The Project of Tiburzio Spannocchi for the Fortification of Zaragoza

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Abstract. In 1592, King Philip II of Spain commissioned Tiburzio Spannocchi, an Italian engineer, to analyse both the defensive system of the central Pyrenees and the fortification of the city of Zaragoza. Spannocchi developed the commission for five years, and the result of his work is the *San Pedro* Castle in Jaca and the design of a low-lying fortification with bastion-shaped elements using the preexistence of the Aljafería Palace in Zaragoza.

The political situation and the revolts that followed the practical abolition of the Aragonese code of laws in 1592 changed the aim of the Zaragoza project. It turned into an element to control of the city itself rather than defend it against a possible French attack, generating a hybrid image between a modern and medieval fortress. We will study this mixed appearance using the drawings that the engineer himself sent to the king as a report of his work.

Through the analysis of these drawings, we will display the varied ways in which Spannocchi created them according to the direct practical objective of each one, and the consequent choice of techniques and means used.

Keywords: Tiburzio Spannocchi · Map · Design · Defensive system

1 Introduction

Throughout the 15th century, France and the Crown of Aragon fought each other for the control of the south of the Italian peninsula while playing major roles in all the conflicts of the north between the Republics of Genoa, Florence, Venice and the Duchy of Milan. As of the middle of the 16th century, this situation of direct confrontation between France and an already united Spain moved to the border between the two countries, along the Pyrenees. Philip II, as was customary at the time (Quatrefages 1983), decided to send a number of military engineers and architects to different areas along the mountain range in order to study the locations and main weaknesses of the defence line that required new defensive elements or the reinforcement of the existing ones.

At the time, either Italian and Spanish engineers worked regularly in Spain or Italy, whose southern half was under Spanish rule, standing out the works of Pedro Luis Escrivá, Giacomo Palearo or Tiburzio Spannocchi, which favored the diffusion in Spain of the new defensive systems that put gunpowder massively into use.

Giacomo Palearo, commonly known as *el Fratín*, was a military engineer born in Morcote, a Lombard town that was part of the Swiss Confederacy, who served the King of Spain, Philip II, for most of his professional life in both Italy and Spain. In

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Lombardy, he took part in the repairs of the Sforza Castle in Milan, moving later to Corsica where he improved the general defensive system of the island. There, he retrofit the citadels of Bonifacio, Calvi and Bastia, and created a new model of coastal tower with a circular base usually known as *Martello*, due to the name of the construction site of one of them, the Capo delle Mortelle.

This works served him to become one of the most prestigious engineers of the 16th century, and the commission in 1571 to design the project for the new citadel of Pamplona (Idoate 1954). Besides this fortress, the most important at the time along with that of Jaca, *el Fratín* designed new castles in nearby Fuenterrabía and cities as far away as Valletta in Malta, Gibraltar in southern Spain and La Goulette in Tunisia.

Pedro Luis Escrivá's life is not as well known as that of *"el Fratín"*. He was born in Valencia around 1480, within the powerful Escrivá family, though it has not been clearly determined if he was the son of Juan Escrivá, *Mestre racional*[1] of Valencia and ambassador in Naples of King Ferdinand the Catholic between 1496 and 1499 (Báguena Cervellera n.d.). He probably took his training in Naples as an engineer and soldier, although some authors consider this unlikely (Cardone 2003), and judge more probable a longer and varied learning period. The two main works that attributed to Escrivá in Italy are *Castel Sant'Elmo* in Naples and *Forte Spagnolo* in L'Aquila. He built both fortresses following his own poliorcetic theories explained in a book (Mariátegui 1878) that, unfortunately, was not printed until 350 years later.

2 Tiburzio Spannocchi, Royal Engineer

The central part of the Pyrenees, between the Aran Valley and Navarre, was allocated to Tiburzio Spannocchi, an Italian engineer that belonged to a noble family from Sienna, where he was born in 1541. Spannocchi spent a few years in Rome working for Cardinal Delfino and in 1572, he went to work for Marco Antonio Colonna, viceroy of Sicily. For his new employer he performed a minute and detailed description of the main marinas of the island, incorporating census and topographic data illustrated by drawings of the coast line, main cities, castles, ports and defensive towers (Sobradiel 2015).

In 1578, King Philip II commissioned him to design several fortifications along the border between Spain and France, particularly in Navarre and Guipuzcoa, and a number of fortresses that were later built by Spanish and Italian engineers in America.

He maintained a closer relation with the king than the other two engineers cited, and evidence of this fact is the larger number of royal commissions he obtained and his appointment as *"Ingeniero Mayor de los Reinos de España"* (Chief Engineer of the Spanish Kingdoms).

Spannocchi carried out his mission at the Pyrenees between 1592 and 1596. Throughout those five years, the Italian engineer traversed the Central Pyrenees, performing numerous drawings and projects we know because he informed constantly the

[1] Peter IV of Aragon created this position in 1344 to control the taxes collected by the deputies, treasurers and officers of the king. In the 15th century, the post was divided accordingly with the territories with courts: Valencia, Catalonia and Aragon.

king with letters, kept at the *Archivo General de Simancas* within its cartographic material archive. In these letters, he explained in detail his work using text, drawings and layouts of the new castles and fortresses to build and the works to be carried out on the existing ones.

Spannocchi traced new projects for Castel León in Aran Valley (Fig. 1), Benasque Valley, Aínsa, Tena Valley, Aragón Valley, Jaca, Hecho and Ansó Valleys and Berdún (Cabodevilla-Artieda 2019). In order to complete the back of the first line of defence in the Pyrenees and control the city of Zaragoza, the Aragonese capital, after the abolition of the Aragonese code of laws, Spannocchi suggested two main actions that, in his opinion, were the most pressing to attend. The reinforcement of the *Aljafería* Palace, as well as the construction of a new castle following the main guidelines of the *San Pedro* Castle, that was being built at the time in Jaca under his management, or the new citadel of Pamplona, whose layout had been traced by *el Fratín* under the guidance and control of Spannocchi.

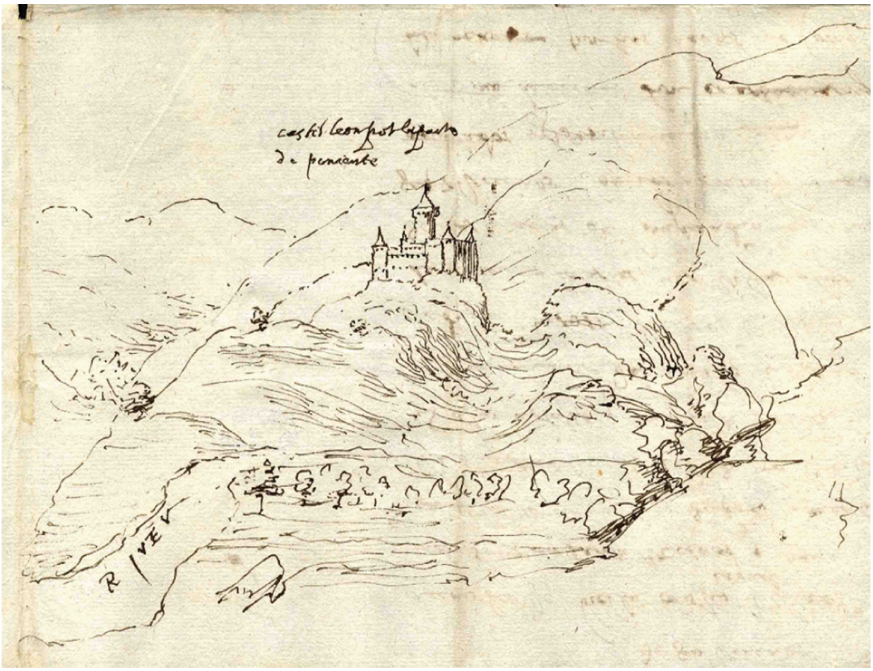

Fig. 1. Tiburzio Spannocchi. Vista del castillo de Castel Leon (View of Castel Leon). Valle de Arán (Aran Valley). 1594. Source: Archivo General de Simancas (SGU, 03352, 45, 01).

3 The Defensive System of Zaragoza in the 16th Century

Despite the terrible situation of insecurity and violence generated by the execution of Juan de Lanuza, *Justicia de Aragón*[2], the restrictions of the Aragonese code of laws carried out by Philip II and the constant political and military tension with France, none of the two projects outlined by Spannocchi for Zaragoza was finally built.

The captain Francisco Miranda designed a system of defences following the general plan devised by Spannocchi. Captain General Alonso de Vargas explained the project to the king in a letter, dated in February 1592, accompanied by a plan of the city drawn by Miranda (Fig. 2). In this drawing, the military engineer depicted the most important defensive buildings of the city, as well as the layout of its walls, the situation of the bridge across the Ebro River, a sketch of the Aljafería Palace west of the city walls and the location of the cathedral.

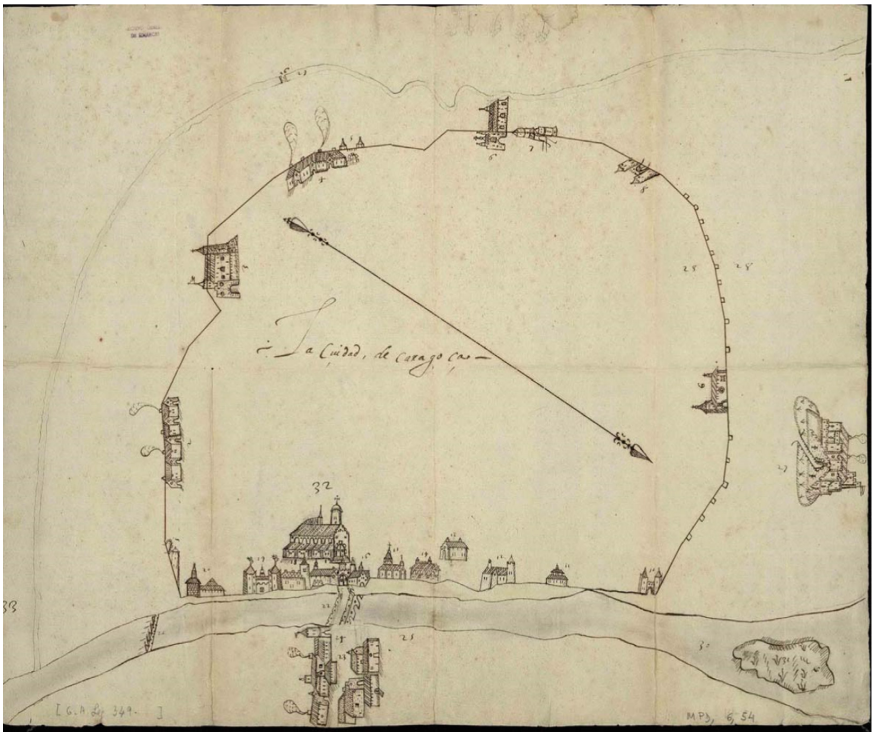

Fig. 2. Capitán Francisco de Miranda (Captain Francisco de Miranda). La ciudad de Caragoça (City of Zaragoza). Zaragoza. 1592. 42,3 × 57 cm. Source: Archivo General de Simancas (MPD, 06, 054).

[2] Medieval officer, established around 1210, whose main tasks were to preside over the courts and enforce the law.

Miranda projected to build some bastion-shaped walls around the *Torreón de la Zuda*[3], located next to the north access to the city across the Ebro River, next to the Pilar Basilica, considering even the demolition of the old tower, and the construction of two new forts on the east and west limits of the city. West, a pentagonal fortress next to the *Portillo* Gate, facilitating the arrival of reinforcements from Castile in case these were necessary. East, Miranda offered two different solutions. A new castle far from the city walls due to the existence of the course of *Huerva* River or its construction within the urban area, demolishing the *Santo Sepulcro* monastery and some dwellings around it. Luckily, this plan was turned down due to political and economic rather than military reasons.

Thus, Spannocchi got the commission to improve the defensive system of Zaragoza under two main restrains. He had to keep the existing buildings, for both economic and political reasons, and design these new fortifications in order to fulfil their real function, work as a control element of the city itself (Cámara Muñoz 1993).

4 The Project for the Aljafería Palace

The *Aljafería* Palace originated at the end of the 9th century as a Muslim defensive tower, *Torre del Trovador*[4], built using a mix of techniques that include finely crafted alabaster dimension stones, and rammed earth walls. Starting from this element, and during the next three centuries, the Muslim kings of Zaragoza developed a practically squared castle with cylindrical towers that stand out of the walls (Íñiguez 1977) using mainly alabaster, roman marble columns, wooden roofs, clay and rammed earth.

After the *Reconquista*, it became the official residence of the kings of Aragon, but gradually fell into disuse in the 15th century, and consecutively turning into headquarters of the Inquisition and jail, only to be returned to its old self by the Catholic Kings.

This was state of the building when Spannocchi was ordered to modernise and reinforce it considering the restrains previously detailed.

Spannocchi performed several drawings in which he analysed the setup of the defensive elements of the palace, as well as their state of conservation. Four of these drawings are kept at the *Archivo General de Simancas*, describing each of the main facings, north, south, east and west, which provide precious information about the real situation of the complex at the end of the 16th century. He not only drew the complex but also accompanied the drawings with texts and annotations explaining what he considered its most important elements.

These drawings also show how Spannocchi planned to improve the defensive capabilities of the palace. He designed a series of high-rise walls preceded by a moat, most probably a dry one, reinforced with square towers at the corners and placing two main accesses on the north, towards the river, and east walls (Fig. 3), facing the city.

[3] Defensive tower located at the north-west side of the city walls next to the Ebro River.

[4] Identified as the tower in which takes place Verdi's *Il Trovatore*, based upon a play by the Spanish romantic dramatist Antonio García Gutiérrez.

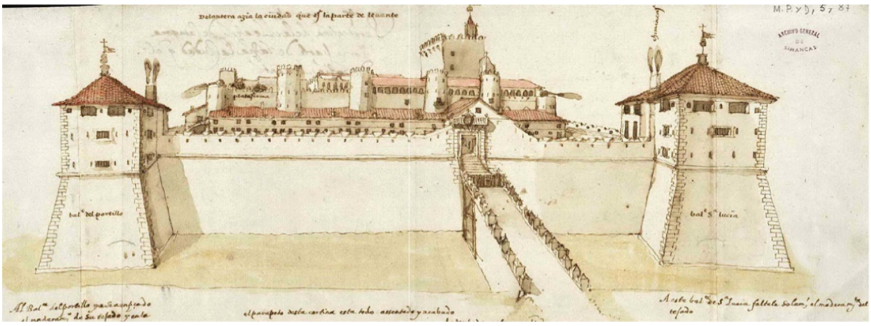

Fig. 3. Tiburzio Spannocchi. Dibujo de la Aljafería de Zaragoza en la parte de Levante (Drawing of the Aljafería Palace in Zaragoza, from the east). Zaragoza. 1593. 19,6 × 48,6 cm. Source: Archivo General de Simancas (MPD, 05, 087).

The design of the elevations (Fig. 3 and 4) is a strange mix between the existing canonical medieval castle and the new poliorcetic theories due to the moat he designed and the great height of the new exterior walls due to the easy target that they would have become for the enemy artillery. However, the floor-plan layout, that includes some bastion-shaped elements reinforcing every corner of the fortress, the series of gun ports on each wall, the existence of the dry moat and the glacis that precedes it, is completely modern. Modern poliorcetica had created what is often called as fortresses *"de traza italiana"*[5], a model with which Spannocchi himself was working in Jaca or Cádiz.

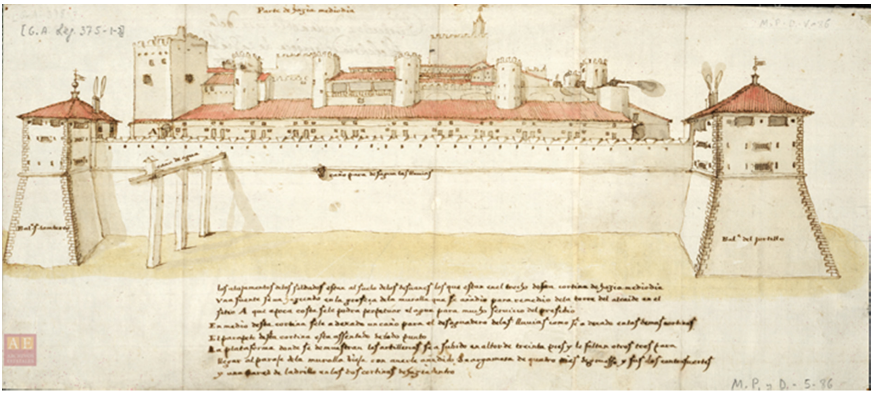

Fig. 4. Tiburzio Spannocchi. Dibujo de la Aljafería de Zaragoza en la parte de Mediodía (Drawing of the Aljafería Palace in Zaragoza, from the south). Zaragoza. 1593. 23 × 52 cm. Source: Archivo General de Simancas (MPD, 05, 086).

[5] This term refers to a type of fortress developed mainly in Italy during the second half of the 15th and the beginning of the next centuries, by architects and engineers such as Francesco di Giorgio Martini, and disseminated throughout Europe in the 16th century with examples is such distant places as Pamplona (Spain), Bari (Italy) or Bourtage (Netherlands).

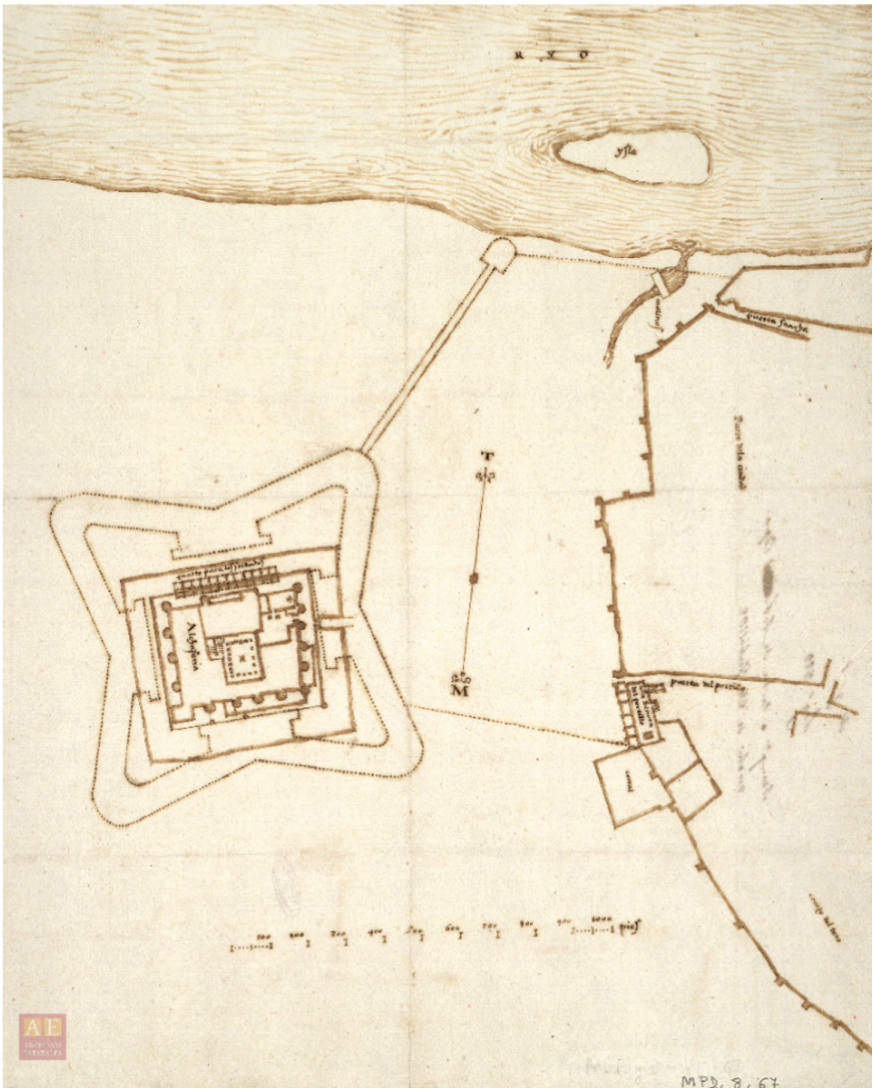

Fig. 5. Tiburzio Spannocchi. Planta de un fuerte de la ciudad de Zaragoza (Plan of a castle in the city of Zaragoza). Zaragoza. 1592. 48,7 × 38,5 cm. Source: Archivo General de Simancas (MPD, 08, 067).

Spannocchi's drawings for the retrofitting of the *Aljafería* Palace were traced with ink and sepia washed colour on a variable range of paper sizes. He performed in them an analysis of the surroundings and the size and shape of the building, the possibilities for an attack and the best defensive positions, using numerous annotations explaining the most important matters and a graphic scale related to the foot as basic unit.

In any case, these drawings were not destined to be used as a guide for the construction of the castle, since they were sent to Philip II as part of the reports Spannocchi was due regularly.

5 The Project for a "New Fort"

As an alternative to the retrofitting of the *Aljafería* Palace, Spannocchi proposed the construction of two new fully developed forts based on contemporary poliorcetic theories. Given the refusal of the king to finance the construction of any of the two proposed new castles, this option was not fully developed. It was not even set on a fixed and defined location. This option was clearly influenced by the previous one of Captain Miranda, although it abandoned the idea of the demolition of the *Aljafería* Palace and the *Santo Sepulcro* monastery as well as their adjacent neighborhoods (Figs. 5 and 6).

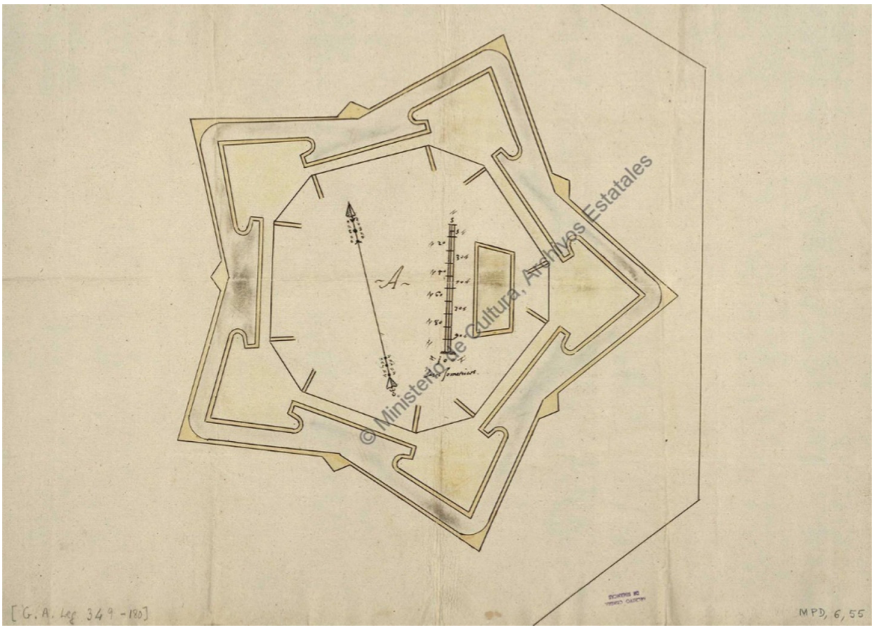

Fig. 6. Tiburzio Spannocchi. Planta de un fuerte de la ciudad de Zaragoza (Floor-plan for a fort in the city of Zaragoza). Zaragoza. 1592. 42,3 × 57 cm. Source: Archivo General de Simancas (MPD, 06, 055).

The layout is similar to that proposed by the same author for the *San Pedro* Castle (Fig. 7, 8) in Jaca that was under construction at that moment, or the one developed by *"el Fratín"* in Pamplona (Echarri Iribarren 2014) around the same years. A pentagonal

disposition of the elements with an arrowhead shaped bastion on each corner, a bailey holding the barracks and the arsenal, and a low exterior wall preceding the main one.

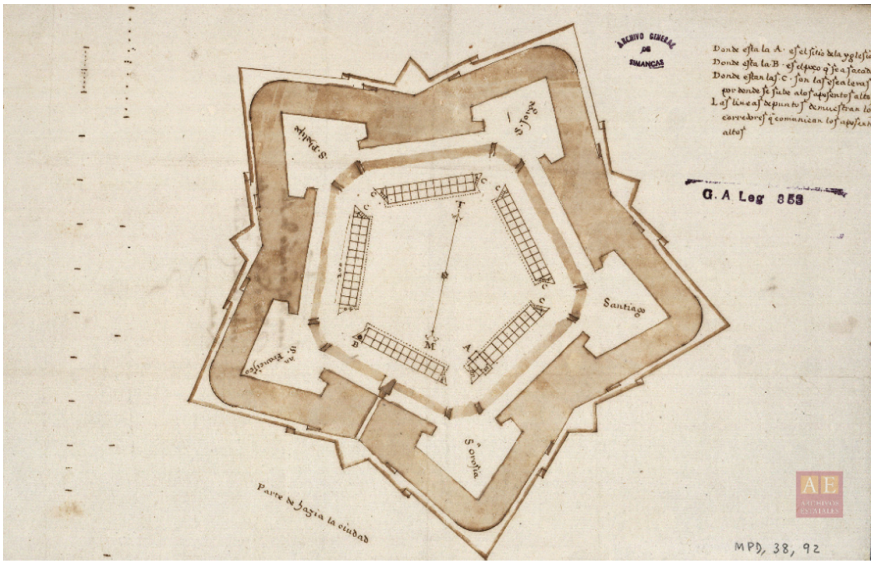

Fig. 7. Tiburzio Spannocchi. *"Traça del Castillo de San Pedro q se tiene empeçado en la Ciudad de Xaca"* (Layout of the *San Pedro* Castle whose construction has begun in the city of Jaca). Jaca. 1592. 24 × 36 cm. Source: Archivo General de Simancas (MPD, 38, 092).

Fig. 8. Northeast bastion of the *San Pedro* Castle in Jaca. 2019. Photo by the author.

6 Conclusion

Unfortunately, the buildings that Spannocchi drew or built during these five years of work in Aragon have barely reached our days, except for the magnificent case of the *San Pedro* Castle in Jaca. Most of the projects he developed to secure the border with France along the Pyrenees were not fully developed, and those he got to build were subsequently deeply transformed or demolished during the 19th century. Therefore, in order to really know the work of this engineer we must resort to his handwritten letters and drawings.

His drawings, preserved in the *Archivo General de Simancas*, are thorough and accurate in the definition of every aspect of the new fortifications, with explanatory annotations, graphic scales and description of the closest environment, using both floor plans and perspectives to fully define the buildings.

His project for the retrofitting of the *Aljafería* Palace are the best way we have to understand the processes this building endured since it's the beginning of its construction in the 9th century throughout the Middle Age, as well as an invaluable reference to apprehend the poliorcetic theories that Spannocchi applied in his work.

The analysis of these drawings allows us to approach Tiburzio Spannocchi's process of design. This way we get to know the elements that focused his interest in the study of the location and the already existing elements, as well as the use of the different codes and representation systems in order to facilitate the overall understanding of the project, both from a functional and constructive point of view.

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