

BÁRBARA POLO MARTÍN

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Antonio Revenga Carbonell, mapmaker of Spanish extension projects during the mid-20th century

I. THE POLICIES OF EXTENSION AREAS

From the midst of 19th century, a range of measures to control urban growth were promulgated. As result, in 1864, the Act of Population extension was approved. This ruled was followed by the Extension Plan of Barcelona made by Ildefons Cerdà in 1859 and the failed act project of reform, sanitation and extension proposed by José Posada Herrera. All these acts were inspired in the great urban operations of Paris, made by Haussmann between 1851 and 1869, and Vienna, from 1857, with the *Ringstrasse* (Martín Ramos, 1993, p. 7).

During the last quarter of the century, other two acts appeared: 1876 and 1892, being the second one more specific for the extensions of Madrid and Barcelona. (Martín Ramos, 1993, p. 11). Other cities followed these examples, but their projects are, in few cases, without being studied. The situation changed in 1924 when José Calvo Sotelo, Head of General Administration of the Government of Primo the Rivera, published the Municipal Statute and Rules of Works, Goods and Services.

This publication had different purposes: instrument of inner reform of cities, management of extension from the historical centre and the administration of soil uses between the extension and the traditional city (Dávila Linares, 1991, p. 102). These three perspectives configured the first completed plan about configuration of a city in Spain (Bassols Coma 1973 and 1996, pp. 53-90). Moreover, this act was the personification of urban theories made in the rest of Europe, characterised by rationalism, like the Athens Letter of Le Corbusier in 1933

proposed (Aymonino, 1978; Hilpert, 1983; Segre, 1985; Le Corbusier, ed. 1996), and which was the basis of understanding of modern cities.

II. THE CITIES OF LITTLE AND MEDIUM SIZE

The extension act had its reflect in different projects in a range of cities that did not have a plan, such as Jaén, Oviedo, Valladolid, La Coruña, Vitoria, Zaragoza, Badajoz, Murcia, Granada o Burgos, but whose plans did not happen until the decade of 1940 (*Revista de Arquitectura*, 1927, 1930, 1933, 1935). However, other cities did it. Murcia and Pamplona between 1890 and 1920, Vitoria in 1921, 1927 and 1932; Oviedo in 1925 and 1930, Huesca and Pontevedra in 1926, Gerona, Valencia in 1927, San Sebastián in 1928, 1929 and 1930, Gijón in 1929, Vigo from 1930, Madrid in 1934; Valladolid, Salamanca and Granada in 1935 and La Coruña in 1940. The variety of dates was due to different causes. For example, in the case of Burgos, a public competition was published in 1928, but a real plan was not effective until 1940 (Andrés López, 1999, pp. 416-450, and Andrés López, 2019).

Between the reasons, can be pointed out: demographic conditions, a remarkable historical past and an artistic and urban historical heritage. The exception in some cities led to the critic of the quantitative model imposed by urban rationalism. Some cities were Ávila, Burgos, Córdoba (Villanova, 2011; Martín López, 1990 and García Verdugo, 1986), Cuenca, León (López Trigal, 1999; Reguera Rodríguez, 1987), Salamanca (Senabre

López, 2003), Segovia (Álvarez González and Sardón de Taboada, 2015, and Álvarez González, 2016), Toledo or Zamora (Terán Troyano, 1978). Nevertheless, this did not mean that any effort was made along the decades.

III. ANTONIO REVENGA CARBONELL AS MAPMAKER OF EXTENSION MAPS

The most part of extension plans that were not made after the publication of the statute in 1924, were finally completed from the beginning of 1940. One of the specialist in charge of the execution of maps was Antonio Revenga Carbonell, then public worker of the Geographic and Cadastral Institute.

The life of the author of different extension projects in Spain, Antonio Revenga Carbonell¹, can be divided in two phases from the point of view of his cartographic work. The first one, as Head of Workshops of Geographical Institute where he had an important role renovating the techniques of cartographic reproduction. The second one, taking part of topographic works, and later, in charge of extension projects. The results of this period were the publication of some works as *Láminas de dibujo topográfico* (1931) or *Manual de Cartografía* (1945).

Apart from being known for his studies in geography, Antonio Revenga Carbonell made different extension projects, which included maps. This part of his life is one of the most unknown of his professional activity. He elaborated many works whilst he was working as Geographic Engineer. Between them, can be quoted, by chronological order, Plasencia, Burgos, Hellín, León, Tarragona, Jaén, Pontevedra, Villagarcía de Arosa and Villanueva de Arosa, Hervás.

Though, the few paperwork conserved about these urban procedures prevent us to know the real reasons to order these projects. Uniquely we can know that, in the cases in which any file or information about that time is available, the attribution of these works to Revenga Carbonell was related to a public tender to make an extension project of cities that did not have one; or the direct request of town halls. These projects had different works, such as: the made up of a triangulation of the city did not have one; the made up of a topographic map of the city and its surroundings; extension maps and a conservation system of all cartographic files resulted based on a copy of sheets. This system would contribute in the conserva-

tion of original maps and the proper changes in the copies.

IV. THE CASE OF BURGOS AS EXAMPLE OF THE WORKS OF EXTENSION PROJECTS

The lack of documentation in some cases, because of disappearance, due to a bad conservation or because the kept documentation in archives is not catalogued, has led to recreated the procedure followed by Revenga Carbonell through different paperwork, such as the case of Burgos, whose archive is which one that conserves the most amount of information.

The Burgos town hall, such as other pointed cities, required the services of the specialist working in the Geographic and Cadastral Institute, specifically of Antonio Revenga Carbonell, due to the problems related to a transformation project of the city and the projection of an extension area. The main reasons to hire this engineer were, firstly, the economic factor, because it was cheaper than private proposals; and a technical reason, because precise alignments would be done, the loss of time would be avoid and a perfect work would be presented.

On June 1940, the town hall agreed to hire him and his group², according to the conditions of the contract. These conditions were related to extension, triangulation, making polygons, levelling, detail references, planimetry, documentation and workers; and which were specified in the previous project of the map of Burgos and its surroundings presented by the engineer to the town hall. The project was approved, fixing the credit necessary for its execution. By all this, the agreement was firm by both parts³. Moreover, Revenga Carbonell was worried about conserving the works.

This conservation plan was followed by other cities where he made their projects. In the proposal, sent in October of 1947, exposed that this plan was necessary in order to reflect the physical reality of the city, which changed along the time and which plan would be useless and non-valuable, losing the effort and money invested. Also, he thought about the study of the evolution of the city, as long as original maps were not modified.

Related to the working group, in all cases, the town hall was mandatory that the town hall proportionated the

¹ Antonio Revenga Carbonell. Dirección General del Instituto Geográfico y Estadístico. File 2.470.

² *Boletín de Estadística e Información del Excmo. Ayuntamiento de Burgos*, nº 292, June 1946, Municipal Archive of Burgos.

³ *Boletín de Estadística e Información del Excmo. Ayuntamiento de Burgos*, nº 295, September 1946, Municipal Archive of Burgos.

workers for the work field or to pay the salary of people hired for this purpose, if the town hall did not offer workers. The council also must pay the paper and first draws of sheets, or the engineer would make these copies by his own resources. In third place, the paper sheets facilitated to the conservation service, which would constitute each edition of the annual map, would be in charge of the town hall. In last place, the price by hectare made and represented in the sheets was determined by each town hall. In the case of Burgos 45 pesetas during the first two years.

V. THE RESULTS OF CARTOGRAPHIC WORKS MADE BY ANTONIO REVENGA CARBONELL

Between 1946 and 1956, different maps were made, at a 1:500 scale and with numerous sheets. The smallest have around 60 sheets, while the biggest, such as León or Burgos have more than a hundred. Most of these sheets are duplicated, due to the conservation plan proposed by the engineer in 1947. Thanks to it, a study about the changes of cities can be made. Moreover, other kinds of studies are possible due to the precision and size of the maps made by Revenga Carbonell.

If these plans are compared with others from the Geographic Institute, a pattern can be established. The planim-

etry was made on sheets of a specific measure: 75×100 cm. All sheets contain a reference of number and letter, so the map can be formed easily; a title in capital letters; the scale, and the signature of the engineer. The draw was made with Chinese ink, using the black for the blocks, parcels and lettering; the red for levelling lines; the green for vegetation areas and the blue for the hydrography. The global image is very accurate and exact.

The maps of Revenga Carbonell reflect exactly that one the Royal Academy of Fine Arts of Saint Ferdinand asked for an extension map: urban parcels, public and private. It included the names, the limits, the typology of spaces and the public infrastructures. On the other hand, the levelling was very accurate, one meter, so the town hall could make any transformation without any doubt.

The last subject was the conservation and actualization plan of the maps, organised by Revenga Carbonell. His original plan, something only made until that moment in Madrid, was based on a continuous copy of sheets. The advantage was that system allowed to save money.

In conclusion, this study allows us to approach the figure of Antonio Revenga Carbonell, map-maker, and know an episode unknown of Spanish urban history. His works in the cartographic area, and specifically in extension projects, allow us to fill an empty chapter of Spain.