Ildefons Cerdà

by Lluís Inglada*

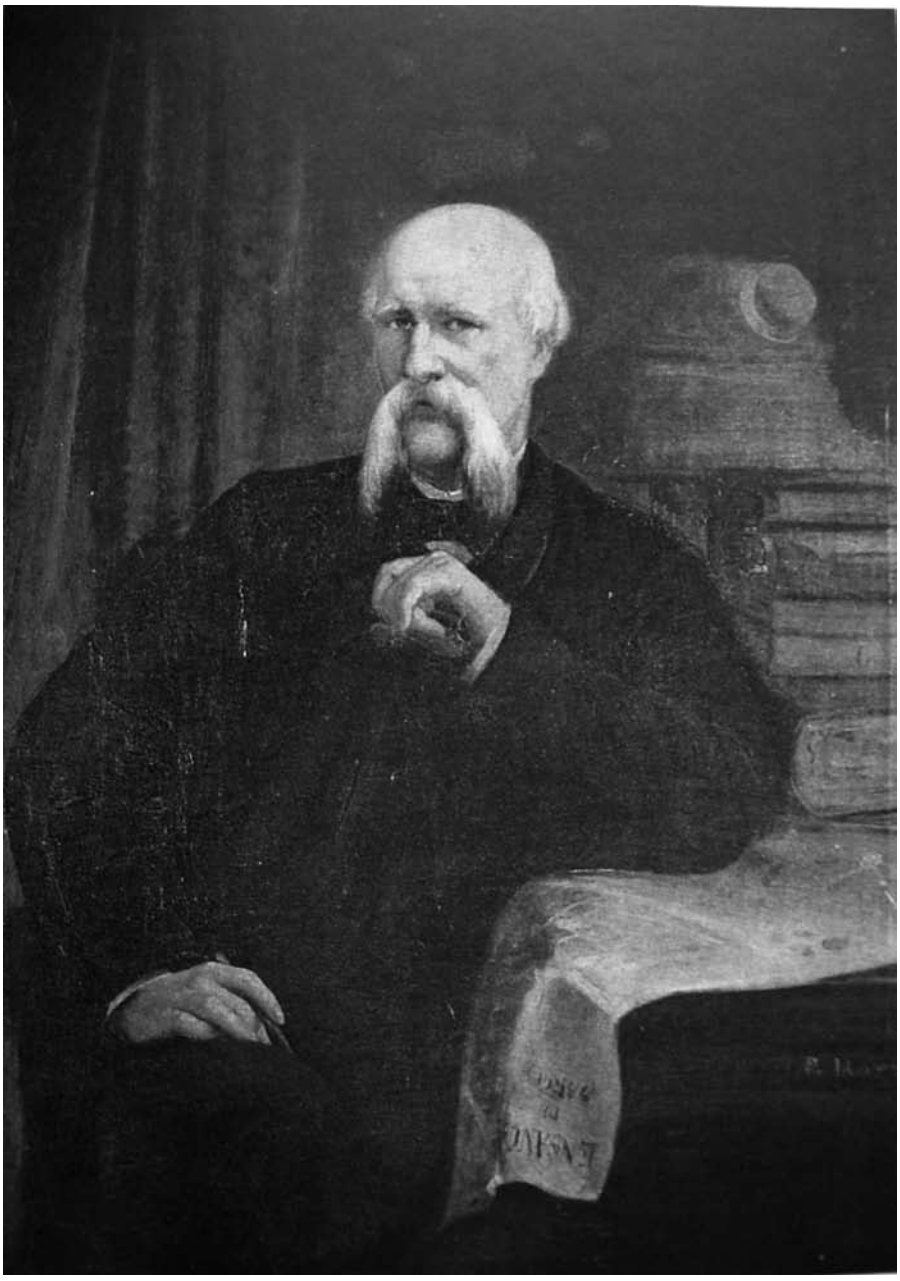
It is often said that historians and Catalan public opinion have been unfair in their recognition of Ildefons Cerdà. It is certainly possible that, in a country that has tried to promote its 'universal Catalans', we have been unable to value or inform others (both on a national and international level) about the prolific, innovative and multi-disciplinary work of this man of the twentieth century, beyond his major work: Barcelona's Eixample district. This year's celebration of 150 years since the approval of the **Pla d'Eixample** *(Eixample Plan[1]), offers the opportunity to rethink Cerdà's legacy, highlight the lesser-known facets of his work and thoughts and bring to the fore his human dimension. It is precisely Cerdà's 'natural' dimension, together with the historical context within which he lived, that inspired and explains most of his work.*

We should place Cerdà the engineer and politician, therefore, in the historical context of the early nineteenth century, between the old and new regime, at the gates of industrialisation on the eve of political liberalism and workers movements and the start of the scientific, technical revolution driven by the use of steam in industry and the railroads, besides other technological advances. Cerdà fed off of this combination of political, social, technical and economic achievements. From them arose both his knowledge and his ideological principles in terms of political thought, a spirit of innovation, technological culture, a capacity for public management, social sensitivity and so on. He was especially influenced by their humanistic common denominator and the need to move them towards a concern for welfare and the progress of civilisation.

Cerdà the man also needs to be seen in the context of a well-off rural merchant family (and therefore with a middle class mentality) that suffered the assault of the royalist and absolutist groups who proposed the opposite of everything that Cerdà's liberal and progressive thinking stands for.

Cerdà participated in and imbibed the era's liberal and republican political currents. In his youth, he even took part in direct action in the national militia. He acquired a political profile that was to last his whole life, including the holding of such distinguished positions as Barcelona's town councillor, deputy at the Spanish Courts and

1 In celebration of the 150th year of the Barcelona Eixample Plan, the government have declared 2010 'Cerdà Year' in Barcelona. This will involve congresses, exhibitions, the publication of books and academic studies and so on, in homage and as a reflection on Cerdà.



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president of the Barcelona Deputation.

In spite of holding certain political beliefs, Cerdà had an extremely practical vision of politics, as was his professional attitude, for the same reasons. Cerdà was not motivated by political preconceptions or business ties; Cerdà adhered to and participated in those political currents that guaranteed a more effective form of welfare for people and the progress of civilization, especially via the efficiency of the administration and through public works projects. This did not mean to say that his vision was narrow; on the contrary, Cerdà was a visionary and someone who took a long-term view, a man conscious of the revolutionary nature of his ideas.

Alongside this ideological trajectory, Cerdà also developed and applied his scientific, analytical and techni-

cal aptitude, fruit of his obsession with understanding and transforming things. He had a multi-disciplinary background: he studied Latin language and philosophy in Vic, maths, sailing, architecture and drawing in Barcelona and civil engineering in Madrid. Cerdà based his thinking and his work on careful analysis of historical evolution and the understanding of the causes of certain phenomenon. One example, is his *Monografía Estadística de la Clase Obrera de Barcelona de 1856* (Statistical Monograph on Barcelona's Working Class of 1856) from which he drew quantifiable conclusions as to the life expectancy, the living and working conditions and the rent paid by this emerging class, which he was to use to give his work both scientific rigour and an ethical motivation. It is in this field that Cerdà's legacy is most far-reaching, which is to say the fruitless search for scientific references was to lead him to create a new theoretical, scientific and methodological corpus for understanding and intervening in the city and the landscape. This was to crystallise into the General Theory of Urbanisation (1867) that would eventually give birth to a new discipline: town planning.

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Cerdà is, therefore, a unique individual for the fact that he combined Cartesian, mathematical criteria and the pragmatism common to his profession as engineer with sensitivity, idealism and altruism. As he himself stated, 'the goal of all my endeavours has been to produce something that, in its practical application, may be of use to humanity'.

Cerdà projected his preoccupations onto the city. He conceived the city as an instrument that has to allow for the progress of civilization and human welfare. From this starting point he studies the city from all points of view: that of health and hygiene, the political dimension, the economic dimension, the legal dimension, the social dimension, the formal dimension, the functional dimension and so on.

In the mid-nineteenth century, Cerdà found a Barcelona that, despite being an industrial and commercial engine for the Spanish state, existed behind city walls, with grave social, hygiene, economic and moral problems. The city was surrounded by a free space, protected from urban growth by military decree. As a result, it provided an opportunity for planning and

Cerdà's genius can be seen in Barcelona's *Eixample*

creating a new city. Until then, public opinion calling for the city walls to be demolished (supported by great writers such as the ecclesiastic Jaume Balmes and hygienist Pere Felip Monlau) had been ignored by both the military and civil authorities. At that time Barcelona (with 150,000 inhabitants) had a much higher population density than Madrid (+70%) and the City of London (+50%), combined with a much lower life expectancy: 36 years for the well-off and 23 years for the less fortunate. The demolition of the walls did not begin until 1854 and the state subsequently approved *Cerdà's Pla d'Eixample* in 1859, choosing it over Antoni Rovira i Trias' plan which had won the competition organised by Barcelona council. This naturally caused a certain degree of local dissatisfaction towards the project and Cerdà himself.

Cerdà's Pla d'Eixample includes many innovative elements that have been pointed out on many occasions by those who have studied the engineer's work: 1,100 hectares covered by a grid pattern, a simplified conception of the urban space as *vies* (public space) and *intervies* (private space), generously wide streets (of 20, 30 and 60 metres) a precursor of the diverse functions for public space (mobility, a meeting place, a place to stroll and so on) and the requirements of services, blocks of houses designed with two rows of multi-family buildings and a free interior space with the optimum orientation for exposure to the sun, square blocks of 113 metres in length with oblique corners angled at 45º, in order to open up spaces, enable visibility and further increase the building's exposure to the sun and air, Cerdà thus proposes a model that can

be endlessly repeated with a regular, rhythmic pattern, while allowing for alterations in the regularity, in order to respect pre-existing roads, for example.

Cerdà's genius can be seen in Barcelona's *Eixample*, an urban space that has functioned for 150 years

Cerdà had a gift for analysis and a long term vision. In his work, Cerdà is ahead of his time, not only in the modern conception of the city and society (which was revolutionized by incipient factors which were driving change, such as steam power), but also in the visionary anticipation of technological innovations. In this sense, Cerdà thinks of the city and land in terms of communication and foresees revolutionary transportation systems (even beyond the all-new railway) foretelling the arrival of 'domestic locomotors that will appear in every household', 50 years before the first appearance of the car. This is reflected in the generous dimensions he gave to the Eixample's roads (30% of its area) when compared with the old city and the majority of older neighbourhoods (17-20% of their total area). What is more, Cerdà is concerned with providing a solution to the unheard of problem of the time: the integration and connection of the city on a new scale: the globalised world. To this end, he projected and arranged in a hierarchy the axes that still today define the arteries that connect Barcelona with its immediate and further surroundings and saw the railway as the means of transport upon which European and ultimately global relationships were to be built.

Cerdà had a revolutionary conception of the city. He decided to break with tradition in a holistic understanding of the causes and evolution of urban societies. A large part of the solutions to his questions were to be found through the identification of phenomena that were subsequently formally developed by other scientists as laws of physics (theories of systems, chaos, synergy, dynamics and so on).

The physical approach to the city is revealed in an obsession with finding solutions to relationships and flows, for example, generating an urban model based on networks rather than zoning: roads, railways, sanitation, the distribution of water and gas, the telegraph and so on. Cerdà integrated and ordered the networks thanks to the provision of spaces (such as galleries of services, pavements that are at least five metres wide) that many years later, have allowed for the channelling and rationalisation of present day networks that include electricity, the telephone, television, fibre optics and so on. Once more, Cerdà enriched a more scientific and analytical discourse with a social and philanthropic view of the city, since he saw the urbanisation of networks as the best means of ensuring the equality of citizens.

He also shows a modern conception of urbanism and the organisation of land, via the equilibrium that is achieved between the Cartesian intervention of the planner and the need to ensure peoples' freedom, channelling the effect of the sum of small dynamics as a vector that is equally fundamental in the construction and evolution of the city.

While the city remains the centre of his work, Cerdà also worked on land and from a vision of land. From the start, Cerdà projected new cities and new networks that could expand across the rural landscape, while also (perhaps as a result of his rural origins) emphasising the need for rural values to be incorporated into the city (nature, silence, space, ven-

tilation, the sun and so on), 'ruralise the urban and urbanise the rural'. Towards the end of his life he even published a General Theory of Ruralisation.

In his professional work and in the holding of public office, Cerdà was also concerned with the 'non-urban' space when he tried to provide the territory with the necessary public works and when he led reforms in the territorial organisational models, particularly with reference to the structure of legal jurisdiction in the province of Barcelona.

Cerdà's genius can be seen in Barcelona's Eixample, an urban space that has functioned for 150 years and that allows us to face the challenges of urbanism and twenty-first century society more successfully than much later urban projects. We should take into account, however, that in the execution of his plan a significant part of his criteria were changed in favour of speculation and urban exploitation (an increase in the width of the buildings, building on all four sides of the squares, increasing the height of buildings by one or two floors, occupation of the interior patios by low buildings and so on). Fortunately, Cerdà's work also involved science, methodology and rational thought. The fact that advantage has not been taken of his legacy can be seen as a wasted opportunity of responding to the urban explosion in our country and hundreds of cities around the world with better living conditions. It could have been another of the small contributions our country has made to universal culture, welfare and good government.

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