,000 houses built in these areas: although this was more about a lack of legality rather than outright illegality, the difficulties of making any type of reform was a constant factor in the years of the GMP.

This was thus the situation when the large-scale transformations of the late 1980s began: an eminently industrial neighbourhood, but with important symptoms of abandonment; a situation of irregularity of nearly 5,000 homes; a city centre based around the Rambla which was urbanistically complex but also rundown and isolated from Barcelona because of infrastructure; and a grassroots neighbours' movement that was aggressive in its demands and united by a strong feeling of solidarity.

The Most Recent Transformations

The trend of the 1970s and the early years of the 1980s, as we can see in the section above, was towards decay: the economic crisis had accelerated the deindustrialisation of the neighbourhood. The area was slowly falling apart, dragged along by the fate of its industrial areas and without any operations on the horizon that could reverse the trend.

However, the situation was to change after 1986, when Barcelona won the right to host the 1992 Olympic Games. Poblenou was to be directly affected. The construction of the Vila Olímpica involved the transformation of one of its industrial areas, Icària, and a whole series of projects were designed to complement this central intervention, including the transferral of the coastal railway lines, the construction of the Ronda Litoral coastal beltway, the recovery of beaches, the creation of the Litoral and Poblenou parks covering the beltway, and the improvement and covering of the Bogatell sewer.

Other projects that affected the Poblenou area were added in the 1990s which gave it an increasingly central nature. Big facilities such as the Auditorium, the National Theatre of Catalonia and the Pompeu Fabra University in the former Jaume I barracks (close to Ciutadella), the conversion of the old Olivetti building into the Glòries shopping centre, the extension of the Rambla through to Gran Via and, more recently,

the opening up of Diagonal through to the sea, confirmed the desire to transform the whole of the eastern area of the city.

Opening up Diagonal had a great impact and favoured the redevelopment of extensive areas that were formerly industrial. At the same time, other more particular projects were undertaken, such as opening and developing carrer Llacuna above Pere IV and carrer Bilbao in the area known as Paperera. Finally, the conversion into residential areas of six blocks between the remodelled passeig Taulat and the side of Ronda Litoral (the Poblenou Seaboard Front Plan), the work of the developers Hines in Diagonal Mar and the first projects for remodelling the Besòs outlet radically changed the features of the neighbourhood.

Parallel to these developments was the improvement of the historical centre, including turning the Rambla into a pedestrian area, and the area around the market and carrer Marià Aguiló, as well as the rehabilitation of old buildings and construction of new housing developments.

Although this short review has focussed on the big public and private developments which in general followed the municipal initiatives or previsions of the GMP, we should not forget other private activities that also marked the future orientation of the industrial zones.

These included the activity of artists, who had begun to move into the neighbourhood in the 1980s attracted by the functionality and the price of spaces provided by former industrial bays. One example was the Palo Alto studio, which designer Javier Mariscal established in Poblenou, taking over a manufacturing plant on carrer Pellaies. Nor was this the only case: the Hangar Group, Submarino and many other collectives and private individuals migrated to this area of town in a process recalling New York's Soho district during the 1970s and 1980s.

It is also important to mention the restoration of former industrial bays to house new activities. These include the rehabilitation of Vapor Lull, which turned the former Massó y Cia company into 18 multi-use modules for residential dwellings and workshops, and the rehabilitation of Can Canela, where the Catalan Institute of Technology set up premises.

Reusing old buildings went on to become a relatively common practice. However, aside from straightforward physical rehabilitations, we should ask to what point the mixture of uses started by the new colonisers began to lay the ground for what later became one of the *leitmotifs* of the planning modification.

Another phenomenon worth mentioning was the appearance of bars and nighttime leisure facilities concentrated around Pere IV and Almogàvers, which also used existing buildings. Their coexistence with homes proved conflictive, especially on weekend nights, when the area significantly named "louts' triangle" was invaded by young people from across Barcelona.

However, even by the 1990s, and despite the big interventions and the spontaneous evolution of areas where interventions were not scheduled, there was still a superposition of town-planning situations:

- A discontinued industrial zone concentrated in three areas, with good accessibility and increasing centrality.
- A diversity of activities that constituted the tonic to industrial areas. These included big and small manufacturing facilities, transport and distribution companies, commercial premises, leisure facilities and, on a smaller scale, artists and new activities. The diversity of production lived alongside with and

contrasted against a rise in the number of abandoned buildings, some in a state of ruin.

- A housing supply within the industrial zones that suffered from the servitude of the activities installed there, with the aggravating factor of their situation of irregularity.
- The existence of architecturally valuable buildings (even if some were in an advanced state of dilapidation) that represented the diverse periods of the neighbourhood's industrialisation.
- A variety of urban fabrics that made unitary interventions difficult.
- An increased overall population. The new developments on the seafront, the Diagonal area, etc. added in a relatively short time some 45,000 people to the 48,000 inhabitants of 1996, i.e., the population doubled without a plan for basic facilities being prepared.¹

The study entitled 'Redefinition of the Urban Fabric of Poblenou', prepared by the College of Industrial Engineers of Catalonia in 1999, found that as far as production land went, the situation was dominated by the profound process of deindustrialisation that had begun decades before. Although there was a certain renewal of the fabric, and despite the fact it was moving towards small or micro-enterprises (some of a high technological level), the pace at which new activities were implemented was not enough to promote and consolidate economic activity. Indeed, the 1976 regulation itself impeded transformation because of the rigidity with which it defined the types of activities allowed.

With this town-planning and production situation, it was clear that a planning intervention was needed for the Poblenou areas classified as industrial (i.e., the 22nd classification in the GMP), which had still to be tackled. The different parties involved with land began to turn their attention to this area.

The First Reorganisation Proposal

The Office for Town Planning Studies at Barcelona City Council, run by Juli Esteban, prepared the first document that looked at the post-Olympic Poblenou in 1995. The work was entitled 'Poblenou, Town planning Recognition and Proposals'.

The study was a rigorous analysis of the industrial areas of Poblenou and considered both its evolution and the consequences of the transformation of the area. It also distinguished between and described up to six different urban fabrics that had arisen from successive organisations, contributed a number of prophetic reflections on the requirements and conditioning factors of the new urban industry, and anticipated a possible transformation of the production fabric linked to a town-planning operation. City Council was thus aware of the need for important actions in the area.

People who argue that uncertainty leads to expectation and thus a rise in prices are right. If we read in this key the time it took between preparing the study in 1995 and when the first regulatory document (*Poblenou: The Renovation of Industrial Areas. Planning Criteria, Goals and General Solutions*) was published in 1998, the protraction was certainly very undesirable. However, these three-plus years were decisive in consolidating an economic, technological and social moment that made it possible to realise the audacious plans contained in the definitive planning document of 1999. Although the revolution in ITCs had begun many years before, euphoria was unleashed

¹ Later, in July 2001, local residents and City Council agreed on an endowment programme in which the contribution of land from the 22@ project would be important.

around them after 1994, which did not collapse even when the dot.com financial boom (of companies based exclusively on Internet use, content and applications) exploded a few years later.

Internet expanded in a way that no other new technology application had experienced. Word processors doubled their capacity in accordance with the well-known Moore's Law, their price came down and ITCs continued to extend their sphere of activity. To the good health of traditional technology companies were added companies based on information and content. In short, the human race's long-held illusion that anything is possible became reality with regard to IT companies in the space of only four or five years.

They were also important years intellectually. In 1996, Professor Manuel Castells published his trilogy on the information society: three books that located us in what he coined the *network society*, which were essential in trying to understand the world we lived in (both in 1996 and today, because this is not a work that quickly loses relevancy). On the basis of this and many other publications (some purely science fiction, others more serious, and some that recall 19th century Luddism), there began to be an awareness of the revolutionary nature of ITCs.

The sparkle of those days left its legacy. Many dot.com companies collapsed in the spiral of naivety and excess typical to American business and its stock market. Things then went back to normal: viable businesses continued, unviable ones closed. In any case, the technological possibilities available to companies and end users today bears no resemblance to what was around at the beginning of the 1990s, and this has allowed new approaches in both the public and private spheres.

The projects designed at the time were also the legacy of the period, prepared with infectious ambition and a maximalist approach.

The Genesis of the Project

The Digital City Model

The document *Poblenou: The Renovation of Industrial Areas. Planning Criteria, Goals and General Solutions*, prepared by Barcelona City Council and released for public display in May 1998, represented the starting point for the definitive planning modification. It was the first document of a regulatory nature, i.e., necessary for reforming the General Metropolitan Plan.

With regard to town planning, it represented an adaptation of the study made by the Office for Town Planning Studies at Barcelona City Council, with the addition of a part on economic and territorial strategies for Barcelona led by Joan Trullén, which began, although timidly, to shape the final project. But imprecision about the amount of land to reclassify and the permitted building area began to worry people. The developers were possibly the first to define their position, waging an intensive battle through the press about their scepticism of mixing industrial and housing areas and demanding more actions to prevent the creation of expectations, which they felt would favour speculation. However, in the end, they discreetly supported the plan.

Before the summer of 1998, when in charge of the Urban Development Department at City Council, Borja Carreras-Moysi decided to support the reclassification of 50% of the land as residential areas, concentrating on the zone made up of the streets Pere IV, Àvila, Pujades, Llacuna and Doctor Trueta. However, most of the arguments against the plan supported the opposite, i.e., neighbours' organisations, artists and an important group of professionals and experts wanted much smaller percentages of land to be reclassified as residential. Everybody had their different reasons, but they agreed on preserving the productive character of the neighbourhood, maintaining existing buildings and reclassifying very little or no land as residential areas.

One of the most representative arguments came from the Cercle Digital, a group of people working in areas such as urbanism, IT and the urban environment, led by Miquel Barceló. The group defended a compact and varied city model and a Poblenou that would lead the charge in the new technology revolution in the same way it had done with industry in the 19th century. The group's position was based not so much on quantitative town-planning issues (i.e., the number of houses to build or the maximum height allowed, etc.) as on demanding that the project revolved around the abovementioned concerns.

Miquel Barceló, then the director of the Catalan Institute of Technology (ICT) was convinced of the group's approach. In fact, he had defended the same argument when he appeared before City Council after the ICT decided to centralise its diverse offices into the former Can Canela factory. At that time, he not only had to convince the local authorities that the uses to be made of the area (i.e., training, R&D and corporate services) fell within the 22nd classification of the GMP, but that it was the ideal environment for this type of activity. Later, in March 1998, a publicity brochure appeared in the Barcelona press on the new urban developments projected in Poblenou (Diagonal Mar, Diagonal Poblenou and Front Marítim, all of which were anticipated under the 1976 GMP) and he published an article in the daily newspaper *El País* lamenting the progressive disappearance of the "Catalan Manchester", in which he took an ironic view of the trends outlined by the operations under way and proposed new development alternatives

While the arguments were being made, the ICT received a commission to study the development of the new production sector linked to ITCs in urban environments and the conditioning factors for applying the model to areas within the Barcelona metropolitan region. The customer was the Industrial Agreement of the Barcelona Metropolitan Region, which at the time was run by the ex-minister Joan Majó, and insisted on part of the study being a comparison with cities from around the world that had opted for similar developments.

In order to successfully tackle the commission received, a multi-disciplinary workgroup was formed, with Miquel Barceló in charge. I was the group coordinator. The main collaborators were Isidre Costa, who worked on the town-planning regulations with the support of Ramon García-Bragado (then the director of the Localret consortium) and Carme Bellvé; Francesc Mañà for ITCs and Salvador Rueda for urban environment issues. The work also included the participation of many other experts, either on an ad-hoc basis through interviews, or through work meetings. These included the economist Joan Trullén and the businessmen Javier Creus and Eduald Domènech.

The study was quickly named *Digital City* and was a fascinating exercise because of the qualifications and diversity of the people involved. In short, it defended a model in which the production sector was part of the urban fabric in such a way that interactions between the different urban and production agents would be rich and give rise to new initiatives. The result would be a more sustainable city due to transport savings because of a fall in forced mobility and also because of the wealth and variety of the exchange of information. I would here like to mention the principles that Richard Rogers set out with regard to a sustainable city, i.e., compactness and polycentricity, diversity of activities, connectivity, environmental awareness, quality design and economic strength. The last condition Rogers mentioned could have (or better said, should have) knowledge as the production basis and innovation as the driving force behind the changes. ITCs made this change possible and furthermore gave rise (at the time of the study and still today) to one of the industrial sectors with the most growth potential.

The proposal for the planning modification that contained the study began with the regulatory situation of Poblenou (GMP), but also covered other municipalities within the metropolitan region, i.e., Mataró, Sabadell and Terrassa.

Digital City was a step forward in defining new approaches towards urban planning and to a certain extent represented the conceptual and practical basis that City Council needed in order to prepare an innovative modification of the GMP. I will not set out the study's arguments here, which were later published in a book format, but I would like to point out three things that reflect its methodological wealth and important conceptual contribution.

Firstly, I should mention the workgroup and the process of preparing the report. I have already said that the team was made up of technical experts and other professionals from very diverse disciplines. The approach was therefore not sectorial but general. The aim was to cover all the fields that intervene in a complex discipline such as town planning, also understood as strategic planning, and the definition of the model of the city. It was no coincidence, therefore, that when the study was being prepared in February 1999, City Council should decide to organise an informative meeting attended by local residents and representatives of neighbourhood institutions and associations, as well as developers and businesspeople, within the heart of the ICT.

A second aspect I would like to mention is that the process of elaboration constituted a real learning cycle for all the people involved. Different points of view

emerged at the work meetings that enriched the environment. Furthermore, we should recall that this took place within the previously mentioned technology euphoria and nobody seemed to be scared of taking bold approaches, even though the final text had to be detailed and precise. In fact, it was at one of the meetings that Ramon García-Bragado proposed the term 22@ to designate the areas that had been listed under the 22nd classification of the GMP. The idea was favourably received and the final document included this name.

The third aspect I would like to mention refers to case studies. In order to know the new sectors created around the technology revolution and their most appropriate niches, we had to find an important number of experiences from across the world that had opted for a similar town-planning model.

The most obvious case from the 1970s through to the early 1990s was Silicon Valley, the area successfully created in California around Stanford and Berkeley Universities in the 1950s and the real training ground for ICTs. Technology parks were springing up across the world that tried to imitate the American experience with unequal results. However, this was not the model we needed, as it responded to a practice of colonising land that had already been done. In other words, nobody was questioning the validity of Silicon Valley as a science park and innovative environment, but precisely because of many of the advances created there, ICTs made it possible to produce in other, more urban environments that could be better adapted to the European and Mediterranean reality. The so-called *digital economy* had other conditioning factors and other ecosystems besides micro-electronic innovation or basic research.

From an initial list we chose 21 experiences, eight of them carried out in Europe, five in the United States, seven in Asia and one in the Middle East. The files describing the cases were included in the definitive modification of the industrial areas of Poblenou.

In the final selection there were cases that still followed the American model (particularly the big Asian parks); others that had begun by following it in an initial stage but had later been reinvented under more particular models, and yet others that redeveloped former industrial or military areas into spaces for technology companies. Each case that we studied had its own particular features so it was not possible to consider any as a model to transpose directly to Poblenou – nor, of course, was this the goal.

I would like to briefly mention the most significant cases:

- Silicon Alley in New York, a paradigm of business and real-estate dynamism. Located close to the financial district, this was the training ground of the so-called *new media* industry, i.e., companies devoted entirely to the Internet, not so much in terms of technology but in design and content. It would later become one of the main victims of the dot.com crisis. However, it is still an important reference for many new-economy companies.
- The cities of Bangalore and Hyderabad in India, which specialised in software. They based their strategy on a workforce that had received a very good education in disciplines such as mathematics, as well as the fact that the employees were bilingual (most of the population spoke English) and their connection with companies located in the US. They also had the strong support of the Indian Government.
- The diversity of European models, from classic ones such as Cambridge in the United Kingdom (an impressive concentration of knowledge and very good university-business relationships), through to much more local but no less powerful or interesting initiatives (such as the rehabilitation of a former barracks

in Ludwisburg, close to Stuttgart, or the Ronneby software industrial park in Sweden).

Although some of the cases studied were located in industrial developments outside city centres, most were within purely urban environments. They tended to only be located in industrial estates under very particular circumstances (in some cases, when the aim was to build a better value-added area within the industrial concentration) or because of inertia of the former model. On the other hand, the urban models, many of a spontaneous format, offered great dynamism and often constituted an important contribution to their city's economy.

One thing that all the experiences we studied had in common was quality of life – or, in some cases, the lack of it. I remember that one of the drawbacks that different businesspeople in Cambridge mentioned was the heavy traffic. Cambridge is a city with a medieval design and the lack of a plan to regulate growth meant it suffered traffic jams each morning and afternoon. This was considered to be a very serious problem by its business community and explained a significant loss of companies.

Infrastructures have a lot to do with quality of life. Leaving aside telecommunications (indispensable for trying to establish a technology sector), we looked instead at cultural infrastructures of leisure, sports, health, education, etc. We also added other, less tangible aspects, such as social capital and the cosmopolitan spirit of the population so that we could get a better idea of a good quality of life.

The conclusions to *Digital City* not only defended the productive use of former industrial land but also proposed it as the central reason around which the town-planning modification should be designed, i.e., it should be a modification that could create the conditions for developing new activities (spaces, infrastructure, quality of life, etc.) and boost the new information society.

Betting on Complexity

Paradoxically, progress throughout the 20th century in understanding complexity invested all scientific and social disciplines with an uncomfortable lack of certainty. Urban planning was no exception.

To begin with, a city is one of the most complex systems created by man. Not without irony, Francesc Solé-Parellada described cities as “highly complex agents characterised by an increasing number of non-linear interactions among numerous urban parties that generate space-time dynamics that are always irreversible, often discontinuous and always disorganised, i.e., we do not very well know what they are”.

City planning looks at a system it does not have precise knowledge of and yet attempts to predict its medium- and long-term evolution. In turn, evolution is marked by factors that are internal and external to the system under analysis. In other words, urban planning has to deal with complexity in two areas.

To theoretical or formal complexity we have to add practical complexity, i.e., the difficulty in translating designed planning into real planning. This involves confronting often-opposing interests and trying to sidestep the risk of projects grounding to a halt.

Given this situation, instead of renouncing its task, planning has tried to design interventions that give new responses to the challenges thrown up.

To begin with, the pretence of aseptic, laboratory-type planning has been abandoned. Quality solutions respond to the real needs of inhabitants, whose participation is indispensable. Multi-disciplinary work is another strategy. Urban

planning is not limited to regulatory or architectural aspects but also embraces many other technological, economic and social fields.

As such, planning aimed at maximising a single aspect (whether urban, monetary or of economic development) is overcome and you can begin to integrate into the process professionals from all sorts of fields, including, at the same time, the people directly affected.

On the other hand, simple solutions that aim to resolve a particular problem in the short term are also shunned, as such interventions usually generate more problems than they solve, either because other aspects are seriously affected or because in the long run the initial problems become worse.

In short, the planning goal must be to design an urban structure understood as a framework that favours the interactions you want to promote among the parties involved. With this apparently simple goal, and with open planning that allows evolution over time and the adaptation to the particular circumstances of any given moment, planning today confronts complexity with greater possibilities of success.

When City Council sounded receptive to approaches that demanded an increased role of the new production sector, it faced a challenge that went beyond the limits of urbanism in the strict sense. The final goal of the modification was to turn the old industrial areas of Poblenou into a complex district, a centre of innovation and knowledge and a driving force for the information society in the metropolitan region and the whole of Catalonia. The regulation faced the difficult task of designing a city structure that would make all of this possible.

Some of the added difficulties were as follows:

- 1) The variety of urban morphologies, types of ownership, existing uses (many of which were important to maintain), etc., which marked the situation at the time.
- 2) The difficult balance between finding mechanisms that could attract land developers and owners (an essential part of any urban transformation) and, on the other hand, prevent speculative spirals that could lead to the stagnation of a process which was expected to last from 15 to 20 years.
- 3) Continuity among the three physical areas, separated by a historical centre that had to be respected and conserved.

Despite these difficulties, the structure of the neighbourhood also included one of the key elements that were to be established in its goals: mix of uses had been present from the beginning, although for different reasons than the ones that now justified it.

Effectively, the mix of uses is one of the realisations of a complex city, which at the same time is synonymous with a rich city. It favours contact, interaction and exchange, which, as Salvador Rueda said, are the bases of a city.

The maintenance of diversity; coexistence between housing, traditional and new production uses; artistic activities, services, etc., and even the coexistence between different morphologies and fabrics within a number of limits, could take place in Poblenou without rupturing its current situation. This could be done as the consolidation and continuity of an already existing model that only required excesses and shortfalls to be modernised and corrected.

In the words of Oriol Nel·lo, “in the configuration of a quality city, in terms of economical, social and environmental quality, the key should not be sought in the planning of new spaces but in the renewal and metropolitan integration of the city already built”.

The theoretical model had been assumed by the Administration - now it just had to be translated into a modification of approach that was imaginative and innovative.

The Modification of the General Metropolitan Plan

Poblenou, the 22@bcn Activities District

Based on the matters outlined above, the municipal team began to prepare the modification of the General Metropolitan Plan. The work took place from October to December 1999 and the people involved were the architect and technical director of Urban Planning, Ricard Fayos, the lawyer and director of Urban Development Procedures, Enric Lambies, the architect and head of the Development Planning Department, Aurea Gallén, the architect Aurora López, the economist and then director of Coordination and Resources Rafael González Tormo (later appointed head of the company 22@ bcn, SA) and Joaquim Clusa, an economist at Barcelona Regional. The team was led by Josep Anton Acebillo, the chief architect at Barcelona City Council and Ramon García-Bragado, who had by then been appointed head of the Urban Development Department at City Council.

The total area affected was 116 ha (distributed in 115 blocks of the Eixample), which were all classified as industrial land and divided into two big areas; a third, smaller area; and two isolated blocks (see map). The scope of the activity affected 198 ha. These figures show that the operation was one of the most important town-planning transformations anticipated for municipal land in Europe in recent times.

The modification of the GMP was based on a desire for a unitary action across the sector, something which originally translated into the creation of a new activities classification called 22@, which covered all of the areas previously listed under the 22nd classification (i.e., industrial areas) in the neighbourhood of Poblenou.

The main ideas for organising the new classification were as follows:

- a) Complexity and mix of uses

The translation of the urban complexity in the regulatory sphere was the mix of land uses within the action area. Production and commercial uses coexisted with residential and facility uses, following a longstanding tradition (for different reasons) in the neighbourhood. Nearly 5,000 homes were legalised and new developments were placed under a system of protection (at a proportion of 10% of the total built area of the intervention). Mixture was also a feature of the production sector: IT-intensive activities coexisted with traditional industrial companies and offices.

- b) Endowments linked to the production system (7@ amenities)

Continuing with the argument in point a) above on the mix of uses, the idea was to have two types of amenities existing side by side. As well as traditional local facilities, i.e., classified as 7b and understood as facilities linked to housing, new types of amenities called 7@ were also added, aimed at the production sector.

Collaboration between the public and private sectors has proven to be one of the most useful types of innovation in the knowledge city. In particular, university-business relations are key to the success of most of the experiences that aim for specialised economic development. The provision of 7@ amenities covered the space requirements in which these associations could be established. Investigation and the promotion of

knowledge became one of the main activities of the new amenities, with the possibility of their being at least partly of a productive nature.

Another mission of 7@ was to prevent the so-called *digital divide*. The need for developing a population literate in new technologies is latent at times of accelerated change. To that end, to the diffusion of specialist knowledge we had to add a much more basic function addressed to the general population so they could learn the basic tools to move easily within the complex information society and make the most of its potential.

In this regard, the desire for the urban approach to go beyond the simple organisation of streets and activities was clearly demonstrated. 7@ facilities were addressed directly at the economic development of the area, and indirectly affected the dynamism of the overall fabric.

In drawing up the modification, the team insisted that the existence of production uses within the new amenities should never involve a change in their public ownership.

The new amenities were not established in detriment to former ones (i.e., 7b according to the terminology of the GMP). In fact, the question of amenities was already part of a call from local residents that predated the approval of the 22@ plan and it was with the arrival of the Plan that their claims could be met.

The residents and City Council signed the Amenities Plan for Poblenou on 24 July 2001. City Council agreed to build more than 40 amenities of all types.

Rafael González Tormo emphasised two significant figures in this area:

- More than 30% of the land needed for the agreed-upon amenities would be located in 22@ areas.
- More than 10% of the land transformed by 22@ would be devoted to either 7b or 7@ amenities.

c) Permitted Building Area and Uses (@ activities)

This was without a doubt one of the most innovative aspects of the modification. It consisted of awarding varying amounts of land available for building depending on the scheduled use.

It stemmed from a permitted basis of 2m² built area /m² land, defined for these areas in the 1976 GMP. The modification increased the generally permitted building area by 0.2m² /m² land for the area as a whole. The justification for this initial increase was that the urban industries of the day (and particularly in the production sector the team wanted to promote) did not meet the characteristics of low-height buildings, usually only single-storey bays, but denser building typologies that required an increase in permitted building area.

To the general permitted-building area they added 0.5% to reach 2.7m² built area/m² land for @ activities. Any developer who wanted to increase land profitability could choose to create spaces devoted exclusively to these activities. The regulation was thus involved in the very promotion of the new activity and prioritised it.

The link between permitted building area and activity proved to be much more effective than the link between permitted building area and building type. The reason is that the developer is the person responsible for determining the typology by translating the needs of the end user. If he opts for a strict definition of the regulations of the permitted typologies in each case, the result cuts flexibility and diversity. By translating this responsibility to the private sector (i.e., user and developer) it would be possible to much more faithfully meet the needs of an emerging sector without preventing each

person from translating their needs architecturally as they considered best within a number of predetermined limits. The creation of a market that specialised in new types of production spaces would be the logical or desirable evolution of this aspect of the regulation, which Oriol Bohigas emphasised was one of the “smart moves” of the modification.

@ activities had to be defined in order to make any increase in the permitted building area operative. From memory, the modification defined @ activities as ones “related to the new ITC sector, with research, design, culture and knowledge”. In other words, they were knowledge-intensive activities that used new technologies and involved qualified work. The definition was complemented with a list of activities that responded to the @ concept, divided into ICTs, services and knowledge centres. The Advisory Committee (a figure I will touch on in more detail later) was charged with updating the list and interpreting and evaluating the suitability of town-planning proposals.

To end, two additional increments in the building coefficient were proposed. An increase of 0.3m² built area/m² land, under public ownership and aimed at housing under some type of public protection system, and a complementary coefficient of 0.2m² built area/m² land in areas directly promoted by City Council, aimed at technical services, car parks and housing. In this latter case, the permitted building area reached its maximum, i.e., 3.2m² built area/m² land.

d) Densification

The increase in the building coefficient also involved a redensification of the whole sector. The result was a fabric with concentrations and morphologies more in line with an information society than an industrial one. Furthermore, the development of abandoned plots and the incorporation of housing facilitated the creation of a continuum from the city centre and thus prevented the creation of the no-man’s lands into which some of the sector areas had been converted.

Redensification also led to the creation of a complete, rich and complex urban fabric. The coexistence of different uses was, at the end of the day, also a form of redensification, in this case the redensification of information, and represented a more sustainable model.

e) Flexibility of the transformation

The Administration was keen to create a flexible development, which could adapt to particular conditions of the territory over time, given that it involved a medium or long-term approach. Flexibility was reflected in two areas of the modification of the GMP.

The first was the morphological area. As we will see in the following section, the minimum unit of activity (taken from particular cases) was the Cerdà block. However, the regulations did not make it compulsory to continue with the morphology of a closed block with a central patio area but allowed different distributions, as long as they respected basic parameters and minimum volumetric considerations. One good example was the exercise carried out at the workshop entitled “Re-Projecting the Eixample: Poblenou” which the UPC Architecture School held from February to June 1998.

The second was the development area. The existence of public and private plans was a preliminary factor favouring regulatory flexibility. In order to begin the process of

making the overall actions consistent and to prevent undesirable developments in sensitive areas of Poblenou, the government took the initiative in particular areas of the sector to draw up Special Public Plans. The rest of the sector was developed under private plans. The former had to be determined within four to eight years, while the second could be developed according to the evolution of the real-estate market. Moreover, the government reserved the possibility of acting in new areas to guarantee that the predetermined goals were met.

The regulations were also flexible with regard to determining @ activities. Initially, the definition was broad enough to cover advanced R&D through to traditional activities that required extensive specialist staff. To this broad definition was added the review that the Advisory Committee had to make following the course of the technology revolution.

In short, the modification established a number of minimum rules after which the renewal of the neighbourhood could be adapted to the paces, manners and activities pertaining at any time.

f) Endowment of infrastructures

The report on the modification of the GMP provided two arguments for explaining the need for an advanced infrastructure plan for the whole of the area under consideration. Firstly there was the deficit (“infrastructural penury”) of the fabric of Poblenou at the time, despite the operations that had solved some of the basic questions in the run-up to the Olympic Games. The starting point in proposing the activity was in this case pretty weak. Furthermore, and this was the second argument, the aim was for the area to be a leader in IT, which required an advanced telecommunications infrastructure that could be easily adapted to future technological changes.

Based on these two arguments, the Special Infrastructure Plan (SIP) specific to the sector was approved on 27 October 2000. This plan established a number of infrastructures that had to be the differential element of the district so that the standards of development defined under the current legislation were raised.

Besides providing the whole sector with advanced infrastructures, the Plan wanted to meet a somewhat innovative goal in its approach: i.e., improving the quality of public spaces. It was thus decided to suppress the servitude that the extension of the different networks represented and to internalise services within the blocks. To make this possible, the team had to look for the first time at organising the subsoil, designing a system of service passages and channels that clearly unified them and differentiated between public and private spaces (which included the distribution networks, loading and unloading points, etc. within the blocks).

Other design considerations marked the situation, both with regard to the sector and the market. Firstly, it was important to anticipate an extension of the system of deregulating most public services. Secondly, as it involved a developed space where production activity was carried out, it was necessary to anticipate compatibility between the old network and the new one.

The Infrastructure Plan, which I will look at in more detail later on, involved the following systems:

- Telecommunications
- The water cycle
- Cleaning and selective waste collection
- Energy
- Mobility and public spaces

The cost of the Infrastructure Plan was calculated at 162 million euros, to be funded 60% by landowners, 10% by City Council and 30% by the city's public-service operators.

With the development of the modification, following the six basic areas set out above, the aim was to have comprehensive actions open in time but with mechanisms that would prevent any significant blockages or shadowy zones that could put a brake on extending the project.

The modification of the General Metropolitan Plan was initially approved on 22 December 1999 and provisionally agreed upon on 28 April 2000. The definitive approval by the Barcelona Municipal Subcommittee on Urban Planning was passed on 27 July 2000. Altogether, the process was carried out in record time.

To bring together the instruments and management jurisdictions, Barcelona City Council created the company 22@ bcn, SA, with capital coming completely from the local council. Its mission included the management of planning, infrastructure and heritage, collaboration with the town-planning authority and developers. The economist Rafael González Tormo, a member of the team that had prepared the urban planning document, was put in charge of the company.

The result of the activity had to be the appearance within a period of around 15 years of approximately four million m² of buildings, including 3.2 million m² of buildings for economic activity, the supply of some 4,000 new homes under a system of protection, 75,000m² of new green areas and 145,000m² of amenities.

Public and Private Plans

The determination of the minimum unit of action prefigured standardisation and entity. This was the first reason for the government to delimit units. The idea was not to determine time limitations but ensure that regardless of the pace of transformation, internal consistency would not be lost but rather parts added that could be fit within the overall project.

The basic criterion adopted to mark the transformation actions was that the scope had to be at least one Cerdà block. This safeguarded against losing the legacy of a grid model that had proved its usefulness over time in organising the urban land and would continue to define the scale to which Barcelonans were accustomed.

A second and no less important reason was that this minimum sphere of activity was considered to be the right way to implement infrastructures. The Infrastructure Plan was based on a progressive extension from one block to another, because this was the only way to transfer services internally that were now found largely in public spaces.

As far as regulations went, developments were done using Special Interior Reform Plans (urban improvement plans under the new Catalan Land Act). Although this was the general criterion, the possibility of acting in smaller areas (with a block defined by passages, plots, buildings and building fronts) would be contemplated when the transformation affected particular uses, buildings of interest or consolidated housing fronts. The idea of this measure was, as I mentioned above, to seek flexibility in town-planning operations and their improved adaptation to the local conditions that existed.

Public and private plans were distinguished within this logic of activity. The intention of the public plans undertaken by City Council was to stimulate transformation: contributing the first m² for the new activities, beginning to create the essential critical mass needed to establish own dynamics, defining urban-structure

elements and enabling the implementation of activities that would need to have a strategic role.

Another of the goals of the public plans was to generate a lot of land to use for the first facilities, open spaces and housing.

In other words, as well as providing a guideline to simple town-planning changes, the Special Public Plans pursued the construction of a city by creating elements that would provide structure and centrality and establish complicity with the economic boost.

Six actions were predetermined as being public or of a public initiative, located on either side of Diagonal:

- The Llacuna Axis
- Central Park (Diagonal-Pere IV)
- The Audiovisual Campus
- Llull-Pujades (East)
- Llull-Pujades (West)
- Perú-Pere IV

Each not only responded to its own internal logic but also contributed to outlining a preliminary idea of what Poblenou could be like after the transformation. In particular, the Plan for the Llacuna Axis sought the creation of a treble sea-mountain system (together with Rambla del Poblenou and Sant Joan de Malta-Marià Aguiló) through the reclassification of its limits (an initially controversial reorganisation as we will see later on); the Audiovisual Campus sought an activity around the former Ca l'Aranyó factory suitable for activities relating to culture and the new audiovisual sphere (in this case, nobody tried to hide the intention of dressing the activity with a certain monumentality, in line with the environment of Glòries and the spectacular tower of Jean Nouvel, which carried out the function of being the doorway to the district); Central Park opened up a large green area around which new economic activity could be determined; Llull-Pujades (West) tried to resolve continuity with the historic centre of Poblenou, while Llull-Pujades (East) did the same with the new sector of Diagonal Mar, and Perú-Pere IV sought to create an area of centrality on the northernmost side of the sector and thus offset the operations on the other side of carrer Pere IV.

The sum of these six public plans represented 47% of the land under transformation and two possible time periods were established (either four or eight years) for their execution. The Administration reserved the possibility of additional interventions to correct any defects that might be observed in the development.

The private plans were basically governed by the same guidelines. In order to go ahead they required the approval of around 60% of the owners (80% in the case of blocks delimited by passages). Given that, as we have seen, the town-planning reality of the neighbourhood was quite complicated, the possibility of drawing up special plans for consolidated industrial buildings and plots of more than 2,000 m² was anticipated.

The Special Infrastructure Plan

The treatment of infrastructures overall responded to two complementary perspectives. The first referred to deployment in the territory and followed the criterion I mentioned before about moving infrastructures to within the blocks. The picture on page 43 shows a plan of the extension model: a core network, passages that run from the core to the technical rooms in the blocks, internal rings that stem from these and run to the technical spaces, vertical accesses and rings on the roofs with consequent technical

spaces. The second perspective referred to achieving a consistent design with regard to each system. Even though two systems were particularly important (telecommunications and energy), in the confluence of the two perspectives the idea was to have an effective integration between the different networks and between the networks and the spaces in which they would operate.

Below we can see each system in more detail:

Energy

Increased energy demand was covered with the construction of a new sub-plant for the whole sector. A new monitored and remote-controlled distribution network would also be extended to enable the quick identification of power failures and to isolate them from the rest of the network to prevent it from being affected. The new network would be based on pipes rather than laid in the ground so that civil works would not be required for accessing them.

Another interesting aspect of this network was centralised central heating. Its treatment at the level of a group of blocks resulted in increased system efficiency. The idea was to create closed water circuits to service a whole district or activity sector, adding or not adding heat to the exchanges located inside the buildings.

Finally, the design of the space would allow system scalability, with the adoption of emerging technologies, such as shared generation might be in the future.

Telecommunications

The extension of a fibre-optics cable network was the main goal with regard to telecommunications. This involved basic infrastructure for ensuring a good telecommunications service and its postponement would represent an important brake on development.

Although other technological solutions were available, e.g., ADSL, which could initially make up for this shortfall, bringing broadband to the whole sector had to be a medium-term challenge if future development was to be secured.

The territorial extension of the cable network followed various models in Europe and the US. The main difference between them lies in the degree of participation of public organisations (governments) and private ones (telecommunication operators). I would like to distinguish between three types of participation by the two agents.

In the first case, there is not much of a relationship between them. Private operators calculate the cable needed and build the ditch in which to house it accordingly.

In the second case, the government anticipates the possible occupation on the part of the operators and builds the ditches that the cables that belong to each operator that decides to extend the network are laid in. The operator saves having to do the civil works and in exchange pays an amount for the use of the public pipelines.

The third case involves a type of participation that awards a bigger role to the public authorities: the government not only digs the ditches but also takes responsibility for laying the fibre optics cable and upholds ownership. In this case, the operators purchase capability from the public manager, who designs and manages the network.

This third case is the one that has been working successfully in a number of the cities that are leading the IT charge, including Stockholm, and represents the highest level of efficiency in the use of fibre optics. The reason is that demand is centralised in a single agent, thus maximising the occupation of the ditches and cables. Moreover, it

allows the appearance of local operators who can associate their natural service (connectivity, buying broadband at wholesale rates and offering it to end customers) with the provision of other services that could be more closely linked to content.

When I was writing this text, there was talk of following this third system of relationship between the agents, or at least a model that included compatibility between public and private ownership, as long as the planning corresponded to the government.

In any case, the most important thing involved in choosing between the three models has to be that the infrastructure does not limit the provision of services (i.e., maximum extension to the other systems).

A further aspect with the telecommunications system was to take advantage of the technical spaces on the roofs to erect mobile telephone antennae. As the spaces had to be defined in the Special Plan for Internal Reforms of each activity, compliance with the corresponding regulations were already controlled at this level.

Mobility

The aim here was to have a comprehensive treatment of mobility throughout the whole district. To that end, public and private transport, car parks and the bicycle path network were included within this section. The Plan defined a network of primary roads for preferential vehicle traffic and a secondary network, with variable morphologies and which gave preference to light transport (bicycles and pedestrians).

Carrer Pere IV is designated to become a civic centre of Poblenou. Its treatment would break the monotony of the Cerdà blocks and be a differential feature to promote. It was thus decided to reduce its traffic levels.

Laws recently approved in Barcelona to set aside bicycle parking spots outside new buildings was based on the reflection on mobility made within the 22@ bcn district.

A study was also made into the possibility of public parking places (including on the street) having a single manager to facilitate the adoption of mobility policies in the most efficient manner.

Water

In this case, there were few modifications to the conventional system. The existing network of both drinking and wastewater would be complemented and the sewerage network reinforced. Water-table levels would be used to water streets and green areas.

Waste

With regard to waste collection, the model implemented with great success in the neighbouring Vila Olímpica, based on pneumatic collection, was to be used. There would, however, be one improvement, i.e., there would be four different types of rubbish collectors, two in homes (for organic material and rubbish) and two in the activity buildings, for paper and rubbish. The infrastructure would thus be adapted to the most selective environmental criteria being established all around.

22@ within the Barcelona Metropolitan Region

Centrality and Complementarity

To give you an idea of the influence that 22@ could have on the future configuration of the Barcelona metropolitan region and even on Catalonia, I would first like to discuss the knowledge-city project that Mayor Joan Clos personally promoted at the end of the last decade.

Under the banner of a knowledge city, and in the same vein as the Universal Forum of Cultures 2004, the aim was to get citizens really involved in scientific, social and cultural discussions. The underlying idea was that the future knowledge society would work very differently to the way it does today and for Barcelona to be on the cutting edge of this change. This is no small challenge - and anyone who feels that the Universal Forum of Cultures is a fad could be tempted to think the same about the knowledge-city project.

Although the lack of definition of the two projects could lead you to think they are just fads, I believe that the idea of the knowledge city is stronger than may first appear. As the philosopher J.A. Marina said at the opening speech of the 2001 Mercè Festival, a city – like a person, a couple or an organisation – may be intelligent or not. If intelligence is the ability to face new situations successfully, Barcelona will prove to be an intelligent city if it is able to get the knowledge city up and running.

22@ has to be the first determination of the knowledge city, says Vladimir de Semir, the councillor responsible for this area at Barcelona City Council. My own interpretation is not limited to the fact that the new activities district should be filled with information-intensive user companies or even companies that devote a good part of their income to research and development. I feel that when the infrastructure is developed (not just physical infrastructure, but also social routines and formal and informal socio-economic infrastructure) 22@ could be a good starting point to enable the city to specialise in taking knowledge both from production processes and economic and social processes in order to improve them. This requires many things: specialised and systematic workers (i.e., brain workers, controlling the intelligence of the production systems and practicing a transversal reasoning essential in promoting local and productive differentiation and for anticipating and resolving problems); international connections; risk capital as needed; facilities for creating companies (an area where Barcelona Activa has an extremely important role and where it's confirmation would be the appearance of private business incubators); an entrepreneurial business mentality: a training supply free from formal rigidity (i.e., as well as strong universities, ongoing education, personalised training), etc. Many of these conditions cannot be forced, but must arise naturally. Although their appearance can be stimulated, the dynamics I refer to must be consolidated more in the informal than the formal sphere.

22@ cannot respond only to this aspect, as we have seen, but, if consolidated, it could be the launching pad for the information society in Catalonia.

Let's look at a particular example. Imagine there is a team of professionals with an innovative idea in their sector located in a city outside the metropolitan region. 22@ will have succeeded if they find it advantageous to go to the district to put forward, explain and press ahead with their idea, if shown to be really viable (profitable, possible, with a big enough market, etc.). Once they decide to start a company based on their idea, they opt to start it up in Poblenou because it is the most favourable environment for beginning the activity. In other words, Poblenou could act as an

incubator neighbourhood. After this initial period, the company could move back to its hometown and keep up the contacts it made with the people and companies it was involved with in Poblenou, thus enriching the process.

This type of process is not possible in many places of the world, even though IT allows it in theory. The reason is the need for contact and the informal relations that many of the steps I have explained require, along with the critical mass needed for them to be produced. I think there is only one area in Catalonia that could provide this environment and that this place could be Poblenou.

However, Poblenou should not be considered in isolation from the rest of the city or the metropolitan region, either. Joan Majó said that the question today is not what type of company we want for a territory but rather what part of its production chain we want. The two most interesting aspects are the extremes, i.e., research and product creation, and product personalisation for each local market.

Research and product creation are not possible without the concentration of specialist knowledge on the other side of Diagonal, with its universities, research centres and world-renowned innovative research parks. Just as important are the technical centres and specialist training facilities located on the two metropolitan fringes. We have to promote osmosis between universities and companies and universities and society, and all the centres mentioned must be involved.

With regard to product personalisation for each local market, it is important to firstly bear in mind that there are multinational companies and people prepared to develop the work, whether within the multinationals themselves or in independent companies. We have to consider both the concentration of their headquarters in Barcelona and their industrial facilities in Vallès, Baix Llobregat or Maresme.

Let's look at another aspect of the possible role of the transformation of Poblenou. Studies on the evolution of work in the Barcelona metropolitan region show the progressive displacement of the city's industrial basis from the centre to the outskirts. This displacement is part of a general trend in big European and American cities over the past few decades. The process is complemented with a progressive move towards service sectors that in the case of Barcelona fails to make up for the loss of industrial activity in terms of population: self-containment (the number of people who live and work in Barcelona) fell 11 percent (from 83% to 72%) in the decade between 1986 and 1996.

That is why, when metropolitan cities accuse Barcelona of wanting to return to centralist plans, Rafael González Tormo admits they are right: given the lack of balance in the evolution of workplaces within Barcelona and the metropolitan region, City Council does indeed desire a form of re-centralisation. The question lies in the type of activities that make sense in the centre of the city. They should either be activities that belong to the e-economy of the 21st century or those which, given particular environmental conditions, *could* come to belong to them and benefit the rest of the metropolitan region.

One example of the latter is the activities we have just looked at, i.e., the ones that are related to innovation and knowledge. But in general, what activities are most suitable to the centre of the city in the 21st century?

In the first place, there are those activities that existed in the 20th century and which knew how to adapt to the urban reality (with regard to land prices, meeting stricter environmental regulations, etc). We are thus not talking about a rupture but an evolution.

Within this first group of activities there is a very particular shortfall that Poblenou overall has contributed to alleviating. The industrial area/tertiary area

relationship in Barcelona City stands at around 2:1 (in an article in *El País* dated 29 March 2000, Oriol Bohigas provided the following figures: 11.6 million m² of industrial land to 5.2 million m² land with tertiary activities), vastly different to the average values of most cities (which tend to have an inverse relationship). A shortfall of offices could be one of the reasons why companies are moving to other Spanish cities. Poblenou could absorb at least 50% of the future demand of these types of buildings, which according to a study by Rafael González Tormo stands at the municipal level at between 240,000 and 300,000 m²/year. This involves office buildings (where new economic activities are also developed) that are very well connected (only three underground stops from Plaça de Catalunya, five minutes from the future Sagrera station) and available at very competitive prices (the above-mentioned study put the price at an intermediate level between the most expensive parts of the central city and the best areas of the fringe municipalities).

Secondly, there are all the activities whose nature or workforce requirements rely on an urban environment (e.g., those linked to corporate or public decision-making centres; those related to the finance sector; design, advertising and many others). The Internet content industry also responds to an urban environment, including webpage creation and maintenance, the treatment of information aimed at the Net, the promotion of communities, and e-commerce in its different variants, i.e., among companies, between companies and end users or among users (B2B, B2P, P2P).

Thirdly, companies whose natural habitat is a city because of their specialisation. In the 22@ area, this could include activities such as multimedia and industrial design, graphic design, publishing and printing.

Finally, it would also need the ITC sector companies. This sector represents an element of wealth in cities, not just because it involves big value-added companies and a huge growth potential, but also because of the value of the interactions they favour with other sectors.

Obviously, I have not made a detailed analysis of everything we hope that tomorrow's city may involve, but have given just a few ideas of what it could become.

We can see it thus makes sense to talk about complementarity and centrality in the relationships between 22@ and broader territorial areas.

Complementarity is important because a centre at Poblenou does not have to be a barrier to renewing the production system in other areas within and outside the Barcelona metropolitan region. Projects are springing up in various cities and provinces (not just in Viladecans, Cornellà, l'Hospitalet, Sabadell, Terrassa and Mataró, but also in Pla de l'Estany, among other places) where 22@ does not represent a threat but rather an opportunity. This is in line with Trullén's idea that the metropolitan region could be a poly-centred metropolis, i.e., a branch of sector cities where economies of location are promoted by each sector (the concentration of companies that follow cluster dynamics) and, on the other hand, economies of urbanisation in the overall metropolitan area (which affects all economic activities, not just those specific to each sector). In line with this approach, Barcelona City could contribute specialisation in tertiary sectors closely linked to secondary ones (R&D, corporate services and design).

Centrality is important because 22@ has to concentrate the activities most closely linked to big global cities, which, as Manuel Castells and Jordi Borja point out in *Local y Global*, are the hubs of economic and political networks where decisions are made. Forming part of them requires meeting some very exacting conditions with regard to the surrounding area, including communication infrastructures, e.g., the already-demanded intercontinental airport and a well-communicated region; specialised workforces; central headquarters of big companies; a strong financial sector and

elements of a quality lifestyle, such as cultural activities and social cohesion, amongst many others.

However, it is important to bear in mind that many of the cities involved in the worldwide premier league do not have a relationship with their geographic environment, but are islands only linked to the other international hubs via ITs and personal contacts. That does not have to be the case with Barcelona. The specialisation of the city should move more in the direction that Professor Castells calls *regional centres*, linked to the global logic but at the same time shored up by a relatively extensive territorial environment.

Centrality and complementarity are thus not antithetical, because of Poblenou's dedication to its own activities and its role as a driving force and articulator of different efforts. Put another way, the 22@ bcn activities district has to be able to operate as a regional flow centre and connection hub between regional and international flows.

An area with these two features must meet very exacting characteristics. As Oriol Nel.lo says, "In a world dominated by flows, the importance of place will not shrink but grow".

Poblenou must be characterised by the coexistence of activities from very diverse sectors in a complex environment, with the presence of housing and a rich social fabric, preventing what Oriol Bohigas calls "the disaster of the uni-functional ghetto" that has been so common in recent territorial expansions, to instead become the "engine of a new urban reality of strong social power".

Epilogue

First Steps in a Large Scale Project

The sequence of the 22@ project necessarily began with adapting its town planning. However, I should again mention, as I have in other sections of this paper, that the town-planning side was just the first to be tackled and not the most important or only side to the story.

Once the 22@Plan was definitively approved, the next step was to create the municipal company 22@ bcn, SA, which was assigned jurisdiction in planning and management, infrastructure, heritage management, collaboration with the town-planning authorities and developers. The design of the Special Public Plans was one of the first tasks tackled.

Large-scale public interventions usually provoke suspicion and fear among the residents of the areas involved, and Poblenou was no exception. The reasons for disagreeing were many, mixed and had a very diverse level of social support: small and big landowners who saw they wouldn't be able to make the profit they expected from their land, inhabitants directly involved who did not have a good idea of what would happen to them in the face of a rapid transformation of their most immediate environment, and residents and neighbourhood organisations concerned about some of the possible repercussions of the Plan.

Protests within the neighbourhood shot up after the presentation of the Plan for Lull-Pujades (East) and particularly the Plan for the Llacuna Axis. In relation to the latter, after an important disagreement over the preliminary provisions, City Council and residents worked on a negotiation process that both parties qualified as positive. The result was a substantial modification of the Plan, which affected maximum heights (significantly reduced, from 72 to 48 metres), the number of towers (which fell from nine to six) and provisions with regard to homes, activities and different regulatory aspects.

The final preparation of the Plan for the Llacuna Axis represented a turning point in relations between the consortium and the inhabitants of the area. Salvador Clarós, from the Poblenou Neighbours' Association, said the negotiation and subsequent agreement with City Council at least made it possible to incorporate new criteria and take the pre-existing reality more into account. In that sense, the most important result was with regard to the regulation of participation in drawing up future plans. The agreement anticipated the establishment of a commission of people affected by the different plans "composed of local representatives and City Council to guarantee the fair treatment of affected residents". At the same time, City Council promised to guarantee citizen participation in the debate prior to the approval of the future planning instruments. Finally, a monitoring committee for the Poblenou Amenities Plan was created.

The Neighbours' Association decided to closely follow the materialisation of the 22@ project and the results of the negotiation. The majority opinion of the locals was reflected in the editorial of the Association's magazine *El Poblenou*, in June 2002, which said: "The spirit of 22@, expressed in its documents, is without a doubt positive for the neighbourhood, but now that we are in the phase of developing the special plans, we should not give them a blank cheque (...): However, let's make no mistake, the neighbourhood's enemy is not 22@ but speculation".

The Plan for the Llacuna Axis was definitively approved in October 2002, once the modifications agreed upon had been introduced. However, the negotiation process

did not prevent the appearance in the neighbourhood of a number of movements showing their disagreement, e.g., the Association of People Affected By 22@ and the Coordination Committee Against 22@. The expected revitalising effects of the 22@ project, as well as social and economic effects, could go some way in the future to tempering some of the harshest criticisms.

By 31 March 2003, five of the six Special Public Plans set out under the 22@ project had been approved in different phases. All up, 22 Special Plans have been approved, of which 16 correspond to private initiatives. There is a transformation of 34% of the whole land in the sector, which will make it possible to put 930,849m² of new buildings on the market over the next few years for production activities, as well as approximately 1,800 new protected homes and 74,845m² land for open spaces and amenities.²

It is important to insist on the double nature of the Plan, i.e., town planning and economic. The town planning area has two missions: the renovation of a limited area of the city and its urban and regulatory adaptation to house new production activity. This paper was being written in the middle of a state of flux of town-planning aspects: preparation and execution of public and private plans, the Infrastructure Plan, etc. As the plans are executed, the town-planning aspect will lose ground in favour of the economic and development aspects.

The Administration thus considers that, with the definitive approval of the six Special Public Plans, the first works and the appearance of a good amount of land for new productive space, the initial stage has ended and we can now go on to another one which will gradually give way to sector development and attracting new companies.

To tackle this evolution, a significant change in the company 22@ bcn, SA was made in November 2002. Its presidency had until then been directly assumed by the mayor, Joan Clos, but after that date the company gained its own president. The first person to hold this position was Joan Majó, the former Industry Minister and advisor to the European Commission on new technologies and the knowledge society.

In this new phase, the Advisory Committee contemplated under the 22@ Plan, made up of leading personalities from the public and private sectors related to new technologies, had to take an increasingly relevant role in line with its four basic commitments:

1. Compliance with the special plans that develop @ activities, in relation with the aspects these activities involve.
2. Proposal to update the list of @ activities.
3. Interpretation, in cases of doubt or imprecision, of whether an activity responds to the @ activity concept.
4. Reports and assessments on the organs of municipal government about questions related to the development of the production processes of the new economy.

Beyond its official mission, the Committee had to be able to provide first-hand information on the sectors involved and particularly on the needs and challenges of new activities for the city overall. Consequently, as one of its members, Miquel Barceló, indicated, the new phase of the 22@ Plan had to involve a change with respect to the Committee's focus of attention, which would progressively move from town-planning aspects to others more closely related to content and the business fabric of the district. Indeed, the former had to lose importance in a natural manner as the plans and projects were executed. The Committee's time has yet to fully arrive. The organisation will

² Figures from the *Report on the Evolution of the 22@ Plan*, prepared by 22@ bcn, SA, May 2003.

show all its potential, according to Ramon García-Bragado, when the agent is the end company.

At the same time, the figures on the installation of new companies in the district over the first two years of the performance of the 22@ Plan are already significant. In companies with an area of more than 1,000 m², activity in the sphere of the Plan has grown by more than 171,518m², of which 87% corresponds to @ activities. This represents 25% of the decisions of new manufacturing locations across the city as a whole. Moreover, knowledge-intensive activities in the area of the Plan grew five times more than in the city overall in 2002, both in number of licences and area. These activities already represent more than 38% of total activities for the whole of the city and are being established as the main engine of future economic growth.

Among the companies that have set up in the district or that have projects already awarded are Retevisió i T-Systems (ITCs), GEC Capital i Ecotècnica (energy and others), the Pere IV Hotel, Liberty i AXA (insurance companies), Antonio Miró and Sedatex (textile companies), Fotoprix (image labs and offices) and BTV (broadcasters). To these companies we should add the medium-sized enterprises devoted exclusively to design and content creation (e.g., GECSA and Infonomia) and a series of micro-enterprises that are slowly beginning to form the seams of what could become a strong production fabric.

If we also add the incorporation to date of two university facilities (the Open University of Catalonia in Can Jaumeandreu and the Pompeu Fabra University in the ambitious project of the audiovisual communication space on the Ca l'Aranyó block) we can see that expectations are really promising.

However, these good results should not let us fall into the temptation of wanting to get everything done as soon as possible. These days, it seems that speed has to be one of the features of everything undertaken. Even in a project the size of 22@ there were people who want it finished as rapidly as possible. Personally, I believe that neither the pace imposed by the economic situation nor the immanent slowness in town-planning procedures will damage the future development of the district. The ingredients needed to make a tasty dish often require lengthy cooking over a low flame.

The impression one has in mid-1993 when reviewing the areas affected by the modification is contradictory. In the area located next to the sea at Diagonal, the general impression is good. It is true that there is still a lot of work to do, but the impact of the first activities has been important. The big companies have been followed by other, smaller ones, located in new or renovated buildings. The transformed areas coexist with blocks that have been completely abandoned, others where industrial or small-scale workshop activity is still evident and yet others where the big transport operators predominate, but there are also buildings with enough personality to ensure that a renewal (as has been done in quite a lot of cases) can prepare them to receive new inhabitants.

A number of reasons, such as the proximity to the central area of Poblenou and Vila Olímpica, the renewal of the production fabric, which in many cases had already been evolving and adapting to more compact morphologies, the installation of small companies or professional offices, an important housing supply and the recent opening of new restaurant establishments ensure that the area can maintain a quite complete structure, where the abandoned blocks do not have a decisive weight on the overall area.

In the area located above Diagonal, i.e., on the side of the mountain, the contrasts are much more obvious. It is clear that the work needed here will have to be more intensive. In-between relatively big manufacturing facilities working at full capacity there are abandoned areas, no-man's lands that in some cases have become a

shelter for the homeless or improvised camps for nomads. A small number of housing blocks completes the picture and ensures there is a certain sense of insecurity. It will be important to see the effect the special plans will have on boosting this area.

In the middle is the historical centre of Poblenou. The rehabilitation of old buildings and the construction of new ones is revitalising this area. It is clear that in the reorganisation process there are still many things that have to be improved: transformers that flood whenever it rains, dirty streets with shortfalls in urban planning, the conservation of the industrial heritage, the determination of the provisions for protected housing, etc. With regard to the shortfall of amenities, a solution has begun that involves preparing an agreement between City Council and the local community. Ensuring that the pace agreed upon is met will depend on the different administrations involved. The restoration of Can Saladrigas, although outside of the scope of 22@, points in this direction. If we also add a campaign for improving public spaces, it would be much easier for the inhabitants to make it their own project, or at least for them to see it in a more positive light.

When I was reviewing this paper there was talk of possibly establishing parts of the Museum of Contemporary Art of Barcelona (MACBA) in the area, although the exact location had still to be determined. The old Oliva Artés factory, conserved following demands from residents, is one of the possible candidates for the new site. It is obvious that actions of this type are very important to begin to configure an area that is not just economically dynamic but also culturally restless.

Trends and Challenges of an Open Project

We have seen that the modification of the GMP that gave rise to 22@ is open enough to allow the appearance of its own model. I would like to give an idea of what I believe the model that emerged in this neighbourhood full of history and future could end up being.

Firstly, it would be wise to protect the project from electoralist or localist questions, such as the sterile Madrid vs. Barcelona debate, which with exasperating regularity is posited in the middle of the media debate (in Catalonia more than Madrid) in a mixture of a sideshow attraction and group therapy.

What is being established in the neighbourhood of Poblenou exceeds statistical figures. It is clearly true that companies are needed: firstly, the big, important ones, then the creation of new ones, followed by the renovation of pre-existing ones, etc., not to compare each year's figures with those of Madrid, Milan or Munich and draw definitive conclusions but so that the dynamics sought can begin to be generated.

The changes that the knowledge society will involve in the medium term will have a much greater scope than we can imagine, and the city will also have to transform. The first big steps were taken with the modification. Meanwhile, new activities have done away with the separation that we have got used to in the industrial society, i.e., it is possible to work and live in the same place.

But the changes do not end here. It will be important to create the ideal conditions for communities or neighbourhoods to be active 24 hours a day and combine local attractions with global connections. The public spaces will also have to be rethought, along with active policies that prevent the appearance of what Manuel Castells calls *dual cities*, "urban spaces that are spatially polarised between high value-added groups and functions on the one hand and devalued social groups and dilapidated spaces on the other".

Subsequently, and given that the goal will not have been completely met when all the land is occupied, I think it is more important to take our time (obviously within certain limits) to achieve a solid, real development rather than force an unreal pace that it will be unable to support when things go badly.

From among the cities and countries I got to know through the *Digital City* study, I would like 22@ to have within 10 or 15 years the formal knowledge transfer (i.e., the university-business relationship) of Cambridge; the dynamism, entrepreneurial spirit and strength of informal relations of New York's Silicon Alley; Holland's bicycles and the innovative and pioneering spirit of Finland. What mixture could arise if all these characteristics were added to the associative, hard-working and progressive nature of Poblenou?

I think the innovation taking place in this part of the city should meet two conditions: it should be based on knowledge and be very much applied knowledge.

It will be very difficult to transfer big concentrations of knowledge creation and accumulation, i.e., the companies devoted to basic research, to the new district, but not those whose research is aimed at applying the progress that this favours. That is why we have to promote osmosis between universities and business and universities and society through the installation of particular departments, professorships and research centres.

Innovation must be based on knowledge because it has to be able to question nearly everything, from how to apply knowledge intensively in production processes through to how to extract knowledge from the isolated information that organisations receive and generate.

I should say that until now I have been referring to production innovation. However, to achieve the knowledge city, we also need a lot of social innovation, i.e., we need to find new ways of managing public facilities, of deciding what we do and don't want, new ways of understanding the territory, developing relationships, etc.

Social innovation could be very closely linked to the business sector: society creates new requirements that are covered by new companies, and in this framework the 7@ amenities can also have a very positive influence. That is why I think we need daring approaches for the spaces, as well as the public's involvement in the project.

The euphoria surrounding the Internet brought us many different points of view, one of which made us think that the economy of presence (i.e., the competitive edge of being physically located in a certain place) was no longer relevant to economic relations and had been overcome. Today we think the opposite: under today's circumstances (by which I basically mean technology and globalisation), the territory is not only involved but is becoming a key element to being able to develop rich and innovative economies.

Another way of explaining the goal of 22@ would be to make Poblenou the place to be if you want social and production innovation. Predicting the scope of the territory for which Barcelona is the "closest place to be" would be rash, particularly at a time when the arrival of the high-speed train to Barcelona and its subsequent link to France will substantially modify the current territorial balances.

Knowledge and sustainability have many things in common. For a community to be sustainable we have to know the relationship it maintains with the territory it occupies and the impact of its activity. This involves knowledge that considers the territory as a system where the interaction between the environment and human activity has to be capable of being maintained indefinitely.

This approach changes the current vision of the territory and requires new ways of expressing information that until now has been statistical. The new ways of managing public and private companies have to consider sustainability from this point of view, and this opens up a new field of action that we cannot ignore.

What is the role of ITCs in this discourse? ITCs are the physical basis that makes it possible. Infrastructure, hardware and software development, multimedia developments, networks and applications. The application of knowledge about ITCs could involve (in the most extreme circumstance) the disappearance of the single and uniform model of 'accept' or 'cancel' and adaptation to the social and corporate rules of each place. As W. Mitchell says in *E-topia: Urban Life, Jim - But Not As We Know It*, software could end up constituting the *genius loci* of the Romans, i.e., the characteristic spirit of a place, in the form of programming code.

This long and possibly slightly disordered exhibition of ideas arises from the basis of what 22@ could eventually become. Changing the old 'Catalan Manchester', a paradigm of the industrial society, into a launching pad for the new knowledge society is a tempting challenge that will need the vision and contributions of us all.

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<http://www.pacteind.org/>

Catalan Institute of Technology
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Telecities Organisation
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Abstract

The neighbourhood of Poble Nou was one of the most important industrial concentrations in the country, to the point that it was known as the Catalan Manchester. The history of the neighbourhood, which is in some way the industrial history of Catalonia, began with textile companies, small foundries and workshops, and continued into the second generation of textile firms joined by the food industry, workshops and warehouses, and on to the big industries of the 1960s, i.e., machinery, chemicals, paper, metal, etc. At the same time, the population began to settle in the industrial areas, forming an extensive neighbourhood centred on Rambla del Poble Nou, with a strong associative and progressive nature.

The industries of Poble Nou began to face a recession in the mid-1970s. The reasons lay in the convergence of an international financial downturn and the appearance at the local level of areas better suited to the installation of modern industries (mainly Zona Franca within the Barcelona municipal area, but also in the municipalities of the first and second metropolitan fringes). From then on, the process of abandonment was inexorable and became acute in the 1980s and 1990s. With the declaration of Barcelona as the site of the 1992 Olympic Games, the part of the neighbourhood known as Icària became the Olympic Village and later residential housing. The only testament to the area's industrial past after the excavators had torn most of it down was the chimney of one of the most emblematic factories, Can Folch.

By the end of the century it was becoming increasingly clear that action had to be taken for the rest of the industrial land (116 hectares distributed in three big blocks located around the historic centre of the neighbourhood). In this context, a planning model began to be developed that would not hurt the productive nature of the land. The creation of an emerging productive sector related to research and information and communication technologies could lead to an advanced urban environment, as shown in the case study contained in the work entitled *Digital City*, prepared by the Catalan Institute of Technology.

This led to the planning of the 22@bcn Activities District. Through a modification to the General Metropolitan Plan, the 22@bcn activities subzone was created. The name came from the 22nd designation of urban industrial land, earmarked for transformation into advanced productive land. The main organisational bases of the subzone were:

- A mixture of uses as the regulatory translation of the urban complexity. The mixture of housing and industry was allowed in particular proportions, following a model that had been used in the neighbourhood since its earliest days. In this way, some 5,000 houses became legal again after successive urban plans had ignored them for nearly half a century. New housing developments (10% of the total building work) were aimed at public housing.
- Provisions linked to the production system. The modification of the plan included a new category of amenities, entitled 7@. These were facilities linked to the productive sector and covered training requirements, university-business collaboration, etc. The new amenities did not replace traditional ones but rather added to them.
- A new link between building coefficients and type of activities. To promote the creation of land aimed specifically at what the plan called '@ activities' (activities with a high technological content or that were knowledge-intensive), a

link was established between maximum permitted building coefficient and use. The maximum building coefficient was given to land aimed at these types of activities.

- Redensification. As well as increasing the link between building coefficient and use, the sector increased general building coefficients to favour concentrations and morphologies more in line with an information society than with factory areas in an industrial one.
- Transformation flexibility. The local government was particularly careful to draw up a plan that allowed a flexible development of the project to achieve the best adaptation to particular land and time conditions, with which the plan was prepared for the medium term. Flexibility translated into the very development of the project, with the existence of public and private plans. With regard to morphology, although the plan continued with the urban grid established by Cerdà's Plan in 1859, there was freedom of distribution within each block.
- Endowment of infrastructure. The preparation of the Special Infrastructure Plan was aimed at making infrastructure one of the most advanced and differential features of the neighbourhood. As well as telecommunications infrastructure, without which it would be hard to make headway in the sectors that were the objective of the plan, the idea was to improve the quality of public spaces. The designers decided to suppress the servitude that the extension of different networks meant and to internalise services within the blocks. To make this possible, they first organised the subsoil and designed a service gallery system.

The result of the reformation was to be the appearance within 15 years of around 4 million m² of built areas, 3.2 million of which would house economic activity. There would also be around 4,000 price-controlled flats, 75,000 m² of new green areas and 145,000 m² of facilities.

The district had to represent a new centrality not just in the metropolitan region but also beyond. In 2002 there were already important companies installed in the area and many plans under way, so the trend over the past decades towards deterioration has been turned around, although there is still a lot of work to do.

About the author

Antoni Oliva. Born in Figueres, 1969. Is an agronomic engineer and from the beginning of his career has focused on questions relating to strategic planning and sustainable development. He has worked at the Catalan Institute of Technology, where he took part in designing projects related to the information society in different cities and provinces across Catalonia, and co-wrote with Miquel Barceló the study *The Digital City*, promoted by the Industrial Pact of the Barcelona Metropolitan Region. He currently runs the consultancy 22sistema and focuses on researching local sustainability.