The substratum permanent structures of Roman Valencia

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Abstract. *The territory and urban form of numerous cities in the region of Valencia were strongly conditioned by the imprint of Roman planning. Research on Roman planning in the Italian peninsula has allowed recognition of a number of types of plans, leading to the development of a general method of 'reading' similar structures derived from Roman planning. Application of this method to the territory of the region of Valencia is proposed. The two straight sections of* Via Heraclea-Augusta*, and the related agrarian tissues, provide a basis for reconstructing the original pattern, the structures of which influence all the subsequent expansions of the historical centre of Valencia.*

Keywords: Roman Valencia, substratum permanent structures, city planning, historical transformations

Territory is a huge spatial palimpsest that contains the structures of past societies reused progressively over time (Cataldi, 1977). Its reading can be achieved by examining the layers of the different stratified systems for signs that, like chapters of a book, together give shape to the plot. The interpretative key of each phase depends on a degree of reuse of the inherited structures, particularly those considered 'essential' – settlements, tissues, paths and borders (Cataldi, 2009, p. 141). That each new territorial system is the expression of a different planning perspective complicates interpretation of forms on the ground.

The hypotheses of *Forma quadrata* theory

The substratum structures of Roman planning probably owe their long-term recognition to the fact that they were linked to property rights concerning the inheritance of land and buildings. The *forma quadrata* theory is the result of multiple readings of territories planned by the Romans (Cataldi, 2007, 2016, 2017; Cataldi *et al*., 2000). It assumes that land surveyors designed the plans on measured maps called '*formae*', having as their reference system a square grid oriented on the cardinal points (*secundum caelum*), based on modular distances of 12 miles, subdivided into 25 submultiples called *saltus*. The colonial plans were designed on the grid of the *forma quadrata*, establishing the best direction for the rainwater runoff of the new square territorial units oriented 'according to nature' (*ager secundum naturam*). To plot the two main orthogonal axes (the *cardo* and *decumanus*), four corners of the square grid were identified on the map and on the ground (Cataldi, 2007, 2016).

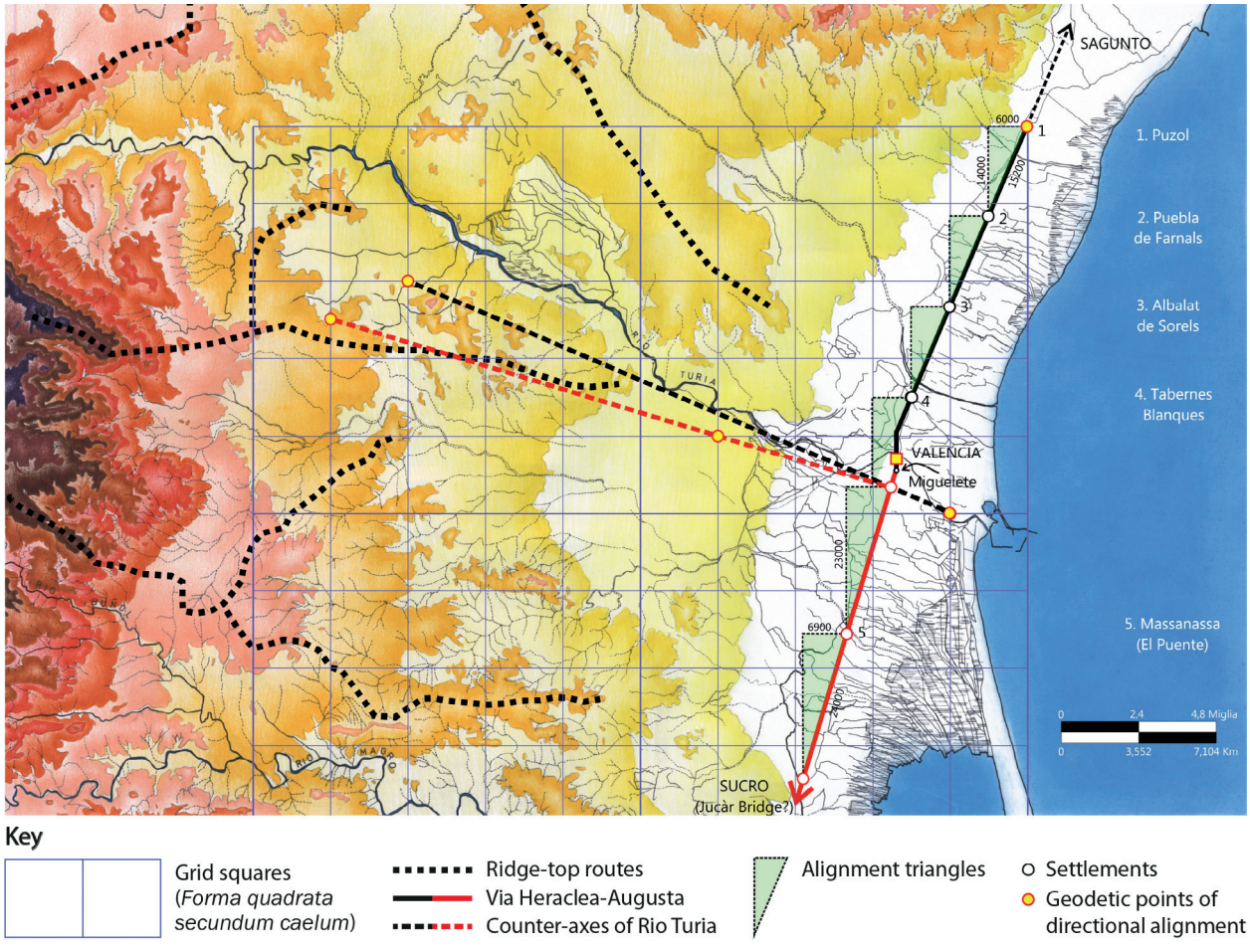

Figure 1. Hypothetical Roman planning of *Via Heraclea-Augusta* in the territory of Valencia.

The regional plan of Roman Valencia

The layout of *Via Heraclea-Augusta*, north of the plain of Valencia, is well-known and it is not difficult to find the signs of Roman divisions. It is clear that the road's straight layout and the valley-floor route of the River Turia cross orthogonally in proximity to what would become the city of Valencia. However, what is less clear – and strengthens the findings reported in this paper – is the study of this in the light of the *forma quadrata* theory. Everything makes sense when we note that the settlements along the way are equidistant (Cataldi, 2017, pp. 144–5). According to this theory, the square system oriented on the cardinal points is the primary geographical system on which the Roman surveyors set the maps and designed their colonial plans.

The territory of Valencia is characterized by a coastal plain crossed by the River Turia, which divides it into northern and southern parts. The settlement of Puçol, 12 miles from Valencia on the *Via Heraclea-Augusta*, seems to have been the north-eastern vertex of the primary geographical system. From here can be started the technical operations of tracing the long straight road. The coastline in the Roman period was a few kilometres inland from its present position (Furió *et al.*, 1999, p. 13).

The *forma quadrata* makes it possible, through simple numerical relationships to the grid, to establish the direction of the major road axes. The northern straight of *Via Heraclea-Augusta* has a ratio of 3:7 with the grid and, inversely, the valley-floor route of the Turia has a ratio of 7:3. It is not by chance that

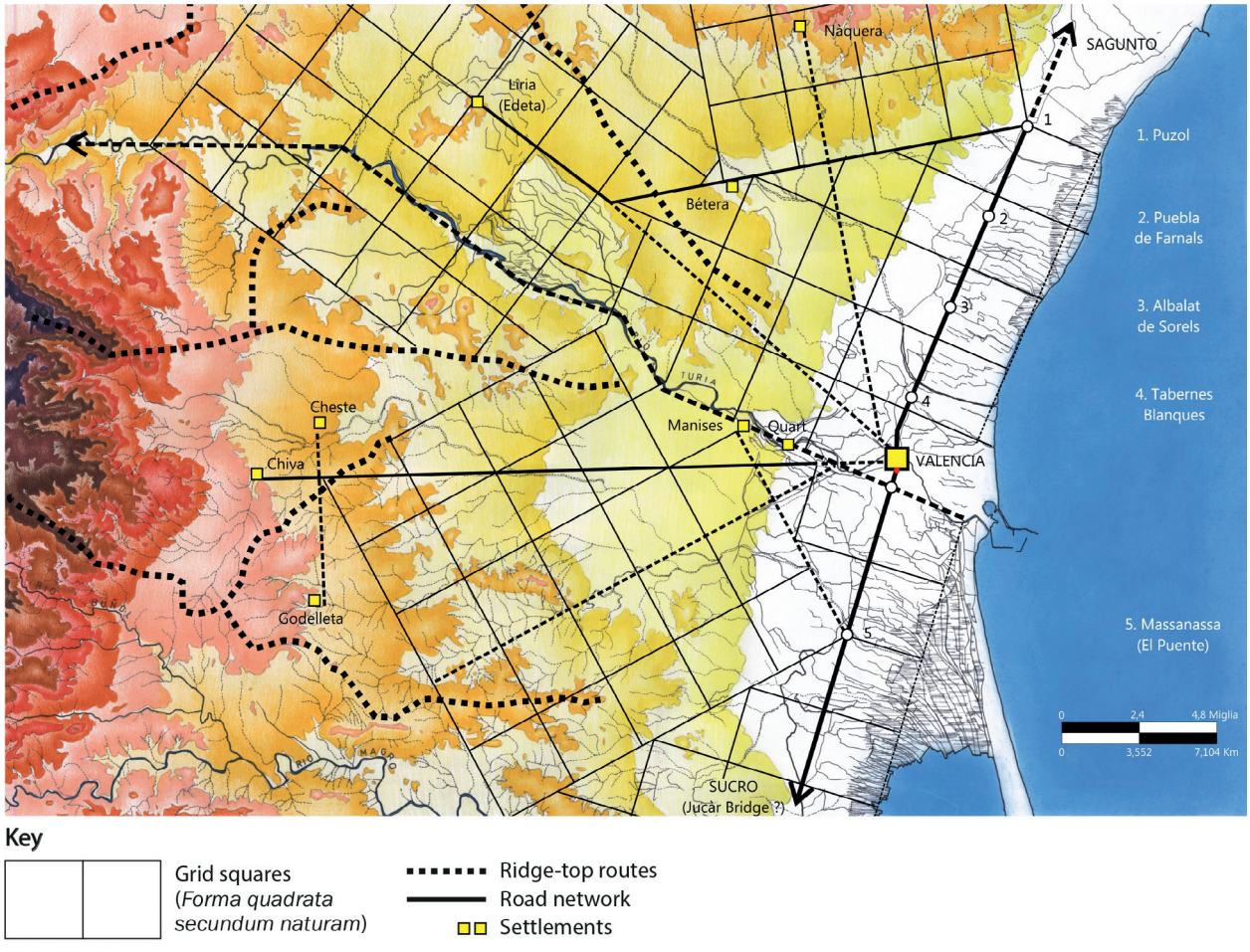

Figure 2. Hypothetical Roman planning of the territory of Valencia.

the settlements between Puçol and Valencia (Puebla de Farnals, Albalat dels Sorells and Tavernes Blanques) are at the same distance from each other: it may well be the topographical result of consecutive triangulations in order to keep the road straight (Cataldi, 2017, p. 146). If the northern straight of the *Via* had kept the same direction in the southern plain of Valencia, it would have ended up encountering the hills. Thus, it was necessary to use a different ratio (3:10) in order to orient the alignment with that of the foothills and keep it in the plain, avoiding Albufera. Nor is it by chance that the Miguelete tower is today again a visual point of reference. The intermediate settlement of Massanassa is close to El Puente, a place-name indicating its strategic function of territorial control. Analogous to the tracing of the northern line, this bridge may have been a vertex of the topographic triangulation of the southern line (Figure 1).

Similar to elsewhere in Italy, particularly to Florence (Cataldi, 2017), the two straights of the *Via Heraclea-Augusta* may have given rise to large square territorial units (colonial *agri,* oriented 'according to nature') with sides of 12 Roman miles, divisible into 25 *saltus* (5 × 5) in the hilly and mountainous areas and further subdivided into 25 *centuriae* (5 × 5) in the plains. In fact in the plains it is possible to find numerous coincidences with the current agricultural divisions and administrative boundaries. It may well be that over the centuries the plan may have changed their initial setting, also following the new diagonal routes connecting the main surrounding settlements (Liria, Náquera and Chiva) to the new growing city (Figure 2).

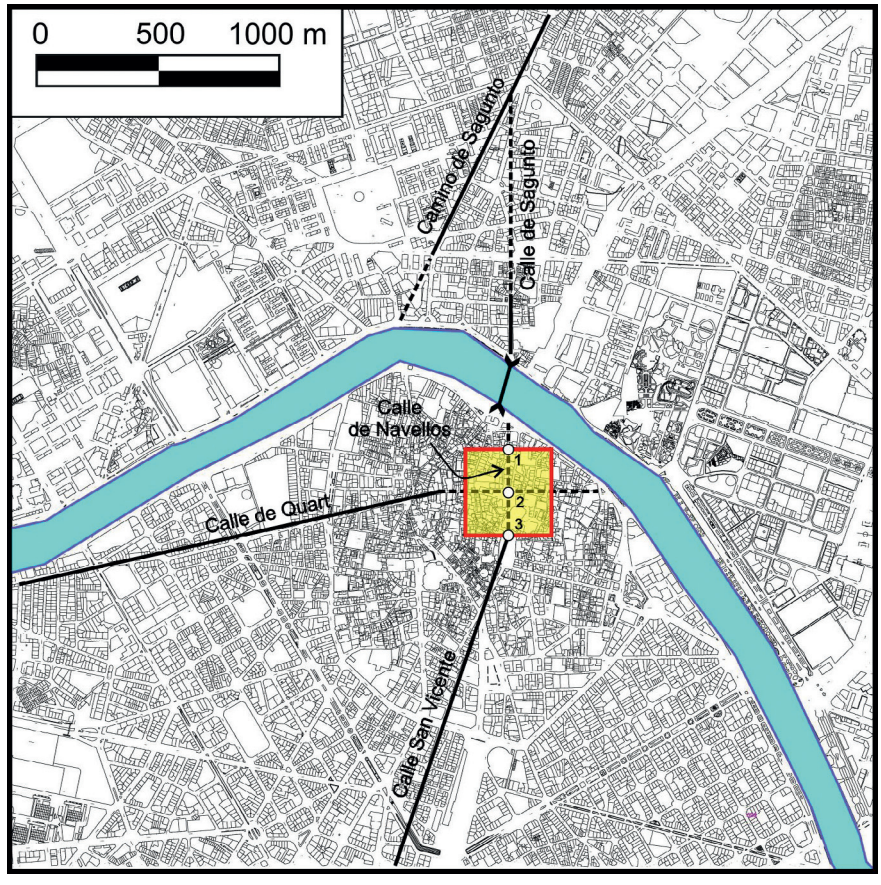

Figure 3. Hypothetical first *castrum* of Roman Valencia: 1. Porta Saguntina; 2. Plaça de la Virgen; 3. Porta Sucronensis.

Development of Roman Valencia

Historians (for example, Sanchis Guarner, 1988, p. 22) and archaeologists (Escrivà Chiver *et al*., 2010, p. 30) seem to agree that Valencia was founded in the year 138 BC on one of the many river islands created by the branches of the Turia delta. It does not seem that settlers had previously occupied that location since no remains from other cultures have been found beneath the first Roman settlement layer. This allows us to assume that the origin of Valencia was as a Roman military camp occupying the highest point on the largest delta island of the Turia, which would allow control of the point where *Via Heraclea-Augusta* met the river (Figure 2). This would have given Valencia the advantage in the Republican period of being mid-way between the two main Mediterranean coastal cities of Tarragona and Cartagena (López-Davalillo Larrea, 1999, p. 69).

Tito Livio (Sanchis Guarner, 1988, p. 22) refers to Valencia as an *oppidum*, meaning a stronghold or walled city. However, given its strategic value for the protection of the location where *Via Heraclea-Augusta* met the River Turia, we can assume that a *castrum* was initially located where later there would be the city of Valencia. This hypothesis is consistent with the practice widely adopted by the Roman army and known to have occurred in the founding of various cities, notably Florence (Cataldi, 2017; Cataldi *et al.*, 2000, p. 17).

If the Florentine model is valid, it must be accepted that the Valencian *castrum* (Figure 3) was a settlement based on a *cardo-decumanus* square structure of 1000 feet per side. Thus, allowing for a 100 feet wide extramural zone

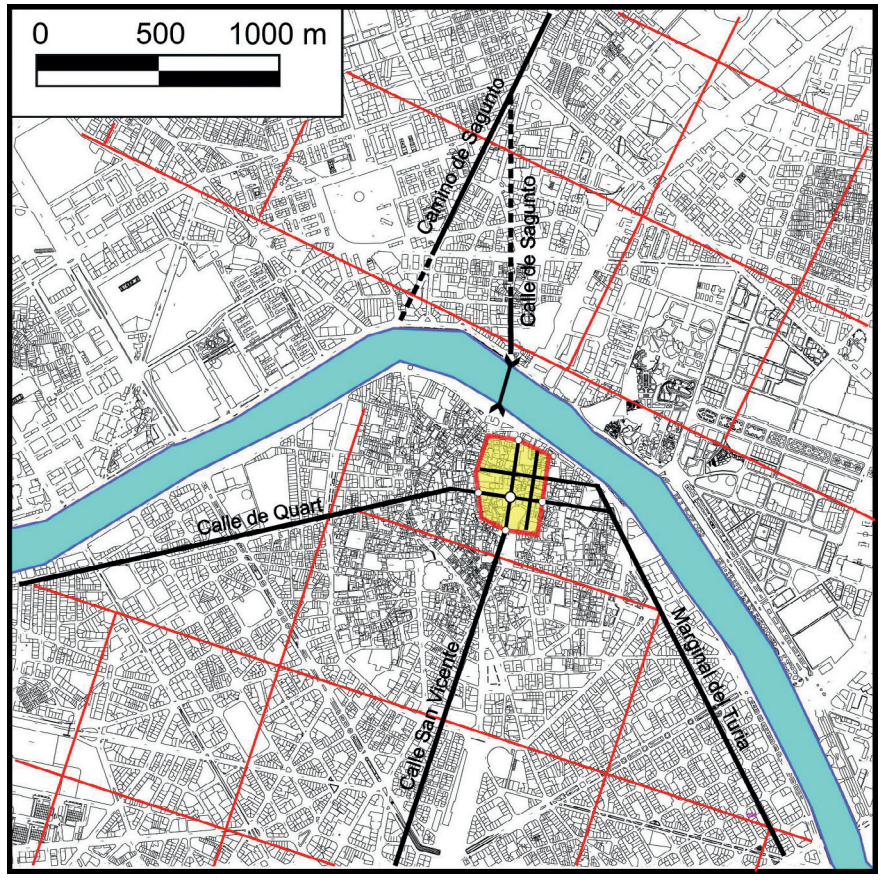

Figure 4. Hypothetical urban form of Valencia in the Republican period.

around the wall, there would be 1200 feet per side, which equates to a quarter *centuria*. It seems likely that no remains of this have been found because of the lightness of the materials used for its construction (stockades and tents), especially if the new city was later built on the site. Here, the research method based on reading the signs in the territory and in the current urban fabric is especially valuable for understanding the forms and infrastructures likely to have been built in the past.

On this basis we have to suppose that Valencia's *castrum* was placed on a big fluvial terrace elevated above surrounding lands and encircled by some of the many branches into which the river Turia was divided in this final section of its course, allowing an efficient defence and better control over the river crossing. *Cardo* and *decumanus maximus* probably were the same as those used later in the urban phase. In this way, we could accept that the first settlement was a Roman squared camp, 1200 feet long, with the main *cardo maximus* axis being the same as the current calle de Navellos and its extension on the other side of the river, calle de Sagunto. The presence of this road, the course of which still exists in the current urban fabric and has the same orientation as the *cardo* in the future city, is necessary to reconnect with the oblique line of *Via Heraclea-Augusta's* northern straight (3:7 ratio), which still maintains the place name corresponding to *Porta Saguntina*. In the south, starting from *Porta Sucronensis*, *Via Heraclea-Augusta* starts with a new orientation (3:10 ratio) which allows avoidance of the Albufera lagoon and the hills southwest of the plain of Valencia. If this hypothesis is sound, the location of the construction of the Miguelete many centuries later would not

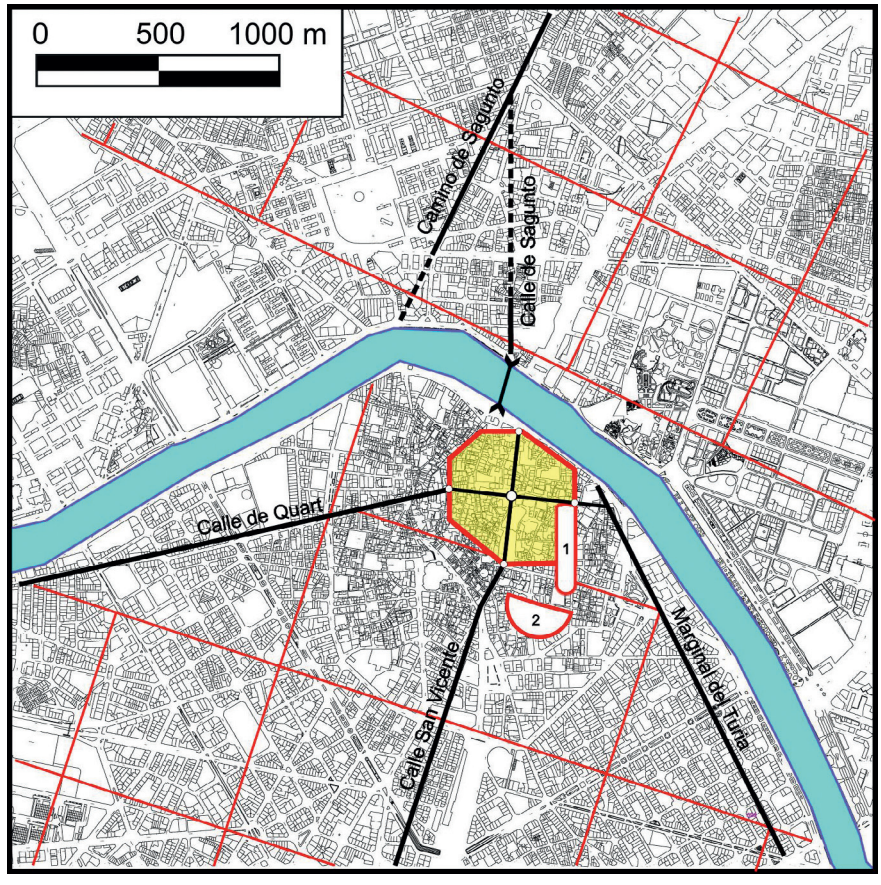

Figure 5. Hypothetical urban form of Valencia in the Imperial period: 1. Circus; 2. Theatre?

be random. In addition to its function as the cathedral bell tower, it would also be the visual point of reference of the southern straight.

Sometime later, the *oppidum* that Tito Livio wrote about was founded (Sanchis Guarner, 1988, p. 22). As already mentioned, we can assume that, starting from this time, the original plan began to be modified in relation to the polarization of the road connections of Valencia with the internal centres (Figure 2). The existence of this initial spatial organization is evident in transport infrastructures, rural ways, irrigation systems and divisions among municipalities, and it strengthens the validity of the hypothesis put forward hitherto. With the transformation from *castrum* to o*ppidum* (Figure 4), the military camp became a colony and the place of the soldiers was taken by settlers, who normally would have been discharged soldiers (Escrivà Chiver *et al*., 2010, pp. 53–4; Sanchis Guarner, 1988, p. 24). Judging by the remains found and funeral uses, it seems that these first settlers came from central and southern Italy. The colonial city maintained the road structure.

This paper suggests an interpretation of the location of a highly significant element, *cardo maximus*, which is not the same as the most accepted interpretation among Valencia's archaeologists (Escrivà Chiver *et al*., 2010, p. 46). In particular, it does not make sense that the northern connection was made through the current calle de Alboraia because this road is parallel to *Via Heraclea-Augusta* and the connection of these two roads would be impossible. However, if the *cardo maximus* lay on the current calle de Navellos – its logical extension being calle de Sagunto, which follows the same direction – the connection with *Via Heraclea-Augusta* would be direct

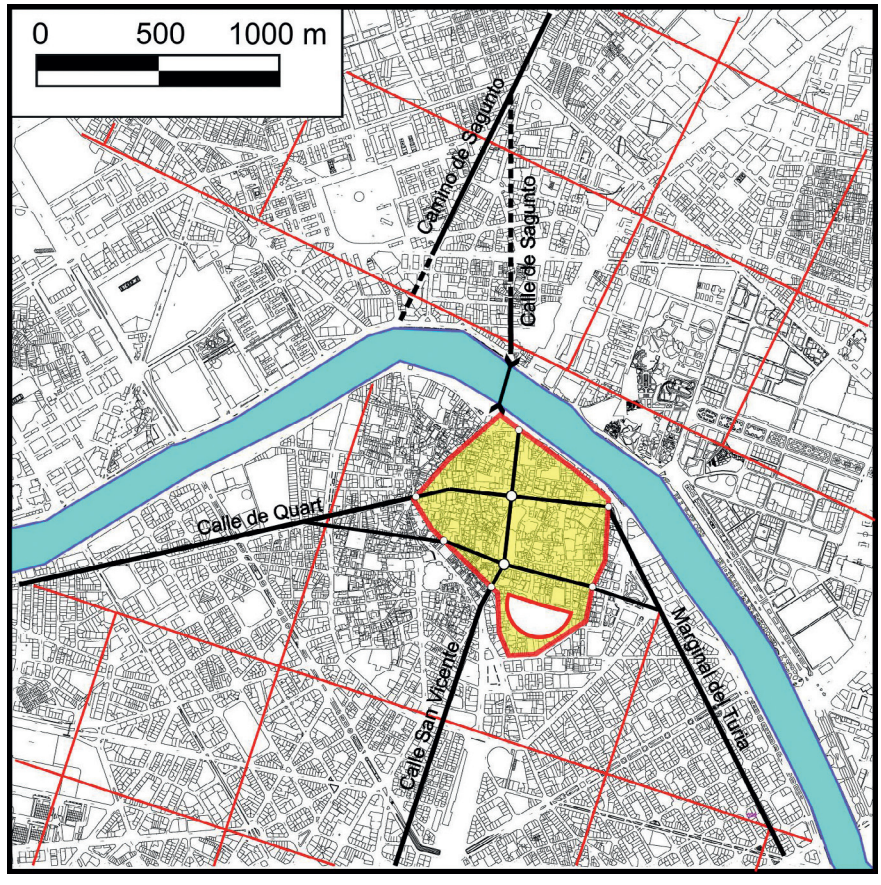

Figure 6. Hypothetical urban form of Valencia in the Islamic period. The Islamic walls seem to include the fringe belt of the Roman city, with the exception of the southern sector, the expansion of which may be due to the presence of the Roman theatre.

and, moreover, consistent with the urbanizing Roman customs.

After a long period of almost complete abandonment that started with the destruction and burning of the city in the year 75 BC after the Civil War (Escrivà Chiver *et al*., 2010, p. 58; López-Davalillo Larrea, 1999, p. 58; Sanchis Guarner, 1988, p. 26), the *municipium* of Valencia was reconstructed, but it maintained the same basic layout, including the location of the Forum (Escrivà Chiver *et al*., 2010, pp. 50–7). Indeed, Valencia had become one of the main cities in Hispania. The walls follow a polygonal layout. This layout, which we hypothetically reconstructed on the basis of its traces in the fabric of the fringe belt, seems to observe the characteristic Roman principles of symmetry and regularity. The *Saguntina* and *Sucronensis* gates are at the far northern and southern ends of the *cardo maximus*. The east and west gates of the *decumanus maximus* seem to have been placed at the centre of major walls (Figure 5).

The documented presence of an important circus in the south-east part of the city (Escrivà Chiver *et al*., 2010, pp. 37–9) allows consideration of the question of the existence of a theatre. It was customary in Roman cities of the imperial period for this important building dedicated to theatrical performances to be constructed before the circus was constucted (Merlo, 1996). No remains of the possible theatre have been found yet. However, it was only a few years ago that archaeological evidence of the circus in Valencia was discovered. Again, a research method based

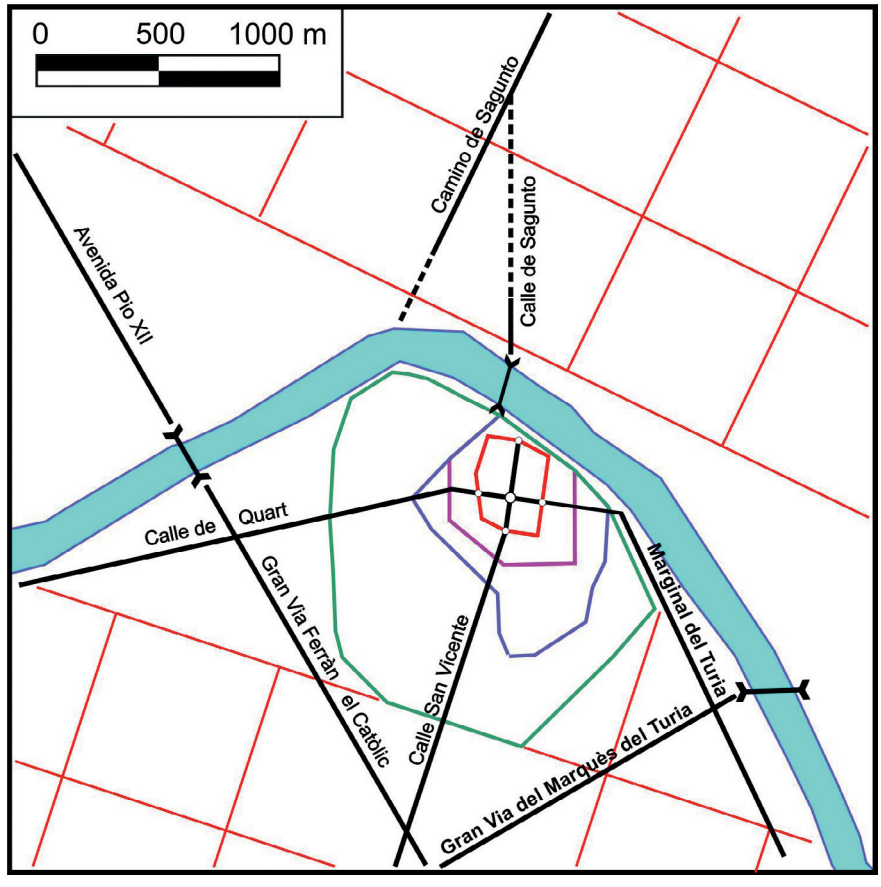

Figure 7. The four urban walls of Valencia and the two 'Grandes Vias' of modern expansion.

on the interpretation of extant fabrics suggests the existence of the theatre, based on the presumption that it would have had an effect on the curved southern section of the Islamic wall (Sanchis Guarner, 1988, p. 44 (Figure 6).

Conclusion

In the case of cities of Roman origin, there is a methodological need to inductively reconstruct, starting from surviving features, the planned mesh of *centuriations* designed on the margins of the large consular roads. Unlike reductionist positions that only consider as valid the interpretations based on findings of material remains or documents of the time, the presence of layouts and landmarks in the present fabric that are consistent with the Roman way of proceeding can be used to put forward hypotheses about historical processes that generated current cities and territories. The layouts of roads and property divisions, if interpreted correctly, can be just as valuable as material remains, and should be an integral part of understanding the past.

There is a need to analyse the influence that the ancient fabrics have had on modern structures (Figure 7). The case of Valencia is exemplary: two of the main modern infrastructures, the railway line and the international airport of Manises, actually follow the orthogonal layouts of Roman planning based on *cardo* and *decumanus*. The knowledge and interpretation of events that took place more than 2000 years ago is also valuable in understanding the current situation, not least in distinguishing aspects of reality that contain elements of continuity.

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