

Great Cities: Barcelona's unloved planner invents science of urbanization

By Marta Bausells, The Guardian, adapted by Newsela staff on 05.20.16

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Barcelona's Eixample district, with Antoni Gaudí's Sagrada Família in the foreground. Photo: Alhzeiia/Flickr. MIDDLE: Plan of the Eixample development in Barcelona (1859), by Ildefons Cerdà. Illustration: Wikimedia Commons. BOTTOM: The Sagrada Família Cathedral in the Eixample district today. Photo: Photo: Wikimedia Commons

Editor's Note: Trapped inside its city walls, Spain's Barcelona was suffocating. Unknown engineer Ildefons Cerdà developed an innovative plan to expand the city. His plans were criticized at the time, but he ended up changing how we think about cities.

In the mid-1850s, Barcelona, Spain was on the edge of collapse. An industrial city with a busy port, its population had grown increasingly dense throughout the industrial revolution thanks to the huge development of its textile industry.

The city was operating at a faster pace than the rest of Spain, and it was ready to become a European capital. Yet, for all its economic growth, Barcelona's population of 187,000 still lived in a tiny area, confined by its medieval walls.

Barcelona's population density was 856 inhabitants per hectare (1 hectare is about the size of a baseball field). In comparison, at that time, Paris, France, had fewer than 400 inhabitants per hectare. This density led to rising mortality rates that were higher than those in Paris and London, England.

An Overflowing Population

Life expectancy in Barcelona had dropped to 36 years for the rich and just 23 years for the working classes. The walls were not just becoming a health risk, they were almost literally suffocating the people of Barcelona. The situation became so bad that Catalonia's regional government published the following statement in 1843:

“‘Down with the walls!’ has said this province’s council, and ‘Down with the walls!’ has no doubt answered your town hall, which knows the importance of making this girdle disappear that is squeezing and choking us.”

Work to demolish the walls would finally start a year later. Now the city and the Spanish government had to design and manage the redistribution of the city's overflowing population. It was a controversial and highly political decision that eventually gave the then-unknown Catalan engineer Ildefons Cerdà the opportunity to redesign Barcelona. Cerdà had proposed a radical expansion plan for a large, grid-like district outside the old walls to be called Eixample (which literally means “expansion” in Catalan). In the process of designing Eixample, Cerdà invented the study of urbanization.

By the early 19th century, the old walled city of Barcelona had become so crammed that the working classes, middle-class bourgeois society and industrial factories all co-existed in the same space. “Everyone was suffering the consequences of an Asian-level density,” says the writer and essayist Lluís Permanyer, whose book, “Eixample: 150 Years of History,” chronicles that period.

Land And Traffic Become An Issue

There was no more land left inside the city walls, so all kinds of inventions were used to build more lodgings — houses were literally being created on empty space. Arches were erected in the middle of streets to be built upon. A technique called *retreating façades* was used to extend house fronts out into the street as they rose up – until they almost touched the building opposite. (This practice was banned in 1770, because it prevented air circulation.)

Traffic, which in those days was horse-drawn carts, was also a problem, especially as the city’s narrowest street was just 1.10 meters (or 3.6 feet) wide. About 200 streets were less than 3 meters (about 10 feet) across. This, combined with so many people being out on the street whenever it was light – some even set up workshops in the streets – worsened an already severe lack of hygiene in the city.

Barcelona’s epidemics were devastating. Each time they broke out, 3 percent of the population died, according to professor Montserrat Pallarès-Barberà of the Universitat Autònoma de Barcelona. Cholera alone killed more than 13,000 people between 1834 and 1865.

Cerdà Comes Up With A Plan

These were some of the problems Cerdà was tasked to solve. His plan consisted of a grid of streets that would unite the old city with seven peripheral villages, which later became important Barcelona neighborhoods such as Gràcia and Sarrià. The united area was almost four times the size of the old city, which was only around 2 square kilometers (or 0.77 square miles). This area would come to be known as Eixample.

This unknown engineer was revolutionary in what he envisioned – and in how he got there. Cerdà decided to avoid repeating past errors by studying how the working classes lived in the old city. “He had thought he would find all these urbanism books, but there were none,” Permanyer says. He was forced to do it himself.

Cerdà’s was the first scientific study both of what a modern city was, and what it could aspire to be. In his eye, a city could be not only an efficient living space, but also a source of well-being.

He calculated the volume of atmospheric air one person needed to breathe correctly. He detailed professions the population might have, and mapped the services they might need, such as marketplaces, schools and hospitals. He concluded that, among other things, the narrower the city’s streets were, the more deaths occurred.

The Inventor Of Urbanization

In short, Cerdà invented “urbanization” – not just the field of study, but also the word itself. Cerdà codified this discipline in his General Theory of Urbanization, in 1867. “The high mortality rates of the working-class population, and poor health and education conditions pushed Cerdà to design a new type of urban planning,” Pallarès-Barberà wrote in a recent paper about the district.

Cerdà envisioned revolutionary, even utopian-sounding ideas. He planned gardens in the center of each block, rich and poor accessing the same services, and smooth-flowing traffic. Many of these materialized to some degree.

Rather than building square blocks, Cerdà devised octagonal blocks with cut-off corners. This change allowed drivers of horse-drawn carts to see more easily what was happening to the left and right as they approached each intersection. At the time, cars had not been invented yet, but Cerdà had seen railways. “He realized there would be some sort of small machines moved by steam that each driver could stop in front of their house,” Permanyer explains. Even today, this design makes driving a car infinitely easier in Eixample.

And yet, none of these ideas was well-received or appreciated in Barcelona at the time. In fact, the regional Catalan council had originally chosen its chief architect, Antoni Rovira, to design Barcelona’s extension in 1859. However, the central Spanish government in Madrid unexpectedly stepped in, created a new ministry of public works, which ruled over city councils, and chose Cerdà.

This was not the first, nor the last, time that tension arose between Spain's national government and Catalan administrations.

A Tarnished Legacy

This governmental intervention would forever tarnish Cerdà's legacy in Barcelona. He was a little-known engineer when he began his career-defining project, and Cerdà was immediately mistrusted by Barcelona's architects, who were in the middle of a considerable rivalry with engineers. As it was impossible to oppose the rulings coming from Madrid, his opponents instead tried to slander him ideologically and intellectually.

Barcelona's leading architects criticized Cerdà's plans. They called the streets' width excessive, the grid monotonous, and likened the squares to something a communist would dream of.

"He has been nibbling at and turning all the gardens ... and spaces destined to public buildings into the monotony of an American city, destined for a pretentious tribe without more aspirations than the agglomeration of houses to eat, drink and sleep," wrote one rival architect.

Barcelona's architects turned their back on Cerdà, but the middle-class bourgeoisie didn't – at least not all of it. Some members were the first to benefit (and pay for) his new district, where rich families experimented and commissioned architects such as Antoni Gaudí to design their homes, turning them into beautiful, organic structures that evoked nature.

With this explosion of modernism, an unspoken urban competitiveness emerged in Eixample. According to Permanyer, property owners and architects alike wanted to build "the biggest, tallest, most attractive house. This is why there's such a rich diversity in architecture in the district – one that matches the anarchist touch of the local bourgeoisie."

Cerdà's plan, though, was a "liberation for everyone," according to Permanyer. The engineer was a utopian socialist, and at the center of his urbanism was a deep sense of equality and a populist ideology.

An Urban Success

In Eixample, he had created a neighborhood without class divisions where, both for ideological and public health reasons, the population would be spread out equally. There would not be exclusive areas for the rich or poor.

Ildefons Cerdà is barely cited in any urbanism books not written in Spanish or Catalan to this day. He finally began attracting praise from his compatriots, and even internationally, in the 1980s and 1990s, when Catalan architects started revising history and recognizing him. This recognition became "official" when Barcelona hosted the 1992 Olympic Games.

These days, the city of Barcelona is consistently praised as an urban success story. Its fortunes are inextricably linked to Cerdà's work, which propelled it, in the words of Permanyer, "from a provincial town where it was difficult to live, to a truly modern city."

Quiz

- 1 Which sentence from the section “An Overflowing Population” BEST summarizes the poor living conditions plaguing 19th century Barcelona?
- (A) Life expectancy in Barcelona had dropped to 36 years for the rich and just 23 years for the working classes.
 - (B) The walls were not just becoming a health risk, they were almost literally suffocating the people of Barcelona.
 - (C) By the early 19th century, the old walled city of Barcelona had become so crammed that the working classes, middle-class bourgeois society and industrial factories all co-existed in the same space.
 - (D) “Everyone was suffering the consequences of an Asian-level density,” says the writer and essayist Lluís Permanyer, whose book, "Eixample: 150 Years of History," chronicles that period.
- 2 Which selection from the section “The Inventor Of Urbanization” BEST explains Cerdà’s contributions to urbanization?
- (A) In short, Cerdà invented “urbanization” – not just the field of study, but also the word itself. Cerdà codified this discipline in his General Theory of Urbanization, in 1867.
 - (B) He planned gardens in the center of each block, rich and poor accessing the same services, and smooth-flowing traffic.
 - (C) “He realized there would be some sort of small machines moved by steam that each driver could stop in front of their house,” Permanyer explains.
 - (D) However, the central Spanish government in Madrid unexpectedly stepped in, created a new ministry of public works, which ruled over city councils, and chose Cerdà.
- 3 Which sentence from the section “A Tarnished Legacy” BEST shows how the government damaged Cerdà’s legacy?
- (A) As it was impossible to oppose the rulings coming from Madrid, his opponents instead tried to slander him ideologically and intellectually.
 - (B) They called the streets’ width excessive, the grid monotonous, and likened the squares to something a communist would dream of.
 - (C) Barcelona’s architects turned their back on Cerdà, but the middle-class bourgeoisie didn’t – at least not all of it.
 - (D) The engineer was a utopian socialist, and at the center of his urbanism was a deep sense of equality and a populist ideology.

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Which of the following would make the BEST summary of the article?

- (A) Cerdà's plan saved Barcelona and is now praised as an example of an urban success story.
- (B) Cerdà's plan to save Barcelona factored in the life expectancy, health risks, and level of education of the working class.
- (C) Cerdà's unpopular plan is now praised for revolutionizing city planning and solving Barcelona's overpopulation and land issues.
- (D) Cerdà's plan was unpopular with architects and engineers of his time period but succeeded due to government support.

Answer Key

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