LES TERMES PÚBLIQUES DE L'ÀREA PORTUÀRIA DE TÀRRACO

Carrer de Sant Miquel de Tarragona

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In Sant Miquel street, Tarragona

English Traslation of the Conclusions

CONCLUSIONS

1. Introduction

Josep M. Macias

The information contained in the previous chapters represents a significant episode in the rediscovery of Tarraco that has taken place in recent years, as part of the continual process of urban change that affects the contemporary city. In the past few years, the lower part of Tarragona has been subjected to intensive redevelopment that has provided archaeologists with a great deal of data on the port area of Tarraco. This study focuses mainly on the most important find – that of the public thermae in Sant Miquel Street. Nevertheless, the contextualisation of the thermal complex[198] has made it necessary to consider the overall urban and geographical environment, circumscribed by the eastern half of the port area of Tarraco – in other words, by the natural bay, since enlarged by subsequent urban reforms, but which was originally defined by the coastal promontories at the end of the hill occupied by the city (figs. 6-8).

The public thermae located in the port area would have been a specific social and architectural phenomenon. However, the analysis of their materialisation and morphology cannot be disassociated from earlier historical and urbanisation processes – in particular those that refer to the construction of the city's port *emporium*. This was built at the height of Tarraco's economic development, and its different areas and activities may well have occupied between seven and ten hectares of land between the port jetty and the mouth of the River Tulcis (the present-day Francolí). The archaeological evidence found in this area denotes an urban evolution that mirrors the economic vitality of a city which, in overall terms, hinged on four main transformation processes.

The first of these processes came about during the Republican period and took place in the lower part of the city. This was a purely port activity restricted to the natural bay area, about which we still know virtually nothing. The construction of the Theatre and numerous port installations during the 1st century and the first half of the 2nd century AD represents the definitive emergence of the *portus*, and was closely linked to the urban and demographic growth of the city. From this time, the port area acquired a dual role: an economic function linked to the port and the facilities built along the shoreline, and a monumental and leisure function centred around the Theatre, its adjoining gardens, and the public baths. In urban terms, this second period of development took place to the rear of the port infrastructure and was clearly connected in town planning and landscaping to the Colonial Forum and the residential area of the city.

The third phase consisted of the construction of the public thermae in the port area, at the end of the 2nd or during the first half of the 3rd century, and was the result of a social context that favoured the practice of bathing, as well as a ratification of the urban pre-eminence of the port of Tarraco. With the abandonment of the Theatre at the end of the 2nd century and of the Colonial Forum at an imprecise time during the 4th century, the thermae must be considered to have been the social and cultural centre of the city's daily life, which, during the latter century was increasingly confined to the port area. Thus, the new port area ended the 4th century with the warehouses and distribution centres built during the Early Roman period being occupied by workshops and residences.

The public baths documented in Sant Miquel Street, like the Circus and the Amphitheatre, were in use until the 5th century. During this period, the new economic and political situation brought about a fourth transformation that led to the definitive conversion of the port area into a residential zone, dotted with phenomena related to the Late Antiquity, such as private *balnea*, isolated funerary areas, and structures linked to manufacturing processes. The port of Tarraco continued to be used, but on an urban and economic scale in keeping with the circumstances of the time and the role of *Tarracona* within the framework of the Visigothic kingdom.

The structure of this book is that of an analysis of the public baths within the context of the bay of the port of Tarraco. Therefore we have jointly analysed the physical environment and historical evolution of the site occupied by the thermae (Chapter 1), with the aim of explaining the features and various functions of the site throughout the history of the city. We believe that, in the same way as Roman town planning conditioned the physiognomy of the mediaeval city and its later expansions, the infrastructure defined in the area of the thermae was an essential factor in the location and specialisation of the port activities taken on by this part of the city from mediaeval times to the contemporary period. Finally, the historiographical precedents (Chapter 2) show the archaeological

198 The initial hypothesis was confirmed by the archaeological excavations carried out in 1998, which allowed the preliminary findings to be published (Díaz *et alii* 2000 a and b).

wealth of this part of the city and help us to understand the state of preservation in which we find the remains today.

In Chapter 3 we analyse the stratigraphy of the various archaeological excavations, carried out as a result of construction projects, which have allowed us to determine the existence of the public baths (Section 3.2), plus adjacent finds (Sections 3.1 and 3.3) and other discoveries that we consider key factors in our understanding of the historical evolution of this part of the city. The material remains retrieved from the thermae complex are dealt with in Chapter 4, in which we undertake an exhaustive analysis of the decorative architectural elements recovered (Sections 4.5 and 4.6), as well as pottery, coins, and sculptures (Sections 4.1 to 4.4). Finally, in Chapter 5, we present the final conclusions of our study of the thermae complex and the definition of the main features of the historical and urban evolution of the eastern half of the port of Tarraco.

2. The Sant Miquel Street Thermae

2.1 An Interpretative Analysis
Moisés Díaz and Josep M. Macias

Although the character and importance of the thermae remains meant that in 1996, through archaeological delimitation work, we were already able to identify the site as a public baths complex,[1] it was not until ICAC undertook a research project that we fully grasped the scientific and heritage potential of the site.

An exhaustive analysis of the site, the study of which had been restricted to the obligatory administrative report, helps us to better understand the thermal complex and allows us to propose a hypothetical reconstruction of the Tarraco thermae as yet another example of the architectural prototype known as *imperial type*. Despite all the work carried out, it has to be recognised that only part of the building –some 800 square metres– has been archaeologically documented. This area has served as the basis for establishing the hypothesis of a complex that must have covered some 3,500 square metres. Despite the incomplete nature of the data, we believe that our suggested reconstruction of the plan is a plausible proposal and that the overall analysis allows us to comprehend various specific elements of the thermae buildings, as well as enabling us to fit it in with some of the historical aspects of the city during this period. However, it should also be noted that the partial nature of the excavation, as far as the extension and depth of the dig are concerned, is an insurmountable handicap for certain specific questions. It is therefore probable that, were to be new archaeological excavations on the same site or in the nearby area, the results we present here may well have to be re-thought (see figs. 27-30 and 134-137).

The fact that we can identify a relatively homogeneous architectural model of thermal bath typology does not mean that it does not have its own distinctive constructive and urban development traits, resulting from the cultural and technological environment of the city of Tarraco at the time of its construction, and also from the urban development constraints of the site on which it was built. In this context, certain conclusions become an interpretative proposal, the validity of which will be a challenge for future archaeologists. Despite this, the identification of imperial type public baths in this case makes it a firm possibility, meaning that the city of Tarraco can be included in the social and cultural trends of the period. This is an obvious conclusion if we take into account that we are speaking of a provincial capital that already had other important recreational facilities.

Our basis for suggesting imperial type public baths is the size of the thermal facilities and the identification of a central axis consisting of the following rooms: *natatio* (Area VI), a tripartite *frigidarium* (Areas IV, V and the replica of Area IV), a possible *tepidarium*, and a *caldarium* (Area VII). As was the norm in this type of leisure complex, the heated areas were located on the sunny side (midday) and the cold rooms on the shaded (northern) side. The excavated area includes a series of rooms located to the west of the symmetrical axis that, going by typological criteria, could have a symmetrical duplicate on the eastern side (figs. 134 and 136).

This hypothesis implies a thermal complex covering a considerable area; therefore the building cannot be taken in isolation, but should be considered as the coalescence of an intensive urban, cultural, and functional transformation of the lower part of the city. The data currently available to us does not allow us to evaluate the significance of this phenomenon in the area of the thermae during the 3rd century AD. On the other hand, the architectural plan of the complex reflects the intensity of this phenomenon in the area of a new urban development process and, at the same time, the determining geographical and town planning factors that influenced the architectural disposition of the baths. The thermae were built laterally adjoining the southeastern promontory of the city and a study of the plans shows the limited amount of land available. We can see a disproportion between the hypothetical distances of the transversal and longitudinal axes, as if the available area had been confined by two insurmountable elements - the crest of the escarpment and some port roads that limited the construction of the thermae to the south. There is no evidence of the latter, although the excavations at No. 10 Sant Josep Street indicate the proximity of the

seashore (Section 3.4, figs. 11 and 92). On the other hand, the location of the thermae complex is in keeping with the continuity of the leisure area of the port façade, a result of the monumentalisation process started in the time of Augustus. We have found evidence of thermae on both sides of the Theatre (Apodaca and Dr. Zamenhoff Streets), which demonstrates the installation of such complexes that define a leisure area related to the Theatre and its adjoining gardens and porticos (figs. 151 and 152).

The description and analysis of the different rooms is based on the data contained in Section 3.2.4 and follows the canonical itinerary used in this type of building. Therefore, the first thing we deal with is the access points, the analysis of which shows us that the thermal complex respected the layout established during the Early Roman urbanisation of the port. We have documented an access on the northern side and by applying a theoretical splitting into two we would have to situate another on the same side of the thermal building (see figs. 29 and 134). The construction of the thermae respected the port road that had earlier separated *horrea* of the retaining walls that lined the upper crest, in such a way that the northwestern entrance constituted an enclosed access for the thermal complex itself and through the retaining walls that lined the escarpment. It is about 3.2 m wide (Sector IV, Area II) coming from the area of the Theatre, which ran parallel to the northern façade of the baths. At No. 33 Sant Miquel Street the road runs below the retaining walls on the hill, but as it extends to the east, the curve of the escarpment towards the Theatre leaves more room to develop the area to the north of the road. There is also a theoretical possibility that entrance could have been made from the upper part of the hill, via a ramp or a stairway built on the walls between Area XII and the crest line of the rock (figs. 17 and 135).

All that remains of the access to this part of the complex —*accessus*, *ingressus*— is the housing of the door threshold (Area II). We have to point out another coincidence with respect to the port buildings: this entrance and the consequent circulation axis of the baths was built over the road separating the two port buildings of Phase II. It would have been a 3.1 metre wide access, narrowed by the uprights of a door that was pillaged during the Late Antiquity (fig. 138). Just inside the doorway we find a small entrance area that is the beginning of one of the main routes around the baths complex. The area measures some 3.1 m wide and 2.9 m long and is paved with white *opus tessellatum*. The first room we can enter corresponds to the latrines (Area III), situated to the left of the passageway.

The latrines were built taking advantage of one of the angular rooms of the Early Roman *horreum*. The position of this room, in the layout of the warehouse, made it impossible to enter from the interior of the central courtyard, which explains the presence of a door facing the port road that runs from SW to NE. This door remained in use during the thermae phase and led to a square room measuring some 4.7 m. The elements that have helped us interpret the use of the room are the two underground masonry conduits laid perpendicularly, with a section characteristic of latrine drains. On the other hand, we can see how the route taken by the drains does not run exactly parallel with the perimeter of the room. This could be because it was necessary to take advantage of the downpipe of the lower conduits belonging to Phase II (figs. 17, 22, 39, 40 and 138).

Continuing along the entrance passage we come to a large arcaded area 18 m wide and with a theoretical length of 15.6 m, resulting from the application of a square module for this wing of the thermae building. This is Area I, which is divided into five sections by four colonnades. The lateral sections are 2.8 m wide, while the central section is wider and was occupied by a 4.5 metre wide pool accessed from the eastern side, near the longitudinal axis of the main entrance. The space between the columns of the colonnades is approximately 3.5 square metres.[199]

This type of structure has been given various names in the scientific bibliography: *basilical vestibules*, *large rectangular vestibules*, *grandes salles* or *basilica thermarum* (bibliographical compilation in Nielsen 1990 and Yegül 1992). All these names define a large area, normally with porticoes and a rectangular floor plan. Basically, it is an area with basilica-type features, which often had *ambulacra*, and is associated with the *frigidarium*. Its functions were several and varied. In many cases it was used as a *palaestra* for indoor sports and exercises, as a vestibule, an area for social meetings, an *apodyteria*, a reception room, a leisure and entertainment room, etc. Its versatility made it a combination of *apodyterium* and *frigidarium* (Nielsen 1990, 162; Yegül 1992, 400-404).

The *basilica thermarum* of the port of Tarraco thermae was probably used for the purposes described above. It can be interpreted as an *apodyterium*, based on its location in relation to the entrance and the presence in the northern section of two adjoining benches. The

199 Based on the documented remains —bases and fragments—, this rate is neither totally homogeneous, nor regular, as it varies between 3 and 3.5 m. Such irregularity is not characteristic of Early Roman architecture in Tarraco, but at the time the port thermae were built, we begin to note a decrease in the quality of construction projects and the materials used in them. Another approximately contemporary example of this new trend in construction is the re-use of various slabs of marble, including a pedestal (RIT 167) on the marble facing of the Amphitheatre podium in the year 221 (TED'A 1990, 128).

first of these backs onto the northern enclosure wall and in theory could have had shelves or niches made of brick or wood on the upper part of the wall. There must have been a second bench following the northern colonnade, the foundations of which would have been embedded into the bench itself. These elements lead us to believe that this section would have served a different purpose to that of the rest of the room, a hypothesis further strengthened by the type of decoration on the flooring. Whereas the floor of the *basilica thermarum* is paved with a monochrome mosaic of white tesserae, the northern section has a red perimeter border from end to end, with the tesserae aligned with the wall. Also, some of the column bases and the mosaic border surrounding it go back towards the interior of the section to hypothetically define a door separating it from the rest of the *basilica thermarum* (figs. 17, 31 and 34-36).

On the other side of the room, the southern section has another bench adjoining the western wall that separated it from Room IX (fig. 17). The bench is on one of the longitudinal axes of the baths and, without excluding other activities, the section in which it is included must have been a transit area between the *basilica thermarum* and the adjoining rooms located on the eastern side. The main element of the three central sections was a pool that occupied part of the central section and was surrounded by the other two. This would have been the area for strolling and conversing and may also have been used for exercises taken before bathing.

In the middle of the *basilica thermarum* there is a *frigidarium* pool almost 4.5 m wide and 1.2 m deep (figs. 31-33). The hypothetical length of the bottom of the pool is some 6.8 m. It is surrounded by a projection made up of a step at the eastern end and an adjoining bench on the other sides. This is one of the pools that flanked the *frigidarium* room and, together with the *natatio*, was the last stop on the passage through the baths. Our proposed symmetrical restitution establishes the presence of two facing pools separated by the *frigidarium* area. This is a common architectural disposition in large public baths and is not exclusive to imperial type baths. The pools in the basilicas could also be the beginning of the bathing following the sporting activity. These suppositions notwithstanding, the route taken through the baths could always have been subject to the personal preferences and customs of the bathers themselves.

The entrance is on the eastern side, where the pool ends in a step that follows another four steps, which allowed the bathers to enter the pool and sit down and take the cold bath. We do not know the height of the step, but if it is similar to the lower steps, it would have measured between 20 and 40 centimetres. The surrounding bench was one metre wide and was edged with a small red mosaic border, with the tesserae aligned with the wall (figs. 34-36). The columns of the central section must have been supported on the bench. The floor at the exit from the pool was richly decorated. First there was a polychrome mosaic of secant circles that preceded a sign, now largely lost, that would have been read by bathers coming out of the *piscina*[200] (figs. 114-117 and 139). Then there was another mosaic depicting a labyrinth protected by a wall with towers, which was entered from the southern side, in other words, to the right of the *piscina* on exiting. This was probably designed to indicate to the bathers the direction they had to take to continue to the heated rooms adjoining the *caldarium*, the *concamerata sudatio*, probably located to the south of the *basilica thermarum*.

The standard route around the baths indicates that Area I must have led to the rest of the rooms that made up the heated areas adjoining the thermal building, including the symmetrical *tepidaria* and the rooms of the *concamerata sudatio*. It is highly likely that these were located to the west of the service passage (Area VIII) and to the south of the *basilica thermarum*. This would explain the fact that the northern curtain wall of Area I does not have an adjoining bench on which to sit, since the wall must have had a series of doors that gave access to these rooms. On the other hand, the preserved evidence indicates that the service areas of Areas VIII and X were below ground and were covered to allow the upper floor to be used as part of the thermae (figs. 51 and 52). In this way the heated rooms were located on the sunny side of the building in the area of the large central *caldarium*, as seen in the most representative examples of the imperial type.

The partial nature of the excavation limits our overall knowledge of the thermal area, which is why the rooms adjoining the central caldarium are those we are least able to interpret. It is obvious that these rooms would have been entered from the southern side of the *basilica thermarum*, while the return to the frigidarium rooms could have been made either via the large central caldarium or across the labyrinth mosaic. In the latter case, it would have been across the same longitudinal axis defined by the access door to the baths. The first option raises doubts as to the lateral connection between the heated rooms and the large axial caldarium (fig. 136).

The reconstruction of the caldarium allows for the presence of two large rectangular *alveus* on the

200 This is something frequently found in thermal baths, where texts aimed at the bathers were inscriptions, often framed in *tabulae ansatae*, placed at the entrances and exits of the baths (Yegül 1992, 38) (see Section 4.5).

transversal sides, so that access to the interior of Area VII must have been from the secondary rooms, through Room IX. Here we have documented an open doorway between the *alveus* and the lower apse (figs. 45 and 56). Likewise, via the small Area XI, it was possible to enter the large frigidarium room (V) without going through the caldarium (fig. 53). We are not sure how Room IX was entered, nor of its purpose. It cannot be reached directly from Area I because of the bench adjoining the separating wall. Therefore, it could only have been entered from the lateral heated rooms across the service corridor (Area VIII) and from the area where we believe the *concamerata sudatio* to have been (Excavation Sector No. 17). The roof of Area VIII has sockets for wooden beams and, as far as the architecture is concerned, the northern side of Area IX has a series of retaining walls. These elements allow us to suggest the following hypothetical itinerary: from the *concameratio sudatio* to the upper floor of Area VIII and subsequently to Room IX. This is a complex possibility but also a coherent one as it would have avoided the loss of heat.

Area IX could correspond to one of the *tepidaria* that may have flanked the main caldarium. This theory is based on the use of the room as a thoroughfare and on architectural parallels found in similar structures (fig. 51). Another option we need to take into account is that it is one of the *sudatio* that flanked the central *tepidarium*. In this case, we would have an imperial type layout with a clear North African influence, as in the large southern thermae of Thamugadi, Hadrian's Baths in Leptis Magna, the large eastern thermae of Mactaris, the large western thermae of Cherchel, the large southern thermae of Cuicul, and the thermae of the legionary camp of Lambaesis. Working against this theory is the considerable size of the room and the presence of only one heating furnace. In addition, the room had three doors, which would have made it difficult to keep the temperature warm and constant.

The *caldarium* floor plan has been reconstructed from remains considerably altered by Late Antiquity occupation and by a large storage cellar built in modern times. Little evidence remains of the *hypocausis* system, the *concameratio* of the walls and a little less than half of the actual perimeter of the area (fig. 47). Despite this, thanks to the fact that we are dealing with a canonical thermae complex, we are able to propose a reliable reconstruction of the floor plan. The actual *caldarium* is a rectangular area measuring 10.5 by 16 m. It has two rectangular *alvei*, some 2.9 m wide and 8.55 m long, and probably a third semicircular one[201] located at the southern end where the axial route culminated.[202] The *alvei* would have been separated from the rest of the hall by a stepped wall which, in addition to providing height to contain the water –a depth of about one metre (Nielsen 1990, vol. 1, 157)— would have been used as a bench for resting and conversing.

At the northern end of the excavated area we have documented a large hall with an apsidal floor plan, which has served as a model for the reconstruction of the *alveus* located on the opposite side. From the terminological point of view, this hall can be interpreted in two ways, although, in practical terms, its use with in the ritual passage through the baths could have been the same.

The first possibility is that it could have been the *tepidarium* of the thermae, logically situated on the axial axis. In this case it would have been separated from the *caldarium* to the south by a wall or a colonnade. No evidence remains of this but it can be positioned based on the hypothetical reconstruction of the Phase II port building, because in many cases we can see that the foundations of the latter have been used in the building of the thermae (figs. 140, 141 and 145). This room must have measured 10.5 m on its longest side, where there is a 3.5 metre radius apse. It is not unusual in imperial thermae to have the *tepidaria* in a small open room in the lower part of the *caldarium*. Thus, the *tepidarium* would have been a small annex, in the same way as the on the other three sides of the *caldaria* there are rectangular and/or apsidal *alvei*. This can be seen at Trajan's Baths in Rome[203] and is common in the many North African examples, the most similar in terms of size and characteristics to the Tarraco thermae. For example, the thermae of Licinius in Thougga, the baths of Hadrian in Leptis Magna,[204] the large northern baths of Thamugadi, the large eastern baths of Mactaris and the thermae of the Palais du Legat at Lambaesis. In these cases the presence of a small axial *tepidarium* is accompanied, symmetrically, by secondary *tepidaria*. This may be the case of the Tarraco baths, where the *tepidaria* (Room IX and the replica) are located at the sides, together with the rest of the heated rooms —*sudatorium, laconicum, unctorium*— that make up the *concamerata sudatio.*[205] This layout of three pools in the hot

201 This must be below the present-day Sant Miquel Street. It is possible that this pool was rectangular-shaped, but the architectural proportions and the majority of the parallel examples (the western baths of Caesarea, the baths of Lambaesis, Utica, etc.) suggest our proposed option is more appropriate.
202 A characteristic element of the visual effects used in the scenographic design of imperial baths, where the perspective of the central *natatio-frigidarium-caldarium* axis culminated.
203 Although in these large imperial baths the small *tepidarium* is flanked by two pools.
204 The *tepidarium* is a small rectangular apse situated behind the central pool of the *frigidarium*.
205 A group of rooms with *hypocausis* organised *en bloc* for functional reasons, basically in order to concentrate the heat (Mar 1994, 289).

room, plus a *tepidarium* at the other end, is often found in North African imperial baths, and can be seen at the above-mentioned sites of Mactaris, Thamugadi, Cherchel and Cuicul.

A second, less probable, possibility is that of a large *caldarium* consisting of a central rectangular body of 10.5 m by approximately 16 m that was linked directly to the *frigidarium* passing through a small 3 metre deep apsidal room, preceding a large rectangular space. In this interpretation there is no change in the presence of the two rectangular *alvei*, which are centred on the sides with a width of 2.9 m and a length of 8.55 m. Finally, at the southern end of the hall, there would have been a third, semicircular *alveus*, a replica of the apsidal vestibule,[206] rounding off the *caldarium*.[207] In this way the axial compositional block consists only of the *caldarium-frigidarium-natatio* in succession. In this case the only *tepidaria* were found in the annex rooms situated symmetrically on either side of the large *caldarium*, as in the thermae at the legionary camp of Lambaesis, where the central area between the *frigidarium* and the *caldarium* is occupied by a circular *sudatorium* flanked by two large symmetrical *tepidaria*.

From the northern apse of Area VII we reach, via a 1.75 metre wide door, a large, partially preserved frigidarium measuring 9.6 by 11 m (Area V). The construction of this area took full advantage of the foundation walls of the central patio of the *horreum* built in the time of Flavian (figs. 28 and 29). On each side of this *aula frigidaria* there are two rectangular cold rooms measuring 9.6 m long by 4.7 m wide. Of these, we have documented the western room (Area IV), partially integrated in the portico of the central sections of Hall I and with the same mosaic flooring, showing that we have a tripartite frigidarium with a large central *aula* and two more of smaller dimensions on either side, open to the *basilicae thermarum*. The wall that separated the central body of the *frigidarium* from Area IV had a 2.05 m wide door rounded off by a monolithic white marble threshold. This door was located in a position with a visually strategic perspective, facing the transversal axis defined by the pools of the basilic annexes to the *frigidarium* (figs. 31, 57, 137 and 139). In this way, once the passage through the thermae had been completed at the *natatio*, the bather returned to the beginning of the itinerary, without having to go through the caldarium.

To the north of the central *aula frigidaria* was the open *natatio* of the thermae, of which we have identified the western end (Area VI), greatly disturbed by a contemporary storage cellar (figs. 25 and 42). The scant remains are limited to a few vestiges of the waterproof lining and the drainage channel, sufficient to allow us to establish a depth of some 1.4 m.[208]

In summary, the morphology of the cold rooms shows us a tripartite *frigidarium* flanked by two symmetrical *piscinae*, which in our case are incorporated into each annexed *basilica thermarum*, in addition to a third, larger pool limited by the façade of the building central axis: the *natatio* (fig. 137). This is a common layout for imperial thermae, which is already found in the first building of this prototype – Nero's Baths in Rome. Here we propose a large rectangular *frigidarium* flanked by two rectangular rooms of a smaller size that lead to the *basilicae thermarum*, as in the Baths of Caracalla in Rome. The most common practice in the North African imperial baths was to build a large rectangular *frigidarium* flanked by two *piscinae* and a *natatio*, as is the case in the Tarraco baths. Similar examples to the Tarraco thermae[209] can be found in Hadrian's Baths at Leptis Magna where, as in Tarraco, the lateral *piscinae* are flanked by a colonnade and are incorporated into a hall with different corridors/porticos with diverse functions. Other similar examples are the large western thermae of Cherchel, the large eastern thermae of Mactaris, or the large thermae of Cuicul.

Around the caldarium we have been able to document part of the service area related to the heating infrastructure: Rooms VIII, X and, in a second phase, Area IX. This is an underground area connected to the outside of the building, which, in the documented segment, is below the thermae rooms. The most significant part is the lateral corridor of Area VIII, which is the same length as the adjoining rectangular *alveus*. There are preserved remains indicating the *praefurnium* situated below the pool. The corridor leads to Area X via a one metre wide doorway with a semicircular arch (figs. 49 and 50). In this room we have documented the aperture of one of the *praefurnia* that heated the *hypocausis* of the large central hot room. As regards the circulation height of this service area, it must have been around 3 metres above sea level, while the lower level of the caldarium *hypocausis —Area—* was about 3.4 metres above sea level. The floor of the furnace aperture was sloping to prevent the accumulation of ashes (fig. 141). This is a solution well

206 This aspect formed part of the new compositional grammar, based on the combination of large geometric forms, applied in imperial baths, in which there was a play on the visual axes of the itineraries, culminating in geometric shapes such as pools or niches. It is another element in the luxurious scenography of the thermae buildings, together with the large vaults of the ceilings, the windows and the rich decoration (Mar 1994 and 2000).

207 In total, we have a *caldarium*, including an apsidal vestibule and the *alvei* on the three sides, with a maximum size of 22 m long and 16 m wide.

208 The depth of these pools usually ranged from between 1.5 and 2 m, although there are also many examples that were only 1 m deep (Nielsen 1990, vol. 1, 155).

209 This is a commonly used design in North Africa, both in imperial baths and in the monumental semi-symmetrical type, e.g. the western baths of El Djem (Thysdrus), the large baths of Guelma, the summer baths of Thuburbo Majus and the large northern baths of Hippo Regius.

known to us through the writings of Vitrubius (5, 10) and from other parallel thermae.[210]

The subsoil of Room IX is difficult to interpret due to its state of preservation. It may possibly have contained a hypocaust supporting the floor of the original tepidarium, which was dismantled during the installation of a heating furnace in Phase V. Despite not having concluded the excavation of the interior, the low level (*Area*) is located at about 3.5 m, a very similar level to the interior of the caldarium. This fact, together with the position of the room, justifies the hypothetical presence of a hypocaust. In addition, the relationship between the levels creates a situation analogous to that of the relationship between the corridor and the area of the caldarium, for which reason we can surmise that there was another furnace at the northern end of the corridor, that was used during the first phase of the baths.

The southern location of the service rooms allowed the equipment to function without disturbing the customers' enjoyment of the baths. It is possible that another service corridor began in Area X with *praefurnia* to heat the semicircular *alveus* and the water boilers (figs. 134 and 137). Hypothetically, we could place other furnaces to the south of the rooms of the *concamerata sudatio*, in such a way that all the rooms of the service area were facing the port zone –at the opposite end of the accesses- with the ideal spaces for handling and storing the supplies (firewood and coal) needed for the furnaces.

One of the features of imperial baths was that they were surrounded by a recreational area with porticos, gardens, libraries, walkways, etc. All these elements were included in the so-called *amoenissimi loci*, a true *paradeisos* in an urban setting. This was the image offered by the grand imperial baths of Rome, such as those of Titus, Trajan, Caracalla, and Diocletian, where the central block, consisting of the baths building, was surrounded by a wall that isolated the whole complex from the rest of the city, to define the aforementioned garden.[211] In the examples outside the capital, this leisure area appears to be defined within a large palaestra, as at the thermae of Barbara in Gallia Belga (Trier) and in many North African examples. In the cities of Roman Africa the large and medium-size thermae, both of the symmetric imperial type and other less monumental variants, had a large *palaestra*, normally with an orthogonal shape,[212] although there are also some circular examples.[213] Preferably located in the access area adjoining the *natatio* and the changing rooms —*apodyteria*—,[214] the African palaestra was not just an area with porticos for gymnastic exercises, in a Greek sense, it was rather an area dedicated above all to leisure and cultural activities,[215] which had numerous adjoining rooms open to porches, apses, etc.

In our case, the existence of a palaestra is an unknown factor that was not resolved in this round of excavations. Nevertheless, we could state that it was there, taking into account the urban context in which the baths were located. The data obtained at No. 1 Castaños Street leads us to believe that the large buttress walls that bordered the urbanised area of this part of the city from Flavian times, could have been the western limit of the public baths, when considering the *thermae* as an architectural space and a surrounding multipurpose leisure area (figs. 84, 85, 77 and 135). For this reason, we cannot rule out the possibility that there were two palaestrae or garden areas located at each end of the public baths, as in Nero's Baths in Rome or the Antonine Baths in Carthage, since the determining factors deriving from the urban location of the new baths made it impossible to have a palaestra at the northern end of the complex. With reference to this possibility, we should recall the exedra with an axial door documented during the work carried out in the 1970s (fig. 10). Oral statements indicate that the exedra was found perpendicular to the longitudinal axis of the baths, with its back to the area of the *basilica thermarum* (Area I) and with the entrance facing Plot no. 33. This data indicates an apsidal room of undetermined size and location, which could have been a transit area between the basilica and an area of gardens or an open air palaestra, which would have had a similar function to other areas of a similar shape and disposition.[216] In this way, the thermae complex would also have had an open air area for gymnastic exercises and for strolling in an atmosphere of controlled nature, which gave onto, if we take account the best known models, rooms dedicated to cultural, intellectual, and leisure activities, and even to eating snacks. Customers would then

210 Known examples are found at the baths of Barbara in Trier (Gallia Belgica) and the large northern baths of Thamugadi, North Africa (cf. Degbomont 1984, 35-36).

211 Furthermore, in the first examples from Rome, at a time when the architectural prototype we know as *imperial type* was yet to be fully developed, the thermal baths were built adjoining gardens and lakes, such as Nero's Baths in the Campus Martius.

212 As is the case of the large western baths of Cherchel, the large baths of Lambaesis, the summer baths of Thuburbu Majus and the western baths of Thysdrus. Also worthy of note is the palaestra of the Leptis Magna baths, which is rectangular with the ends culminating in apses.

213 As in the western baths of Gigthis, where the large circular palaestra with a colonnade was inscribed in a square with semicircular apses at the corners.

214 Although it could have been placed laterally with respect to the orientation of the baths for urban planning reasons that forced it to adapt to the pre-existing buildings, as can be seen at the large baths of Cuicul or the baths of Licini in Thugga.

215 For more details, see the previously-mentioned work of F. Yegül about this type of baths structure, particularly pages 184-186 and annex C, with pages 396-400.

216 See the entrance to the *basilica thermarum* at the Caracalla baths or the apodyteria of the Diocletian Baths (Nielsen 1990, figs. 58 and 59).

have returned to the *basilica* to begin the succession of baths in the frigidarium pool.

The size of baths complex we propose would have required a considerable water supply and drainage network and possibly the use of its own or an exclusive water source. This could have been a special, purpose-built aqueduct bringing water to the baths or part of an existing supply network.

The water needed to keep the baths working can be calculated from the capacity of the bathing pools. We estimate some 200 cubic metres between the semicircular *alveus* (15 cubic metres), the two rectangular pools (40 cubic metres), the *natatio* (75 cubic metres) and the *basilica thermarum* pools (74 cubic metres). We have to increase this approximate figure to take into account the fact that the water would have had to have been constantly replenished, especially in the busiest periods of the year and at the most popular times of the day. Also, the latrines, as well as the gardens and fountains that hypothetically embellished the surroundings, would also have needed a constant flow of water. Such an amount of water would not only have required a supply network, but also an independent storage system designed to guarantee the supply during periods of peak demand, and possibly also to give greater pressure to the distribution pipes inside the complex. This leads us to surmise that there must have been large storage tanks (*serbatoi)*. The lie of the land and the location of the thermae at the foot of the escarpment means that the best place for these would have been at the top of the hill, a site occupied by water storage facilities in the modern and contemporary periods.

These suppositions are based on references to other thermal bath complexes, although in the case of Tarraco, we have no actual archaeological proof. There are no reliable indications of a water supply system for the baths and it is also possible that the water was obtained from underground sources. The presence of a subterranean lake beneath the city (Burés *et alii* 1999, Garcia/Macias 2002) could be linked to this supposition. Despite this however, we believe that given the size of the complex, it would have needed pipes and reservoirs situated at a higher level. Not only that, but the layout of the pipes during the Phase II of the Sant Miquel Street site show that the water came from the upper part of the city, with conduits having characteristics matching those of the *specus* in general and with other sections of aqueduct located in the area of the city of Tarragona (Cortés 1993). Part of these conduits must also have been used to eliminate the excess water, as can be seen from the drains in Areas I and VII (figs. 17, 21-23, 28-30 and 153).

The Roman water supply infrastructure in this part of the city may have been reused after the mediaeval reoccupation, as can be seen from the sewers of Castaños and Apodaca Streets (Section 1.2). Another example of this phenomenon in Tarragona is the construction of the city aqueduct in the 18th century, under the patronage of Archbishops Santiyán and Armanyà. The route followed by this conduit takes advantage of the topographic study carried out when one of the Roman aqueducts was built.

A similar possibility suggests itself in relation to the supply system for the thermae complex. The site in Castaños Street is at the end of the Rec Major, an irrigation channel some 3 kilometres long that comes from the River Francolí, and which has been historically documented since the 13th century (DA 1998, 64). The channel irrigated the whole cultivated area of Tarragona on the right bank of the Francolí and had sufficient volume of flow to drive the mills located on its final section, in the port area. At the end of its trajectory, the Rec Major fed the "Bassa dels Molins" (mill pool), located at the top of the hill bordering the thermae, at which point the Molins and Caputxins or Castellarnau irrigation channels began. The first section led towards the dock and has been interpreted as a fossilisation of the Castaños Street sewer. The second conduit skirted the top of the hill that bordered the baths. We propose the possibility that the Rec Major fossilises an earlier water infrastructure linked to the Tarraco thermae. On this point, we have to mention the possible Roman remains that have been identified along the route of the present-day Rec Major (Serra 1936, 110). Finally, the presence of the Molins pond could be interpreted as another vestige of the ancient reservoirs.

As in the case of other thermal bath complexes, the Tarragona thermae were not a permanent architectural structure, but were the subject of a succession of alterations and renovations that would have modified the bathing itineraries. In our case, the partial nature of the archaeological evidence means it is impossible to make an overall evaluation of each of the changes and, moreover, we do not have sufficient stratigraphic evidence to date them (Section 3.2.5, Phase V of Sant Miquel Street). The renovation work of this period involved the walling up of the door between the southern apse of Area VII and the large *frigidarium* of Area V. This door was occupied by a small pool or a *labrum* facing towards Room V, thus breaking the itinerary and characteristic visual perspective of the imperial baths (figs. 41 and 45). Later, when this pool was no longer in use, the area marked by the two original fluted pilasters was walled in. To this we can add the adobe wall of the connecting door between Areas V and XI, and the displacement of the connecting door between Rooms IV and V. The floors in Rooms III, IV and V were completely or partially replaced with new floors of marble *crustae*, keeping to

the original level. Likewise, the walls of the central frigidarium were lined with the same material (section 4.6.1, mosaics 1, 2 and 9).

These actions were accompanied by the conversion of the tepidarium of Area IX into a *praefurnium*, in which a possible support for a water boiler is notable. Here, the theoretical hypocaust in this room was dismantled and the door to the frigidarium was walled up (Area XI). The installation of a furnace turned the room into an extension of the service corridor and also involved walling up the connecting door to the caldarium. These actions allow us to put forward the hypothesis that the apsidal annex was turned into an *alveus* incorporated into the large caldarium. The partial nature of the excavation does not allow us to confirm this view and it only remains to note the fact that in the stratigraphic cross section left by one of the storage cellars we can see the remains of stone *pilae*, whereas the original *pilae* documented below one of the rectangular *alveus* are made of pottery. In the itinerary of this new phase the entrance to the caldarium is unclear. The adobe wall of the door that led to the frigidarium and the existence of a furnace in Room IX mean that the original accesses could not be used. We have to consider the possibility, although uncorroborated by the current data, that after these changes in structure and itinerary, the symmetrical imperial baths route was no longer used. As a consequence, it would only have been possible to enter the caldarium from the eastern side.

As far as Area III is concerned, this renovation involved sealing up the drains and, by inference, removing the latrines. The partial repaving of the area with marble *crustae* suggests a temporary coetaneousness with respect to the other reforms and also a decorative homogenisation. The new use of the room may have been as an *apodyterium*, since in many imperial baths the *natatio* is flanked by *apodyteria*. This can be seen in Hadrian's Baths in Leptis Magna, the Antonine Baths of Carthage, the large northern baths of Thamugadi, the large eastern baths of Mactaris, and the large southern baths of Cuicul.

2.2 The Architectural Reconstruction
César A. Pociña

Having studied the architectural areas and decorative elements, both architectural and mosaic, we have to integrate the data from both sides. This is the only way we can achieve an overall view of the architecture of the complex. To carry out this integration we employed 3D computer restoration techniques, since they allow you to easily check working hypotheses and also to produce much more comprehensible results than with graphical representations. It also makes it possible to show non-specialists a more easily understood depiction of the architectural reality of a building.[217] In order to reconstruct the building we had to choose a specific phase, as the complex was in use over a long period of time and therefore underwent various modifications, the scope of which we are unable to systemise. We have therefore chosen the original thermae building, Phase IV, as our reconstruction period, since that phase is the easiest to identify and reconstruct.

The working process was divided into different phases. The first was to digitalise the archaeological plans drawn at the excavation on a scale of 1:20. Once we had the digital and vectorial base plan, the building was made into a 3D image. This consisted of converting the pencil or ink drawings into a vectorial image file. In this way we were able to obtain a basic plan of the whole complex, which was exportable to other 3D image processing programmes. The full reconstruction of the thermae complex plan was achieved by comparing it to other thermae around the Empire, as discussed in Section 5.2.1.

Once we had established the plan, the second phase consisted of reconstructing the total volumes of the recovered archaeological elements, particularly the columns.[218] To do this we took those measurements we considered to be determining factors needed to establish the proportions between the various parts, and consequently the overall dimensions.[219] To carry out this task it was essential to compare the normal proportions used in Roman architecture, as recorded by Vitruvius in his ten books on architecture (specifically, books 3 and 4).

This option posed many problems, the most important of which was the difference in time between when Vitruvius was writing and the period in which the baths were built. Despite this discrepancy, various studies[220] show us that *a grosso modo* the same proportionality was maintained throughout the period of the Empire, with few changes. Another possibility was a direct comparison with preserved architectural parallels of the same chronology. The difficulty of this process lies in the fact that many of the elements have only been preserved fragmentarily, and have been reconstructed according to Vitruvian criteria, or the

217 For the same reason we quote as examples the reconstructions of the baths of Baetulo (Badalona, Barcelona province) (Comas *et alii* 2000, 431), Mataró (Bayés 2001), Gijón (Fernández/Jiménez 1998), Caracalla in Roma (Illensee 1997, Matthews 2003), Xanten, (Rank 1995), Valesio (Kosian 2003), Leptis Magna, (Rattenbury 1991) and Arles (Potier 2003).

218 Elements 4, 5 and 7 in Section 4.6.1.

219 This same system was used to reconstruct the Baths of Caracalla (see Delaine 1997 and, in computerised reconstruction, Illenser 1997, Matthews 2003).

220 The Corinthian order is the most commonly studied and has been the subject of various research works. We consider noteworthy those of Wilson Jones (1989 and 1991) and Gros (see his summary in Gros 2002, 470-503).

condition of the publication, sometimes non-existent, does not allow them to be compared. On the other hand, when it came to choosing parallels, apart from the chronology, we had to add other coincidental elements, such as whether we were dealing with the same type of building. We therefore opted to apply the Vitruvian proportions, while accepting the possible inaccuracies inherent in this method, and to digitalise them adding the missing parts.

We were unable to assign a definite position for any of the preserved columns, as none of them was found *in situ*. Nevertheless, as we will see in the description of Room I, two different types of columns were attributed to a specific area using indicators such as their position or size. In certain parts, for example in the *caldarium*, we found ourselves obliged to completely reconstruct the columns, despite not having any indicators of which specific type was used.

For reconstructing the height of the various rooms or buildings that made up the baths complex, we had to take note of various types of evidence, such as the thickness of the walls, the proportions between the width and height of the rooms (particularly the rooms with cupolas or vaulted ceilings), and the dimensions of the columns. These parameters were compared with known architectural parallels, although they are also often hypothetical. The roofs were reconstructed taking into account the monumentality of the building, the functional and structural necessities, and the "standardised" solutions used in this type of building around the Empire.[221] Other construction details, such as the architectural decoration, the configuration of the partition walls, etc., are of necessity hypothetical, given that the condition of preservation of the remains is in most places no more than half a metre above floor level. We have chosen only to depict those elements needed to help understand the layout of certain rooms or aspects such as the lighting, and we dispensed with other secondary elements, the reconstruction of which is much more complicated. This circumstance led us to choose the commonest options found in the architectural parallels, while remaining aware that we are dealing with elements with a configuration that could be quite diverse.

Taking into account all these questions, we drew up a proposed reconstruction of the volumes of the baths complex. It was a task that surpassed the purely archaeological research objectives, as we present interpretive elements that are closer to the field of hypothesis than that of empirical ratification. That notwithstanding, in this study of the thermae we did not wish to dispense with the elaboration of reconstructive proposals, which are in many aspects questionable and currently difficult to corroborate or refute, to make the magnitude and monumentality of a public building such as this more understandable and intelligible. We believed that it would be positive to present, together with the results of the scientific investigation, a more educational, virtual interpretation than we would have had from seeing the thermae in the original condition. Therefore, this publication makes new proposals and contributions to the educational and museographic discourse currently being undertaken by other institutions in Tarragona. That is the basic objective of this section.

The following is an itinerary around the various rooms that make up the thermal baths complex, following the order established in the descriptive section.

Area I: As has already been shown in the corresponding chapter, the features of Area I allow us to define it as the *basilica thermarum*. The first noteworthy aspect is the size of the room, with a preserved width of 18 metres and reconstructed length of 15.6 metres. The total resulting reconstructed area is 280 square metres. It is, therefore, the largest room in the baths complex. This whole area lacks compartmentalisation walls to separate the different areas and must therefore have been a large, multi-purpose area.[222] Despite this, on the flooring we can see various ornamental configurations and a pool with a decorated bottom and steps descending into it. Another remarkable factor to take into account is the presence at regular intervals of rectangular-shaped foundations, which can be interpreted as column foundations or stylobates. These columns and the differences in paving mark a theoretical division of the hall into five parallel sections that do not affect the internal movement of people within the area.

Armed with this data, we can make parallels with the same type of area in many of the large thermae complexes of the Imperial period. It is one of the so-called *basilicae thermarum*.[223] Such buildings consisted of halls with a higher central section, surrounded by areas of a lower height. The resulting configuration is similar to that of the judicial basilicas, which is why researchers chose that name for them. The problem posed by these buildings is that it is unclear whether they really were basilica-type constructions or whether they could have been linked to the palaestrae, in other words, buildings in which a courtyard or central strip

221 In general, we have used scientific summaries dealing with the sphere of Roman thermal baths, such as Yëgul 1992, Heinz 1983, Gros 1996, Nielsen 1990, as well as more specific studies, such as Delaine 1997.

222 A lively, although somewhat literary, description of the activities carried out in these areas can be read in Malissard 1996, 123.

223 Theoretically, the palaestra, a porticoed courtyard, surrounded by older thermae areas and progressively replaced by roofed buildings. Due to their size, they were built with the same type of roof as the basilicas, giving rise to the name. On this subject: Rook 1992, 25; Gros 1996, 411; Nielsen 1990, 162.

was surrounded by a perimeter of porticos on two or four sides. In our case, we think that the floors in *opus tessellatum*, with more or less complex decorative patterns, and the pool are more likely to mean a covered structure. A roof would protect the interior from adverse weather conditions and, therefore, permit various activities (exercising, strolling, conversation, etc.) that were normally undertaken in the open air on the palaestrae. On the other hand, it is also possible that there was a genuine open-air palaestra, possibly at both ends of the complex, as we have shown in Chapter 5.2.1.

Once we had opted for an enclosed building, we had a series of arguments and indications for reconstructing the morphology of this area. Thus, the central section has certain characteristics that differentiate it from the lateral sections. It can be seen that this is wider than the 3-metre-wide lateral sections, which is almost as great as the distance between the columns that run from east to west (approx. 3.5 m). At 4.5 m, the central section is 1.5 m wider. This difference provides us with the possibility that the central section was higher, maintaining the same height/width ratio. We have to consider that the central section was at least 1.5 m higher than the side sections. There are several indications of the presence of a step or bench skirting the pool situated in the middle of this room: the placement of the tesserae on the floor, the absence of paving in these areas, and the vestiges of the beginnings of the bench walls. Above this step are the columns that supported the central section. The presence of this element delimited the area occupied by the pool, although it did not prevent access to it. It could also be used as a bench to sit on around the pool (figs. 137-146).

The roof in this room was supported, as we have seen, by a series of columns that formed part of one or more architectural arrangements. In order to reconstruct them we took various factors into account.

In the first place we have Ionic order elements (bases and capitals), which, once restored according to Vitruvian practice, give columns with a height of 3.8 m. This height coincides well with the width of the sections, with a ratio of practically 1:1. For that reason, we chose these columns to re-establish the natural order of the lateral sections, since in Roman architecture it is quiet common for the portico section to have the geometric shape of a square.[224] In addition, the Ionic columns have sufficient structural solidity for the weight they would have needed to support, which would have been the wooden framework, the roof, and possibly a false ceiling of stucco or plaster. Secondly, we have a single, very well made, Asiatic Corinthian column, which was found in the pool located in the middle of this area. This led us to consider the possibility of an alternation in the decorative arrangement around the pool. We have reconstructed the columns according to the normal proportions for a Corinthian order. The height of the reconstructed column would be 60 to 80 cm lower than the Ionic order, although, in principle, for the ceilings to be at the correct level, they should have the same height. To try and solve this problem we opted to place the Corinthian order above the pool bench.[225] If we assigned the bench a height of approximately two feet, the norm in this type of structure, the difference in height would be eliminated, the entablatures could be placed at the same height and the wooden roof frame would be level.

Once the colonnades and the orders on the bases documented in the archaeological excavations had been reconstructed, the next problem was to define the type of ceiling. The height had to be greater in the central section, which is wider, in order to maintain the same proportions as in the side sections. One option would have been to hypothesise the presence of a second order superimposed above the Corinthian order. This would have provided us with a solution often seen in basilicas,[226] although it may have been too disproportionate in our case, particularly if we take into account the dimensions of Corinthian columns, as they would be too narrow to support a double order. For this reason, we opted for a more simple solution, which consisted of superimposing a masonry structure or wall on the Corinthian order entablature. The only purpose of this wall would have been to support the ceiling of the central section and would therefore not have had to bear large structural forces, a factor that gives us the possibility of including large windows, which would have reduced the overall weight and also served to allow daylight into the room. The resulting configuration for the central section is an architectural order raised above a perimeter bench around the central pool, the entablature of which would have been at the same height as those of the lateral sections. Above this order we have an upper area consisting of walls with large windows. This solution, much lighter and less complex than the double order, would provide plenty of daylight for the whole room and especially for the central section with the

224 Although they are not thermae buildings, see the proportionality of the porticos of various Roman *fora* in Pociña / Remolà 2000, 32 s.

225 It is quite normal to have colonnades at the edge of the pools in Roman baths. One of many examples is the *natatio* and central pool of the *tepidarium* in Hadrian's Baths at Leptis Magna (Heinz 1983, pages 30 and 96 figs. 20 and 98). This central pool also has a step similar to the one documented in our case (cf. Kretzscher 1983, fig. 110). Another very similar example is the pool in the *Apsidal Hall* B at the Civitavecchia Baths (Yëgul 1992, 114).

226 An interesting compilation of plans and sections of various basilical buildings can be found in Marta 1990, 61 s. and 130 s. We can see the diverse solutions employed for leaving openings for windows to allow daylight to enter in the additional height of the central section. See also Gros 1996.

pool. A similar solution is often found in the central sections of basilicas, which are wider and higher than the lateral sections. This difference in height means the roofs were stepped, with the roof of the central section being higher than the others. The step allowed for the placement of windows to let daylight into the building.

As far as the floors were concerned, the central section can be distinguished from the rest by its more elaborate mosaics and by the pool. This difference marks both an axial route around the room and a certain superior hierarchical order with respect to the other sections of the hall, which, as we saw before, had a lower ceiling. This was maintained, as before, when it came to choosing the architectural orders, with a more decorative order (Asiatic Corinthian) and not such fine materials as in the central section. Finally, we have evidence that the northernmost section was possibly an *apodyterium* or changing room. It has a masonry bench adjoining the northern enclosing wall of the room and what appears to evidence of another between the columns that separated it from the contiguous section. Likewise, the flooring has a red decorative strip that is not apparent in the other sections. We have added these contiguous benches in the reconstruction. In order to maintain the proportionality of the columns, without having to raise the height of the ceiling, we opted to incorporate the base in the colonnade bench. We chose this option in order to maintain the unity of style in the roof support elements, despite the fact that the resulting configuration may appear somewhat strange. The other options we considered would have meant breaking with this unity of style or isolating the northern section.

Areas II-IV: Between this *basilica thermarum* and the central body of the thermae complex, where the central axis and the *frigidarium* and *caldarium* must have been located, there is a series of smaller chambers used for complementary purposes. These rooms are linked along an axial plan that corresponds to the axis of the entrance to the building (figs. 137 and 138).

Thus, on the eastern side of the thermae complex there is a door that gives access from a narrow street or *angiportus* (II). Just inside this door and to the left of the entrance passage there is a small room identified as one of the latrines (III). This location is common in thermal baths, as people often entered the baths only to use the latrines (Nielsen 1990, 163). Inside the room we have documented the typical latrine drainage configuration. The difficulty is that the changes made in Phase V have considerably altered this area, which is why we chose to reconstruct here the "standard" latrine layout, in accordance with those most commonly found in this type of building in Roman times. Room IV, located between the *basilica thermarum* and the central *frigidarium*, has also been interpreted as a frigidarium. We have given these two chambers a separate roof and an access passage, in view of the large difference between the roof of the *basilica thermarum* and that of the *frigidarium*. Given the size and location of these rooms, we opted for a simple, typical gable roof, supported on the lateral walls. With respect to lighting, latrines are not normally considered to need a lot of light, so a small opening or window onto the street, which would also have served to air the room, would have been sufficient. As far as Room IV is concerned, its small size and proximity to two well-lit areas meant that it would not have needed a lot of light. It could therefore have been lit by a window giving onto the tympanum of the roof.

Areas V-VI: Alongside the two rooms described above there is a large, rectangular shaped room, some 9.6 m wide and 11 m long. It is delimited by a wall measuring approximately two Roman feet (60 cm). This room, identified from its features as a *frigidarium*, has an adjoining space (Room VI), thought to be a *natatio*. The final configuration of the room was reconstructed by axial analogy, both in an east-west and in a north-south direction. The walls that make up the room have features that communicate them with the adjoining areas: to the south the *caldarium*, to the east and west with annexes to the two *basilicae thermarum*, and to the north with the *natatio* (figs. 137, 140, 141 and 144).

The wall to the south has a large edicule, framed by two large pilasters with fluted striations on the front and sides, which give onto the interior and divide the wall into three parts of a similar width. This allows us to suggest that this room was a visually divided into three segments of an equal width, a design commonly found in thermae *frigidaria*. In this edicule there was a smaller door that led to the caldarium in Area VII.

The eastern and western walls had doors that were not centred with respect to the walls in which they opened, but with respect to the contiguous rooms.[227] This displacement made it necessary to align these doors to the circulation axis located in the central section of the *basilica thermarum* (fig. 139). The original entrance, therefore, marked a transversal circulation that began at the two steps of the *piscina frigidaria* in the *basilica thermarum*, crossed the mosaic of the labyrinth and the room before the *frigidarium* until it reached the centre of the *frigidarium*, where it crossed

227 This eccentric position with reference to the door is not unusual. It can bee seen, for example, in one of the rooms of the larger baths at Villa Adriana (Tivoli, Italy) (cf. Ward Perkins1989, 96). We can see the disproportion between the height of the walls and the small size of the door.

the axial and longitudinal *caldarium-frigidarium-natatio* route. Remember that, as we have proposed the possibility of two thermal basilicas, this axis would have joined up with another identical one beginning in the other basilica.

Finally, on the northern wall there was a communicating door with a rectangular area, which we have identified as a pool (*natatio*). Although this has been very badly damaged by contemporary construction work, we have various elements that allow us to reconstruct it. On the one hand, we have identified the drainage channel, which provides us with an approximation of the lower level and confirms the proposed interpretation. On the other hand, we were able to see a section of the access steps from the *frigidarium*, with the imprints of various floorings and waterproof linings that allowed us to hypothesise an access via a traditional bench/steps system (fig. 43). Once we had identified this area as an adjoining pool,[228] we had to reconstruct the configuration of the wall that bordered the *frigidarium*. We proposed, again by axial analogy, that the visual configuration divided into three sections that we observed in the bordering southern wall, would have continued on this wall. Thus, the communication with the cold pool or *natatio* was established by the opening of a large arch, again delimited by pilasters identical to those of the edicule. This gives a unity of style to the two facing walls of the room.

This reconstruction allows us to establish a main circulation route round the baths beginning with the *caldarium*, passing through an arch to the *frigidarium* and from this room, passing through a similar arch, to the *natatio*.[229] This axis crossed another coming from the central section of the thermae basilicas. Therefore, it is clear that this room is the convergence point for all the circulation axes of the baths complex and therefore the most important room. This fact explains its large size and the fact that it is the room with the highest roof.

As far as the reconstruction of the roofing is concerned, we have to take into account the features of the documented elements and the known architectural parallels for this type of room (fig. 147). In the first place, we could propose a simple solution of three parallel barrel vaults, running from north to south and supported by two diaphragm arches on four facing pilasters located on the northern and southern walls. These pilasters would be those situated on both sides of the edicule (*vid. supra*). It is a curious solution that can be seen in the baths of Umaiad, in Qusaïr Amra (Jordan[230]). The advantages are a relatively simple construction and a low weight. The roof is built with three independent barrel vaults for each room. The outer ones are supported by the northern and southern exterior walls and the two arches, while the central one is completely supported by the diaphragm arches. The windows in the tympana of the vaults and the openings in the lateral walls allowed daylight into the room. Neither solution allows for large partition walls and the lighting was probably not very homogeneous. Neither is it a very common architectural solution. Likewise, it would have been an area with a fairly low roof and a ceiling subdivided into three parts.

Having ruled out that possibility, we then started to consider the intersection of the three vaults with another one perpendicular to the width of the room, resulting in three ribbed vaults. This second solution is possibly that most frequently found in the early Roman thermae (Caracalla and Diocletian in Rome, Hadrian's Baths in Leptis Magna, the Antonine Baths in Carthage, etc.). The problem posed by this system is that the width of the vault must be much greater than that of the three intersected vaults. Likewise, in the aforementioned parallel examples, the width of the narrow side is the same or similar to each of the three partitions. The result for these examples is for three independent ribbed vaults. In our case, the room is rectangular, built with only a small difference between the longer and the shorter sides. The intersection of the transversal vault with each of the three longitudinal ones would have resulted in a large vault, to which six smaller transversal vaults, that would barely have stood out, would have been adjoined. We do not know of any other example with this solution. The closest, although different, equivalent is the large vault that would have covered the main pool in the Roman thermae of Bath, although that did not have the adjoining vaults. The balance of stresses of this solution involves the need for two diaphragm arches, as the lateral vaults possibly only structurally allowed the opening of partition walls for lighting and made it necessary to raise the height of the room at the north and south ends.

Despite the almost square shape of the room, the configuration of the perimeter walls leads us rule out a third option consisting of a cupola roof. The walls of the frigidarium room are thinner than those of the *caldarium*, which support the system of cupolas and

228 A very similar solution, except for the logical distances, is that of the *natatio* of the Caracalla Baths in Rome, which adjoins the *frigidarium* and is entered via three large arches (see the magnificent reconstruction by Kevin Gould in Delaine 1997, *frontispiece* 1).

229 An almost identical configuration can be seen at the Antonine Baths in Carthage, as shown in the plan and section by A. Lézine, reproduced in Gros 1996, page 411.

230 This is an almost unique solution (see Whatling 2003). It is a similar configuration to the thermal baths with annexed rooms with in-line barrel vault ceilings, although they do not cover the same area.

vaults that cover this room. With a vault width of 60 cm and a height of 9.60 cm, the height/width ratio would be 16. This seems too high a proportion, if we compare it to the normal proportions of Roman cupolas.[231] This type of solution, with a hemispherical cupola supported by four pendentives on the corners, would have needed reinforcement to counteract the structural stresses. On the other hand, the cupolas in thermal baths are more normally found in the heated areas.

After ruling out in principle those three possibilities, we opted for a fourth hypothesis consisting of a roof of ribbed vaults resulting from the intersection of two barrel vaults.[232] This solution allowed us to open large partitions for daylight on the four sides, as the loads are borne by the corners (Giuliani 1998, 93). The proportions of this construction allow us to raise the *frigidarium* to a higher level than the peripheral buildings, which guarantees daylight for the room. If we deduct the height of the section corresponding to the vault, we would have a height/width ratio for the walls of 1:8, a proportion lower than the maximums identified in Roman era constructions.[233] On the other hand, it was normal for bath complexes to be planned as one unit, taking into account the balance of the dynamic forces,[234] and we can therefore imagine that a good part of the weight of the roof would have been dissipated among the structures of the adjoining rooms and possibly on the architectural orders placed in the corners.

We established a ratio of 1:1 with respect to the width of the room and 1:2 for the radius of the ceiling vaults. We selected this ratio from the standard heights used in the Baths of Caracalla (Delaine 1997, 56 s.), as we considered that a ratio of 1:1 results in a room that stands out from the lateral constructions, which allows it to be well lit. With this proportion, the height is very similar to that of the *caldarium*, which made it possible to place an exterior cornice at the same height and provide the whole central baths complex with a unified style. The lighting of the room would be guaranteed through the large windows in the vault tympanums. For strictly aesthetic reasons, in the 3-D we divided these windows into three strips separated by two masonry pillars that support a structure of small rhomboidal panes of glass secured by a wooden structure. This hypothetical solution is recurrent in 3-D reconstructions of thermal buildings (fig. 141).[235] With respect to the exterior of the vaults, there are two possibilities. The first consists of the absence of a tiled roof, which means that the water was drained off by the curved outer surface of the vaults themselves. This solution is common in dry climates, such as North Africa[236] or the Near East. The other solution is to superimpose a tiled roof sloping in four directions. We chose this solution of placing a tiled roof on the vaults, as it is a configuration often found in thermae buildings (fig. 149).[237]

Area VII: This room has a complex configuration, of which only three of the corners and one of the longer sides have been preserved. We established a hypothesis based on architectural parallels and by duplicating the preserved elements along the longitudinal and transversal axes. It has a rectangular shape with two adjoining semicircular ediculae on the shorter sides and two rectangular rooms on the longer sides. We have been unable to identify the type of flooring in the room. We were able to determine that the floor was raised to allow for underfloor heating (*hypocaustum*), as we found evidence and the imprints of the *pilae* of the *suspensura*. This system used the normal method of raising the floor on large *bipedales* bricks resting on pillars (*pilae*) of bricks (*bessales*). The walls were heated by an air chamber system (*concameratio*) achieved with stone separators that supported the wall facings. We can see the imprints of these separators on the wall of the semicircular edicule (fig. 45).

Adjoining the wall of the room we identified a service gallery and evidence of two heating furnaces. The location of one, just below one of the rectangular spaces situated on the longer sides of the *caldarium*, leads us to believe that these areas were possibly heated pools. This option is corroborated by various architectural parallels that show *caldaria* as complex layouts formed by annexed pools (fig. 143).[238]

The fact that these areas could have been heated pools made us mark a differentiation from the main room, which consists of a group of steps that define the pool and serve as an access to it, together with a decorative colonnade that visually separated the areas. This type of colonnade is often used to distinguish between dif-

231 For an in-depth study of various Roman cupolas, see Pelliccioni 1986, 44 s.
232 This solution is mainly found in the North African baths, such as Cuicul (Djèmila) or C.C. Caesarea (Cherchel) (Gros 1996, 410).
233 Some times greater than 1:12, which is considered the highest proportion at which stability can be guaranteed (Giuliani 1998, 106).
234 For an analysis of the stresses present in a vault, cf. Pellicioni 1986, 51 s.; Giuliani 1998, 75.
235 An analysis of the windows used in thermal baths buildings can be found in Broise 1988.
236 Ancient art often depicts these vaults and cupolas as a characteristic and representative element of thermal baths. On this subject see the study included in López Monteagudo 1997. Likewise, depictions of central European thermae buildings clearly show a superimposed tiled roof, such as that depicted on the sarcophagus of Simpelveldt (Holland) (Rook 1992, fig. 22, page 329).
237 Leaving aside the numerous reconstructions that often use this solution, we can see this configuration in the Diocletian Baths in Rome. (See the aerial picture of the ceilings in Heinz 1983, 161 fig. 164.)
238 See, for example, the comparative figure for the main African thermal baths in Gros 1996, 410, and particularly the baths of Caesarea (Cherchel). The configuration of two rectangular lateral pools and one semicircular pool is very similar to that which we propose for our complex.

ferent areas of the baths, more for decorative reasons than for a structural or functional purpose.[239] By analogy with other thermae complexes, we decided to locate another pool in the northern semicircular apse. For unity of style, again absolutely hypothetically, we employed the same system of steps and colonnade[240] as in the lateral pools (fig. 148).

For the roof we considered the most canonical method of covering the semicircular rooms to be that of quarter-circle cupolas.[241] The rest of the building, of an approximately rectangular shape, gave us various options, of which the simplest was a ribbed vault. This allows for large partition walls on the four sides of the room, as the weight would have been borne mainly by the corners of the building and the bodies of the adjoining rooms, by means of a system of load bearing distribution from the main roof to the secondary ones. More for aesthetic than for functional reasons, we placed two columns in the corners that coincide with the ribs of the vault.[242] These columns also serve to delimit and frame the door leading to the rooms located at the sides of the building (figs. 141 I 149).

Area VIII: This room can be identified as a service corridor, located below the floor of the thermae. It is elongated, with entrance doors built in stone arches on its short sides. The ceiling must have been quite low, as can be seen from the holes made for the joists that held up the floor. Connected to this use as a service corridor, the side door that leads to *caldarium* has been identified as a heating furnace for one of the *alvei* located on the longer sides of this room. This furnace had an inclined surface that helped the hot air to circulate and made it easier to stoke and clean. All we needed to do to reconstruct it was to add the floor of the room above, as the other elements had been preserved. The height of this room can be measured from the aforementioned marks. Unfortunately, we do not have any data to allow us to deduce the configuration of the room above the floor of this corridor.

Area IX: This is a small square-shaped area. It is connected to the *frigidarium* by a narrow door and to the caldarium by an access located in the corner. There is some doubt as to its use, although it may have been a *tepidarium*. The original configuration has been considerably changed by later alterations that consisted of installing a furnace to heat one of the semicircular ediculae of the *caldarium*. We do not have enough evidence to reconstruct the roof. We therefore decided to join it to that of the buildings located between the *caldarium-frigidarium-natatio* axis and the *basilica thermarum*. This means we defined a continuous roof for the latrines, Room IV and Room IX.

Final Assessment: The reconstruction of the various parts of the building produces a result that we define as providing us with an idea of the original configuration of this baths complex. In the first place, the monumentality of the building is obvious. It covers a very large area and is possibly much higher than most of the surrounding buildings, with the exception of the Theatre, which, by that time, was no longer in use. This meant that it could be seen from a long way off, particularly from the vessels sailing into port, for which it would have been a landmark. This is also the case with other large port baths complexes, such as those of Carthage or Leptis Magna.

Secondly, we have to include this building in the prototype known as imperial type. This identification has been made clear throughout this book, as well as the presence of well-defined circulation axes and a standard location of the various rooms that make up this type of baths. Therefore, the reconstructed plan of the Sant Miquel Street thermae has many similarities with other comparable complexes of the same period, particularly with the North African examples. In our reconstruction of the architectural volumes, we have opted for maintaining this resemblance and we have therefore chosen the most common architectural solutions, after checking that they were architecturally viable. The final result gives us a "virtual" building with a configuration extremely similar to the aforementioned complexes, from which it differs in architectural details, but shares the well-defined general patterns.

Returning to the overall configuration resulting from our reconstruction, one of the most outstanding features within the layout of each of the spaces is the large area embraced by the thermae basilicas. These made it possible to accommodate a large number of people taking part in many different recreational activities, such as gymnastics, ball games, etc. It could be surmised that these palestrae were the busiest parts of the baths complex and would have been the most popular places for daily periods of leisure, more so than other less fre-

239 An very similar example to our proposal can be seen in the heated rooms of the large baths at Hadrian's Villa (Tivoli, Italy) (Heinz 1983, 81). See also a similar pool in the *frigidarium* of the baths of Neptune (Ostia) (Yëgul 1992, 70).

240 This system is characteristic of this type of room. See for example the definition of *alveus* in the appendix/glossary of words referring to thermae in Nielsen 1990. Thus, two of the names given to these pools, *descensio* and *solium*, were directly related to the presence of these steps for entering the pool (Malissard 1996, 114). A pool similar to the one we suggest, although without columns due to its small size, is found at the end of the *caldarium* in the baths of the Forum of Herculaneum (Heinz, 1983, 73 and 74). Even more similar, although greatly reconstructed, is the configuration of the semicircular *alveus* in the thermae of Trier (see Krencker's reconstruction in Yëgul 1992, 372).

241 Except for all the distances, this is the solution taken in the *scholae labri* of the *caldaria* of the baths of the *fora* in Pompeii (Heinz 1983, 63) and Herculaneum (Heinz 1983, 79).

242 The use of adjoining columns with an aesthetic rather than a functional purpose is characteristic of the large imperial baths complexes. Paradigmatic examples are the *frigidarium* of the baths of Diocletian (see Heinz 1983, 115, figure 119,) and that of the baths of Caracalla (Heinz 1983, 133, figure 140).

quented venues, such as the Circus or the Amphitheatre.

Likewise, the central part of the complex, defined by the *caldarium-frigidarium-natatio* axis, is, without doubt, intentionally the most monumental part. The way the different room heights are planned produces ascending axes in line with the relative importance of the area. Thus, on the axis parallel to the coast, the highest point is located on the vertex of the *frigidarium*, from where its descends to the roof of the two sections occupied by several different rooms, and from there goes to the roof of the *basilica thermarum*. In this building, following this visual layout, the central section (the most important) is higher than the lateral sections. On the axis intersecting the coast, we can see a relative equality between the *caldarium* and the *frigidarium* and a descent to the area of the *natatio*. It has to be borne in mind that the rest of the rooms located around the *caldarium*, that we have not been able to restore, maintain this visual gradation.

It is very interesting to see how this complicated collection of buildings looks in its entirety when superimposed against the scenic backdrop of the rock escarpment lined by the containing walls. This superimposition incorporates the building into the overall scenic framework of the city as a whole. We are dealing here with the well-known monumentalisation programme begun in the Flavian period that divided the city and its different quarters into a landscape of several superimposed terraces. The layout began with the imperial worship area, on an upper terrace of religious buildings. It continued with another larger terrace with administrative and representational functions (the so-called Provincial Forum), and ended in an area dedicated to leisure activities, with the Circus and later the Amphitheatre. On a lower level the largest area was mainly occupied by housing. This was slightly above the level of the coast on a natural escarpment. Finally, the thermae complex formed part of a last terrace that was initially occupied only by port buildings, some of which were progressively replaced by representational buildings mainly used for leisure and free time, such as the Theatre and the thermae.

2.3 The *Thermae* of Sant Miquel Street and Imperial Type Baths

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From the 2nd century AD thermae buildings became the main reference point in urban facilities and reached the zenith of their architectural expression with the imperial type baths. This phenomenon began in Rome, but soon spread throughout the Empire, especially with the work carried out under Domitian. The definition of the baths as an element of public or collective use fell to Agrippa. His thermae, although considered to have had little architectural influence, signified on a social level a change in the thermae tradition of the Late Republican era. During the period of Augustus many private baths were opened to the public and in Agrippa's baths the *voluptas* prevailed over the *utilitas*, relegating the role of Greek gymnastics to second place (cf. Zajac 1999, 102; Yegül 1992, 136-137). Agrippa's thermae were also the first time the imperial powers took on the construction of public baths. After that, various emperors developed this architectural model, with increasing monumentalisation and luxury, while at the same time their socialisation became a growing phenomenon. Thus, in an act of megalomania, the building work promoted by the emperors revitalised the thermae built by their predecessors.[243]

The architectural homogeneity seen in the imperial thermae is a consequence of common requirements in terms of the itinerary around the baths and the positioning of the different rooms, as well as the logistic needs and the possibilities and factors determined by the available construction techniques. The reign of Hadrian in the 2nd century AD is considered to be the high point of technological development and from this time on baths were built from standardised plans in the provinces of the Empire.[244] It was an architectural model for thermae that, although applied arbitrarily in each city, maintained certain common features that help us to determine the constructional parameters of the building, their significance within an urban setting and, finally, to relate it to the influence of the techniques, forms, and decorative tastes of the metropolis. In other words, the point to which the tastes imposed by Rome were imitated or adopted.

The building of the Tarraco imperial baths responds to this phenomenon. Although the construction of an imperial thermae complex depended on the available funds, the urban location, and the technical skill of the local builders, we can postulate a series of typological considerations with the other imperial baths around the Empire. The plan of the Tarraco baths shows similarities, on a smaller scale, to the grand

243 The *Thermae* were products of a government pursuing a policy of public legitimation, rather than a policy of public health. The recognition that baths did serve social needs was not absent from the minds of those who furnished them. More importantly, however, baths belonged within the ancient system of euergetism. The literary evidence betrays an awareness that the baths were a way of making Roman and imperial values concrete. While legitimising and restating the power of the emperor, they were also a potent means of gratifying the people. (Zajac 1999, 105).
"On the emperor's part, there was also no doubt an element of megalomania involved, as well as a desire for a sort of immortality, since buildings traditionally retained the builder's name." (Fagan 2002, 119).

244 The study of which presents a typological scheme defined by Krencker in 1929, which is still used today (Nielsen 1990, Yegül 1992, Fernández / Garcia 1999, Fernández *et alii* 2000, Thébert 2003).

imperial baths of the metropolises, with a greater resemblance to the baths of Trajan and Caracalla in terms of the location of rooms. Overall, they bear the greatest similarity to the North African imperial type baths, where the large number of preserved and studied establishments allows us to better see the wide variety of plans, the diachronic and architectural evolution, and how they were adapted to the determinants imposed in each case by using particular solutions.[245]

The first North African imperial type baths date from the Antonine period. They are the thermae of Leptis Magna, built under the governorship of Hadrian, the Antonine baths of Carthage, built during the reign of Antoninus Pius, the large eastern baths of Thamugadi, built during the first half of the 2nd century AD, the southern baths of Cuicul, from the period of Commodus, and the large baths of the legionary camp of Lambaesis, built in the middle of the 2nd century AD. This intensive activity was determined by the Emperor Hadrian's desire to consolidate the African *limes* and protect it from the incursions of nomadic peoples, and by the later establishment of the Severan dynasty's rule over the Empire. It was under the rule of the Severi that the largest imperial baths were built in the cities of North Africa, as can be seen from the large eastern baths of Mactaris, built during the period of Septimus Severus, the large western baths of Cherchel, the large baths of Lambaesis at Palais du Légat, and the large northern baths of Thamugadi, all three of which were built between the end of the 2nd century and the first years of the 3rd century. Other thermae were refurbished, such as the southern baths of Hippo Regius, restored in 198, the baths of Hadrian in Leptis Magna and the baths of the legionary camp of Lambaesis. This period also saw the construction of many semi-symmetrical type baths, a less monumental style than the imperial baths, examples of which include the Julia Memmia in Bulla Regia, the northern baths of Hippo Regius, the western baths of Thysdrus (El-Djem), and the summer baths at Thuburbo Majus.

With this current data, Rome and North Africa can be seen as the areas in which this type of public baths was most prolific. We know of other examples in the eastern provinces and, to a lesser extent, in the western provinces, for example, the thermae of Barbara at Trier (Gallia Belgica) and the Herculean thermae in Milan. In the case of the Iberian Peninsula, the find of the public baths in the port of Tarraco is exceptional, as it is only the second imperial type complex known in Hispania, the other being the baths of Los Arcos I at Clunia,[246] which have recently been re-studied and re-interpreted (cf. Palol 1994, Fernández Ochoa/García Entero 1999, Fernández Ochoa/Zarzalejos 2000).

Although this circumstance may be misrepresented by the absence of archaeological remains and the lack of finds, the epigraphic analysis carried out by G.G. Garran (2002) defines some coherent conclusions about the current archaeological situation. Eighty per cent of the commemorative inscriptions from public baths, whether they refer to the initial construction or to rebuilding and refurbishment, are concentrated in Italy and Africa. The rest are found in Gaul, Hispania, and Germania, in descending order. This ratio is maintained in the case of the title of the promoter of the building. Of 19 inscriptions relating to works instigated by emperors, 12 are found on the Italian Peninsula. There are 26 inscriptions referring to various representatives of the imperial administration —*praesides*, *proconsules*, etc.— and of these, 17 are found in Italy and 5 in North Africa.

In the light of current knowledge and the available epigraphical data, we have to ask ourselves whether the imperial type model of thermae architecture was applied exclusively in accordance with the availability of finance, given the cost of building and operating such establishments, or whether their introduction into the territories had propagandistic motives. This was clearly the intention of the grand imperial complexes built by the emperors in Rome, and in the case of North Africa, the political and economic context may have been a decisive factor in the introduction of the thermae, the construction of which would have been used as a tool of imperial propaganda.

According to this theory, the imperial type baths of Tarraco are an indication of the economic and social importance of the city. Moreover, the parallels established with the baths complexes of North Africa are further evidence for considering possible intensive

245 Neither should we forget some examples of thermal baths in Gaul that applied a symmetrical scheme with a duplication of axial elements, such as the baths of the Forum of Lugdunum Convenarum (Saint-Bertrand-de-Cominges), built in the 2nd century AD, the thermae of the festival sanctuary of Champlieu, the baths of Verdes and the first baths of Derventum. We also have to add the military and municipal baths with strictly symmetrical plans documented throughout the northwestern provinces and dated to the second half of the 1st century AD. For example, the baths at the camp of Vindonissa, the legion baths in Exeter, the baths of the *colonia* of Aventicum, and the baths of the legionary camp of Isca (Yegül 1992, 74-77).

246 Thermae built at the time of the emperor Tiberius that were monumentalised during the Flavian era and definitively transformed into imperial type baths in the Antonine period. As far as the morphology is concerned, access was from a semicircular, colonnaded porch at the southern end that gave onto an area of gardens flanked by two large, symmetrical, porticoed, quadrangular rooms —*basilicae thermarum*—. From here you passed through the respective symmetrical *apodyteria* via which you came to two large, also symmetric, *frigidaria*, with their respective pools placed at the northern ends. Then you entered the *tepidaria*, which were also symmetric, that converged in a rectangular heated room located on the central axis of the building —possibly the *unctorium*—, that gave way to the large rectangular *caldarium* with its respective *alvei*, which were also rectangular, on either side (Fernández Ochoa / García Entero 1999, 151).

relations between Tarraco and that geographical area. The typological similarity can also be seen in relation to the size of the thermae complex. The area attributed to the Tarraco baths (some 3,500 square metres) cannot be compared to the area covered by the imperial baths in Rome (between 4,500 and 38,500 square metres), nor with those of the east (between 5,000 and 11,000 square metres). On the other hand, their size does fit in with that of the large North African thermae, such as the large baths of Lambaesis, Thugga and Cuicul (Thébert 2003, 305-306). This relationship with the North African provinces can also be seen in other aspects. These influences are also evident in the monumentalisation phase of the baths of the villa of Callipolis, dated to around the end of the 2nd century and beginning of the 3rd (Macias 2000c). In material terms, commercial relations can be deduced from the ceramic contexts, epigraphical data, and even the hypothetical African origin of Bishop Fructuosus (cf. Aquilué 1992, Mayer/Rodà 1996).

2.4 The Chronology
Josep M. Macias

The dating of the baths can be established by looking at various indicators, each of which taken alone would be insufficient, but when analysed in conjunction with each other allow us to establish a hypothetical chronology in line with the typological features of the building and with the stylistic traits of the decorative elements and mosaic inscriptions.

As far as the study of the pottery is concerned, the stratigraphic evidence that clearly places the burial and obliteration at the end of the 2nd century or beginning of the 3rd, which represents the abandonment of the pre-thermae port installations (Phase III, Sections 3.2.3 and 3.3.4), is a *post quem* temporal limit for the construction of the baths. It is unclear, however, whether the dismantling of the buildings deduced from the presence of large amounts of building material was a direct result of a desire to build the new baths or whether it was due to another phenomenon that had nothing to do with the thermae construction project.

On the other hand, the building evidence directly related to the thermae (Phase IV) is very limited from the pottery (Section 4.1.3)- and numismatic (Section 4.3.2) points of view. Noteworthy items are an example of Lamb. 3c[1] in Terra Sigillata Africana A, a Keay 3b-type amphora, and a coin of Hadrian[247], dated between the 2nd and 3rd centuries AD and found beneath the mosaic of the exedra documented at Nos. 35-37 Sant Miquel Street (Fig. 10). For these reasons, the study of the architectural decorative elements and mosaics takes on an important role as a chronological indicator, as the analysis of the sculptures (Section 4.4), the presence of which is due to a phenomenon of *translatio*, and of the mosaic inscription (Section 4.5), does not provide us with any concise temporal data. For this reason, we have fallen back on the stylistic analysis of the Ionic and Corinthian capitals, as well as that of the wall mosaic of the labyrinth with the border. The stylistic study gives us a date of the 3rd century, probably the first half (Section 4.6.1).

All this data indicates the end of the 2nd century and probably the first half of the 3rd century for the construction of the Sant Miquel Street thermae. This proposal is in line with the general patterns of construction or renovation of the type of baths known as *imperial type*. During this period, numerous public baths were built in North Africa (Bulla Regia, Mactaris, Thamugadi, etc.), giving us an idea of the way Roman society liked to spend its leisure time (Section 5.2.3).

As far as the renovations to the thermae complex are concerned, we do not have any useful material elements to be able to define a more precise chronology. And as to when they were finally abandoned, we can only say that the small amount of pottery found indicates some time during the first half of the 5th century (Section 4.1.5). Moreover, it is important to note the find of coins depicting Gratia and Constantius II, dating from between the middle and third quarter of the 4th century, above the exedra mosaic of Nos. 35 and 37 Sant Miquel Street, although these may be residual.

3. The Tarraco Thermae. New Contributions
Josep M. Macias

The thermae culture of Tarraco, seen as an architectural and social phenomenon, is the specific manifestation of a homogeneous, and, at the same time, homogenising, trait of Roman society. Our current ignorance of the Republican and early imperial baths in Tarragona is a scientific lacuna that, to a certain extent, has been minimised by the recent discoveries made in the city and its territory.[248] The public baths in Sant Miquel Street and the numerous private *balnea* we know of from the 3rd century onward show how common thermae were in Tarraco. From the demographic and economic point of view, the data we now have becomes ever more consistent and in proportion to the city's status as capital of the *provincia Hispania Tarraconensis*.

247 According to the documentation in the National Archaeological Museum of Tarragona.
248 Concerning this aspect see Mar *et alii* 1993a, Ruiz de Arbulo 2000 and Adserias *et alii* 2002.

Before the Sant Miquel Street thermae were built, there would have been urban baths in Tarraco, even though the archaeological evidence is not completely conclusive. Therefore, we do not have enough elements to clearly specify whether the baths we have discovered were for public or private use. We have no evidence of the existence of baths during the Republican period, and the various thermae pre-dating the 3rd century public complex have not provided enough evidence for them to be archaeologically dated. In historiographic terms, we should mention some possible large thermae located in the area of Méndez Núñez Street (Massó/Menchón 1991), others in Sant Agustí Street (Tobías 2000), and some that were destroyed by stone quarrying in the 19th century (López Vilar 1993). These are all intramural baths about which we have no detailed information.

Epigraphy provides us with evidence of the construction of some heated pools —*nymphae calidae* (CIL, II, 6102 = RIT 0694)— as well as of the therapeutic cold baths built by Augustus during his long period of convalescence in Tarraco (Gozalbes 1997). Neither of these provides a great deal of data. The former may have been a *laudatio funebris*, in which the charitable action of the deceased is emphasised in the construction of thermae. The nymphs could signify the personification of water and the term *calidas* is related to the artificial heating of the baths. It has also been suggested that the inscription indicates that the water occurs naturally and commemorates the construction of an urban spa (Díez de Velasco 1998, 100). There is currently nothing to suggest that this inscription refers to the construction of the baths that are the subject of this study, as has recently been pointed out (Andreu Pintado 2001, 293, n. 15). Another referent (CIL II, 4284 = RIT 0801) could be associated with a thermal complex of a private residence (Section 4.5, Gómez Pallarés 2000b, 121-122).

The finds made around the Theatre show evidence of two thermae complexes that are difficult to interpret. That located to the east of the Theatre (Section 3.4) could have been public baths, given the size of the structures and the area it appears to cover and judging by finds recently made at No. 7 Apodaca Street, as well as by the written testimony of M. Aleu from the mid-20th century (handwritten).

In the case of the thermae at No. 2 Dr. Zamenhoff Street (Section 3.1), the physical evidence determined by the excavations is very poor and insufficient to establish whether they were public or private. We are aware of this lack and of the hypothetical nature of the conclusions. Despite this, however, we consider by way of a future hypothesis, that new historical information and finds could determine, through the lost mosaic of Neptune[249] and that found in the area of the steps on Castaños Street,[250] the hypothetical presence of larger thermae than that excavated at No. 2 Dr. Zamenhoff Street. The depictions of Neptune are also a constant feature in port city thermae such as those of Ostia, Puteoli and Terracina (Jouffroy 1986, 95), and in private baths, as in the mosaic in the House of the Labyrinth in Italy. It is a characteristic motif in mosaic iconography that, as in the case of that of Ostia, is almost always associated with thermae elements. Finally, the location of the baths on the crest line of the escarpment gives the thermae building a pre-eminent place in the city landscape.

On the other hand, in the levels from the end of the 2nd century detected on the Sant Miquel Street site (Sections 3.2.3 and 4.1.2, Phase III) there are many marble wall-facing plaques. Moreover, the raw material comes from various different parts of the empire. This material is not from the lower baths, nor from the preceding *horreum*, but rather from their location at the foot of the promontory, possibly having been part of the decoration of the upper baths. The marble found in Phase III of Sant Miquel Street indicates a building highly decorated with imported marble. In the case of Tarraco, the chronology of the polychrome marble, already known in Rome from the second half of the 1st century BC, provides indirect chronological data referring to the period of construction or renovation of a socially important building. It was from the time of the emperor Hadrian that the production and inter-provincial trade of polychrome marble increased, most of it coming from the empire's eastern quarries. It was particularly used to decorate important public or private buildings in the cities.[251] For this reason, we believe that if a thermae complex had existed, it would have been built or renovated during the 2nd century AD. All these signs show that the thermae complex located in the area of Dr. Zamenhoff Street would have been architecturally and socially much more important than indicated by the archaeological finds at No. 2 of this street and, according to this data, we have to suggest the possibility —again as a working hypothesis— of the existence of another public complex that, due to its topographical posi-

249 The preserved descriptions (Chap. 2) situate the mosaic at the western end of the street in an area near the thermal baths and the steps in Castaños Street. They also point out that it is an iconographic variant in which Neptune is standing, holding a trident with his right hand. It is a Hellenistic-tradition thematic model for which we know of specific parallels in a villa in Sabadell and the Port House in Ostia (Duran 1993, 226). It should be recognised however that in those cases, the mosaics were in representational areas and not thermal baths.

250 The Castaños Street mosaic may have been the paving of a corridor and it has been dated to the first half of the 2nd century AD (Navarro 1979, 159). Moreover, near the mosaic a pedestal was identified with an inscription dated to the Flavian period or the first half of the 2nd century (RIT 168).

251 Examples of *africano*, *bardiglio di Carrara*, *breccia corallina*, *cipollino*, *portasanta*, *giallo antico*, etc. have been identified. On the subject of marble, cf. Pensabene 1998, 337; Mayer 1998; Pensabene 2002, 46; Lazzarini 2002.

tion, would have been linked to the areas adjoining the city forum. However, the question remains to be resolved of how these hypothetical public baths were integrated into the Roman walls that passed through this area, although it is possible that they were demolished at an earlier date (fig. 152).

The Sant Miquel Street public baths reflect, as do thermae in other parts of the Empire, the degree to which Roman architecture had developed. The thermae were built during the period of maximum development and at the social peak of this type of leisure facility. In the 2nd century AD public baths became Roman society's urban facility *par excellence*, buildings on which to experiment with the new imperial architectural techniques and around which the urban fabric was woven. Roman builders managed to support the vaults on foundations and buttresses, in such a way as to be able to modify the height of the roof and provide large openings (doors and windows) at the side to allow plenty of daylight to enter. After the 2nd century, especially following the architectural experimentation undertaken at Hadrian's villa, we reach a high point in an architecture that uses *opus caementicium* with the *lateres* as formwork. In this way they constructed buildings conceived as a unitary block in which cupolas and vaults were symmetrically juxtaposed, in such a way that the loads counteracted each other and they were able to build roofs for very large rooms with an abundance of daylight. The evolution of this technology meant that when the public baths were built in the port of Tarraco, the technical experience and architectural compositions were fully defined and disseminated throughout the Empire, as can be seen from the grand imperial thermae complexes built in the North African, Near Eastern and Western provinces.

On a sociological level we have to take into account the fact that the technological developments seen in public baths architecture were a response to a social demand that, from the 1st century on, bestowed supreme importance on the custom of bathing. This popular demand made it necessary to create large, structurally complex, multipurpose areas to accommodate a wide diversity of activities. Although initially the baths were used for personal hygiene, they quickly became a place for sports, entertainment, conversation, and cultural education. Their proliferation around the Empire can be thought of as cultural globalisation, i.e. a factor of permanent social cohesion with a much greater impact than that of the *ludi romani*, given that the baths were practically a daily activity.[252]

In Italy, for example, the public baths were considered an important part of social life and, after temples, were the most commonly found public buildings (DeLaine 1999b). From there the practice of bathing, either in private *balnea* or public[253] *thermae*, was exported around the Empire. Outside Italy, public baths proliferated, either because they were considered an element of urban prestige, or because their construction was popular with the citizens (Fagan 2002, 164-167). The people asked for them, not only because they were a place for leisure, but also because the public baths met their personal hygiene needs. This latter aspect is important, as the boom in thermae was due in part to the desire of the people to be able to enjoy the comforts and conveniences of the large public baths, in contrast to the discomforts of many private residences that were lacking even the basic minimum facilities of running water and latrines. The demographic increase and a greater mobility of the population, particularly in port cities and among persons of eastern origin, were also elements that influenced the social propagation[254] of bathing habits (Fagan 2002, 84) and caused sanitary problems due to the saturation of the baths (Fagan 2000).

As far as the ownership of and responsibility for the baths is concerned, we have to turn to the known inscription dedicated to the *praeses* who restored the *thermae Montanae* (CIL, II, 4112 = RIT 155[255]). Other studies based on archaeological and epigraphical criteria have related these thermae to the public baths restored by the provincial governor (Díaz *et alii* 2000b, Macias 2000b), particularly to a major renovation of the thermae complex that has been linked,

252 "Even the growth of health clubs and leisure centres takes us only part of the way to appreciating the rôle of Roman baths. While these share the interest in and focus on the individual body which is also central to Roman bathing, thus far the use of these is still a lifestyle option, one positively avoided by many individuals and of little concern to large sectors of society. In terms of understanding how the baths developed from an individual concern to a universal and communally-experienced pleasure, the nearest parallel in contemporary Western society is perhaps the growth of shopping as a leisure activity. Both arise within the context of urban living-patterns, in areas which are not exactly essential to life itself but the results of which are closely bound up with self-presentation and position in society." (DeLaine 1999a, 8).

253 We understand public baths to mean baths open to the public, although not necessarily free of charge. The baths could have been built with a donation given by an individual to the city in an act of social promotion (euergetism) and would usually have been built on a public street. However, they could also have been privately built for commercial exploitation.

254 In many cases the baths became the main social event of daily life, without establishing differences between the classes and allowing women to participate as users. The latter resulted in numerous moral problems of a sexist or Christian nature, which were partially resolved by having separate times or areas for each sex (cf. Malissard 1996, 112; Yegül 1992, 30 s.).

255 M(arco) Aur(elio) Vincentio v(iro) [p(erfectissimo)] p(raesidi) [p(rovinciae) H(ispaniae)] / Tarraconensis ac su[per] / omnes reliqu[os] praesides ius / tissimo restitutori / thermarum Montanarum / Mes[s]ius Marianus / cur(ator) r(ei) p(ublicae) Tarraconensis. (Alföldy 1975). Cf. Fagan 2002, 241, no. 28). The dedicator of this inscription was the *curator civitatis*, an official nominated by the emperor to oversee the municipal finances, who progressively beca-

hypothetically, to the work mentioned in the RIT 155 epigraph.

On the other hand, the linking of the baths to the *Montanus* has to be seen as yet another example of the practice of euergetism related to the construction of public baths, since Roman law required the name of the builders to be displayed in all buildings, even when extensive renovation work was carried out. This could have been the case of the *thermae montanae* and the *thermae cassiorum*.[256] In both cases Hispanic, the inscriptions tell us that the baths were restored by a *praeses Provinciae* and mention the original name of the thermae, a fact that also shows us that the baths were built as a private initiative, at least initially. It was common with thermae, as we can see from the majority of inscriptions, that the baths were mainly financed either by the local authorities or by private patrons. This is a known practice in the area of Hispania (Andreu Pintado 2000, Rodà 2000, Mayer/Rodà 2002) and the epigraphical evidence of foundational inscriptions within the Empire shows that the construction of public bath complexes reached its peak during the 2nd century, while the 3rd century, and even more so the 4th, were periods of restoration, as demonstrated by the inscriptions (Fagan 2002, 129-175).

In the case of Tarragona we find ourselves with the common practice of a public amenity financed by a member of the local elite. It is one of the last practices of private munificence on the part of an important member of the municipal elite, who finances a public baths complex for the benefit of the community. G. Alföldy (1975, 86) linked the construction of the *Thermae Montanae* to *L. Numisius Montanus*, who was *flamen provinciae Hispaniae Citerioris* (CIL, II, 4231[257]) and who paid homage to his wife, Porcia Materna, *flaminica provinciae Hispaniae Citerioris*, after serving as a priest in Caesaraugusta and Osicerda (CIL, II, 4241[258]). This connection would place the baths in the period of Hadrian, as we can infer from the reference to *equo publico donato ab Hadriano imperatore* mentioned in another of the inscriptions referring to this person (CIL, II, 4275[259]), also from Tarragona. The chronology we propose for these thermae invalidates that possibility, although it is hypothetically possible that the baths were financed by a later member of a family line with considerable presence in the city of Tarraco.[260] Despite this data, the relationship to the baths is merely conjecture. We should also point out that the designation *Thermarum Montanarum* could refer to a *Montanus* known to us from his *nomen* and that in the whole of Roman Hispania there is no mention of any *Montanus* in the corpus of *nomina* (cf. Abascal 1994).

Tarraco is the only city in Hispania that the sources[261] mention as being affected by the Germanic pillaging of the second half of the 3rd century (c. 260) and the data obtained from the thermae area ratifies, from the archaeological point of view, the veracity of the historical texts. The Sant Miquel Street site shows evidence of a fire, as well as a consecutive restoration of the baths (Section 3.2.5). On the other hand, the stratigraphy and architectural material found in the dump in Castaños Street shows many signs of having been subjected to intense fire and heat (Sections 3.3.5 and 4.2.3). Other similar data has been found at No. 10 Sant Josep Street and at the western extremity of the port (Adserias *et alii* 2000). Taken as a whole, it is evidence of a violent occupation of the port area by the Franks, who wanted to appropriate the vessels anchored there to take them to North Africa. These indications make the consequences of the 3rd century invasion an indirect factor in the identification of the person responsible for building the thermae complex. We have no clear chronological data referring to the restoration work (Sections 4.1.4 and 4.6.1), but the overall analysis again appears consistent with the historical and social context of the thermae during the last centuries of the Roman Empire.

The attention paid to the baths by the *praeses provinciae* at the end of the 3rd century or beginning of the 4th suggests an almost consecutive reaction to the consequences of the Frankish invasion. Moreover, it reflects a well-known process of crisis and lack of con-

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me a magistrate with more control and power over the city.

256 In Olisipo we have evidence of a similar situation with the construction of some baths by the *Cassii* family, possibly in the early-Roman period, and a subsequent refurbishment promoted by the *praeses provincias Lusitaniae* in the year 336 (Andreu Pintado 2001; Fagan 2002, no. 122).

257 CIL 02, 04231 = RIT 0295: L(ucio) Numisio / L(uci) fil(io) Pal(atina) / Montano / Tarrac(onensi) / omnib(us) honorib(us) / in re p(ublica) sua functo / flamini p(rovinciae) H(ispaniae) c(interioris) / p(rovincia) H(ispania) c(iterior) (Alföldy 1975). This is a pedestal from an equestrian statue recovered in the area of the Provincial Council Square (Massó 2001, 356-359).

258 CIL 02, 04241 = RIT 0325: Porciae M(arci) f(iliae) / Maternae / Osicerde(n)si / [fl(aminicae)] p(rovinciae) H(ispaniae) c(iterioris) et postea / Osicerd(ensi) Caesar[aug(ustanae)] / Tarrac(onensi) perpetuae / L(ucius) Numisius / Montanus / uxori (Alföldy 1975).

259 CIL 02, 04275 = RIT 0349 : L(ucio) Numisio / L(uci) fil(io) Pal(atina) / Montano / aed(ili) q(uaestori) IIvir(o) / item q(uin)q(uennali) IIvir(o) / equo publ(ico) donato / ab Imp(eratore) Hadriano Aug(usto) / iudici decur(iae) I / Numisia / Victorina soror / testamento in foro / poni iussit (Alföldy 1975).

260 Another reference is the sevir and *magister larum Marcus Raecius Montanus*, CIL, II, 4304= RIT 0426: M(arco) Raecio / Montano / seviro mag(istro) / Lar(um) Augustali / C(aius) Raecius / Iulianus / patri pientissimo (Alföldy 1975). Another person with possible links to the city is the flamen *Maecius Maecianus Montanus*, of whom a pedestal dated between 150-250 AD was excavated in Mahon, CIL, II 3711= ILS 6959: Maecius Mae/cianus Quirina / Montanus ae/dilicius iter(um) IIvira/tu in insula func/tus etiam flamina/tu provinciae Hispa/niae citerioris ob ae/ternitatem honorum / suorum memoriae / conlocavit (Alföldy 1973,79).

261 Aurelio Victor (c. 360), *Liber de Caesaribus*, 33, 3: "Gallienus rem Romanam quasi naufragio dedit [...] aedeo uti [...] Francorum gentes, direpta Gallia, Hispaniam possiderent, uastato ac paene direpto Tarraconensium oppido, nactisque in tempore nauigiis pars in usque Africam permearet". Eutropio (c. 370) *Breuiarum Historiae Romanae*, VIII, 8.2: "Germania usque ad Hispanias penetrauerum et ciuitatem nobilem Tarraconem expugnauerunt [...]". For a

cern on the part of the local magistracy for maintaining the municipal services. In compensation, persons occupying important imperial posts took on tasks of local munificence[262] that have been called *acts of imperial propaganda*, but in reality could also have been in response to popular demand. Indirectly, the intervention of *praeses* reflects the importance of public baths in daily life, to the extent that, in some cases, they became more important than the city forums.[263] On the other hand, the circuses and amphitheatres maintained social favour, with evidence of a phenomenon parallel to that of the public baths complexes. Therefore, it is common to see these buildings being restored by representatives of official bodies. In Tarraco, the emperor Heliogabalus restored the city's amphitheatre in 221 (Alföldy 1997). Another well-known example is that of the restoration of the public spectacle buildings of Merida (Mateos 2000). This data demonstrates a selective application on the part of the empire, as the rulers intervened in the buildings with the greatest social impact, such as public baths, and preferably in cities or capitals directly under the control of the imperial administration.

In the case of Tarraco, from the 4th century, the public baths would have been the main leisure venue in the lower part of the city, as the City Forum was already in disuse (Ruiz de Arbulo 1990). The abandonment of the Forum must be considered as another consequence of the ruralisation of the central part of the city. This was an intramural residential area that, judging by the evidence of the demolition and obliteration of the drainage network, underwent a process of ruralisation (Adserias *et alii* 1997). On the other hand, in the 4th century[264], the port area shows clear signs of having undergone a process of urban revitalisation, so that we cannot disassociate the reconstruction of the thermae and its survival into the 5th century with the continuity of residential occupation in this area and the maintenance of port activity. Despite the social prominence the baths may have had in the urban context of the lower part of the city during the 4th century, the archaeological reality shows a technological and aesthetic decline in the restoration of the baths. The restoration (Phase V of Sant Miquel Street) involved varying the internal itineraries round the baths and breaking the communication between the caldarium and the frigidarium. Moreover, the composition of the *crustae* used on the wall coverings and the new flooring indicate a lack of resources and the need to use poor quality materials. The classification of these materials shows that the majority of the re-used marble plaques came from building dumps from the 2nd or beginning of the 3rd centuries.

The final phase in use of the baths coincided with the proliferation of small private thermae around the city's port area and with the continued use of thermal baths in the villas of the area, such as those of Callipolis and Centcelles (Macias 2000c, Piñol 1993). This process reflects the privatisation or interiorisation of bathing habits by the well-off families of the city and its surrounding area, while at the same time the public baths began to lose their role of social cohesion. Private baths in the city, often related to urbanistically differentiated *domus*, are found in the port area, in the religious nucleus in the area of the Francolí and the road linking the *suburbium* of Tarraco with the roads to Ilerda and Valentia. In this context we can refer to the thermae discovered by Serra Vilaró in the area of the early-Christian Necropolis (Serra 1935), the baths of the residence near the Parc Central basilica, built during the 4th century and in use until the 5th century (López Vilar 2000), and those in the area known as PERI-2 (Adserias *et alii* 2002).[265]

This phenomenon is related to the circumstances of the Late Antiquity society. The economic difficulties of the cities in terms of maintaining such large public bath infrastructures and the fact that public bathing was subject to growing criticism from certain sectors of Christian puritanism[266] are factors that had a bearing on the proliferation of private *balnea*. This action highlighted, as in other facets of Classical Society, an increase in individual awareness, as opposed to a feeling of belonging to an all-embracing society (Thébert 1992, 371; Fuentes 2000). The growth in the numbers of private thermae in this period and throughout the Late Antiquity must be considered as a common phenomenon in different places, as can be seen in Ostia, Merida, Barcelona and North Africa (Pavolini 1986; Mateos 2000, 496; Miró/Puig 2000; Thébert 2003, 415-417, respectively).

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recent analysis see Pérez Centeno 1998.

262 We know of other cases in which a *praeses* took on responsibility for the restoration of thermal baths. For example, the *praeses provinciae Tripolitaniae* restored the baths of Sabratha in 378, and in 379/383 the *praeses provinciae patronus* did the same for the thermae of Satafis (Fagan 2002, 137-142).

263 The thermae of Telessia had a series of inscriptions dedicated to the imperial family, in obvious rivalry to the forensic basilica. In Ostia a temple was added to the palaestra of the Forum baths. These are specific cases that reflect a more widespread process. From the 4th century, thermae attracted more investment from the imperial representatives and the baths became the centre of civic life (DeLaine 1999 b, 73). A similar situation can be seen in North Africa where the public baths became the favourite place for meeting and for spreading imperial and municipal propaganda. A clear example of this is seen in Carthage in the year 411 with the council of Catholic bishops and Donatists held in the baths of Gargilius (Thébert 2003, 444-447).

264 We can speak of an urban revitalisation in the port area from the 4th century, which is consolidated with the definition of new urban axes and constructions (Adserias *et alii* 2000). A recent comprehensive analysis of this process can be found in Arce 2002.

265 It is worth noting the construction of the thermae on plot 31/32 of PERI 2 in Tarragona (Adserias *et alii* 2000, fig. 9), as this occupies part of the ancient road of the port area and demonstrates a phenomenon that is repeated all over Hispania in which the imperial roads are either partially or completely occupied. It is a phenomenon that is repeated in other cities such as Merida and Valencia (Alba 2001, 413; Ribera/Rosselló 2000, 158-159).

266 By way of example, the Church does not agree with the presence of women in public baths. The Council of Ladicea in 320 prohibited women from ente-

The location of these private baths in the port area is a reflection of the urban vitality of this extramural part of the city, related to the proximity of the port and the road links to the rest of the territory. However, it also has to be considered a consequence of the proximity of an underground water supply in the hydrographical basin of the River Francolí, which would have facilitated both daily life and the water supply for the baths. In this respect, we also have to take into account that the Early Roman water supply system was no longer in use and that the wastewater from these baths was drained off through new channels that often ended in cesspits. In terms of their architecture, these baths were smaller and simpler. We can also see a loss of quality in the construction materials, often re-using elements recovered from earlier buildings. In summary, this reflects a simplification of the architecture and an adaptation to the needs and resources of Late Antiquity society, which can also be seen in other thermae on the Iberian Peninsula (García Entero 2001).

In the context of Hispania, the abandonment of the public baths of Tarraco is a specific example, consistent with the urban situation of the period. However, the lack of data does not permit us to identify similar circumstances in the rest of the Hispanic provinces. In any case, the main reason for the disappearance of the public baths was their size and cost of maintenance, a consequence of the difficulty in maintaining a certain standard of living in urban life. To this we have to add that the functioning of the baths demonstrates the ability of the urban managers in terms of maintenance, management, and the supply of water and fuel (cf. Fernández Ochoa/Zarzalejos 2001). The closure of the grand imperial-type baths is a heterogeneous phenomenon around the Empire, the result of the historical situation and specific circumstances in each place. We know of several cases of thermae that survived until the 5th century, such as the Baths of Nero, Titus and Caracalla in Rome, and the Antonine Baths of Carthage that were still in operation in the 7th century. These have to be taken as specific cases that indicate the vitality of the city in which they were located, although the structural analysis of their various renovations shows a process of architectural regression compared to the original building. We can also see that in the 5th century many imperial thermae complexes and public baths were abandoned in lower category cities such as Tarraco.

Unlike other thermae complexes such as those of Clunia (Los Arcos I), Gijón, Segobriga and Baetulo (see Gurt 2002 with bibliography), the Tarraco baths were not reoccupied by industries or artisans' workshops that took advantage of the solidity of the buildings for these new uses. The Tarragona thermae were converted to private and residential use, with an architectural pattern determined by the original structure of the baths, which was partly used in the new dwellings.

4. The Port Area of Tarraco: new contributions and the state of the question.

Josep M. Macias

> To write the history of the Port of Tarragona is to write the history of this ancient city itself. The founding of the city is so closely linked to its port that you cannot speak of one without referring to the other. To put it another way, the existence of the early settlement of Tarragona was probably more due to the protection of its natural port, than to its strong defensive position, although the latter was an essential factor in those days. (B. Hernández Sanahuja 1859).

The data obtained from below the thermae complex (Sections 3.2.2 and 3.3.3) has brought us new information about the Tarraco port area, particularly about the eastern half of it bordered by the natural bay, which we believe to have been the starting point for the development and expansion of the port. Moreover, an analysis of the historical and urban evolution of the port is essential for an understanding of the reasons the public baths were built on the Sant Miquel Street site, as well as the reasons that determine the morphology.

For most of its history, Tarragona has been a bicephalous city, consisting of an acropolis and a port quarter. The acropolis, sitting on the top of the hill of Tarragona, was the most prestigious area. At first it had a purely military purpose, but in the imperial period it became the area of political representation, with the very highest part being occupied by buildings of a religious nature, a situation that has continued to the present day. From the 5th century AD, the upper part became the preferred residential area of the city, a function that continued, except during the Islamic period when the city was institutionally abandoned, until the urban development of the 19th century. At the far southern end of the city we find the port, historically the economic driving force behind the city, as well as a stable residential quarter. In certain historical periods, the port area was in urban terms more integrated into the rest of the city, while at other times it was separated from the main residential quarter, which was often in what we know today as the Upper Part or historical quarter. This coexistence or bipolarity between the two centres —residential and port— has always existed and has defined an inseparable historical reality. We can conclude that the city would not have come into existence without a natural port with favourable conditions. The establishment of Tarraco is due to the strategic military decision taken by the Romans to set up their military encampment, followed almost immediately by the new Roman town, on the site of the port bay.

The port was used by fishermen even before the Romans arrived. It was the *piscatores tarraconenses* of the Iberian *oppidum* who informed Publius Cornelius Scipio of the port conditions in Carthago Nova (Livius XXVI, 45, 7). That was in the year 210 BC and those Iberian fishermen must have been part of the seafaring community of the *oppidum* of Tarrakon and/or Cese. The Roman military occupation gave a new purpose to the harbour in the bay of Tarragona. It became the disembarkation point for the Roman troops engaged in the Second Punic War. From this time both the port of ancient Tarraco and the area around it grew and continued in use until the arrival of the Moors.

To analyse the port of Tarraco means studying the monumentalisation process undergone by the city's waterfront. The port facilities cannot be dealt with in isolation. In our case, the analysis of the port area has to be related to the data provided by the Forum, the Theatre, and, as a result of more modern preferences, the thermae complexes. All these elements formed part of the monumentalisation process of the lower part of the city and were clearly related to the physical proximity of the port. However, the location of these complexes was not originally determined by the port, but rather by the historical evolution of the early Republican city. Tarraco was founded in the context of the Second Punic War. This resulted in a physical and functional duality, characteristic of the wartime circumstances of the period, composed of two elements. The *praesidium* of the Scipios, subsequently converted into the Catonian walled *castrum*, was located at the top of the hill, some 60-80 metres above sea level. The second nucleus was about 1,000 metres away, between 10 and 25 metres above sea level. That was the Iberian *oppidum*, which, strictly speaking, was the focal point for the Republican residential town.

The position of the first Tarraco settlement, on the southwestern promontory of the hill, explains the unusual emplacement of the early Roman Forum. It was a consequence of the desire to physically continue in the same place as the earlier forum, the choice of the site of which was determined by the Republican urban layout and not by its relation to the total *pomerium* of the city as defined following the period of Augustus. Furthermore, the expansion of the early Roman Forum meant reforming the peripheral roads to improve access to the complex, within the framework of the city's suburban growth. For this reason it has been determined that the location of the Republican Forum, maintained during the Early Roman period, conditioned the subsequent location of the Theatre, given the functional and symbolic interdependence between the two buildings (cf. Ruiz de Arbulo 1993, Ruestes 2001, 194-196). That was how the monumental lower part of the city came about, with the initial protagonists being the Forum and the Theatre, the preferential representation areas for the municipal elite, as well as, in the 1st and 2nd centuries AD, the site of imperial worship ceremonies.

This section incorporates the new factors that contribute to the current interpretation of the city port area – the port infrastructures and the public baths.

We do not have any vestiges of the first Iberian port, nor of the early-Roman military port. The first port structures would probably have been made of wood, or possibly not have existed at all, with cargo being unloaded straight onto the beach using small boats. Soon, the logistic needs of the Second Punic War and the intense traffic being handled by the port necessitated the construction of port facilities and infrastructure to provide drinking water for the population. Between the years 218 and 206 BC thousands of soldiers from Italy and hundreds of war and transport ships arrived off the coast of Tarrakon, although we have no archaeological evidence of this military port. It is possible that the underground aqueduct cut into the rock and preserved in some parts of the city at a depth of 13 metres is a vestige of the water supply system for the port (Burés *et alii* 1998). The historian Titus Livius already mentions the *portus Tarraconis* (XXII, 22) in the year 217 BC and the lexicographer Suidas has Polibius (*circa* 218 BC) speak of the existence of an *epineion*,[267] a natural harbour equipped with port facilities.

The absence of archaeological remains can be explained by the archaeological casuistry and the impermanence of the architectural elements, but we must not forget that the ancient port of Tarraco, like the modern port, was a dynamic physical and geographical reality that, by means of different natural or anthropic processes, progressively reclaimed land from the sea. In the case of ancient Tarraco, the alluvia transported by the Francolí and the gully that cut longitudinally across the hill (Section 1.1) have been elements that, together with the different phases of urban expansion, have caused the docks to advance far from the original coastline. A good indication of the expansion of the port is the infrastructure located below the Roman Theatre (Mar *et alii* 1993b). The superimposition of the Theatre, as well as other ele-

ring (cf. Malissard 2001, Yegül 1992, Fuentes 2002).

267 "Polibius. The Romans took their vessels to land. After the defeats suffered they gathered their soldiers together in Tarrakon and there constructed an epineion, with the aim of protecting, as owners of the passage, their allies" (*Suidae Lexicon*, extracted from Ruiz de Arbulo 2003). According to this author, the use of the term *epineion* implies the existence of specific port facilities over and above the favourable natural characteristics of the bay. The reference describes a port settlement to winter the armies of Scipio and, therefore, the veritable *portus tarraconis* arose from the infrastructure needs of the Second

ments, indicate the advancement of the line of docks, resulting in the consequent dismantling and building over of the earlier port infrastructure.

The port bay was located at the foot of the escarpments bordering the hill of Tarragona to the south. Some 200 m to the east of the area where the public baths would later be built was the point at which the gully that cut longitudinally across the hill flowed into the sea. This watercourse played a fundamental role in the urban evolution of the city. Firstly, as a path connecting the bay of the harbour with the hill of Tarragona, secondly, as a channel for rainwater and urban waste, and thirdly, as a determining factor in the route of the main sewer of the Roman city (the excavations at Nos. 7 and 9 Apodaca Street) (Section 3.4). It is a type of *cloaca maxima* built around the year 100 BC, which, with various extensions, reached the coast (Macias 2000a, Díaz/Puche 2002 and 2003). Before the sewer was built, the gully must have acted as an open drain for the urban waste produced in the upper parts of the city. Thus, we have detected stratigraphic depositions from the first half of the 2nd century in it (No. 9, Apodaca Street). Other evidence of human activity is found at No. 7, Apodaca Street, although this is difficult to interpret. Outside the watercourse evidence of a possible altar dedicated to the *lares compitales* has been found (Puche 1997), as well as evidence of small dwellings with a topographic layout corresponding to the proposed hypothetical urban grid model (Macias 2000a). Also, a deposit and two walls with irregular bonding have been found in the area of the Theatre (Mar *et alii* 1993b, 14, Fig. 3). We have no further information on these walls, but it has to be said that both their orientation and their location correspond to the façades of one of the Republican streets —*decumanus*— established in the theoretical model that serves as a reference (Fig. 151). This allows us to include, theoretically, this evidence in the project drawn up to depict the urban expansion at the end of the 2nd century BC, which we associate with the extension of the walls and the construction of the sewer. Furthermore, the road defined as the *cardo maximus* of the city follows the same route as the lower part of the sewer that runs along Apodaca Street (Aleu 1983).

Taken together with a recent proposal of isometric curves for the city,[268] this data allows us to transfer to the port the theoretical model of the urban structure, contrasted with the intramural residential area and dated to the end of the 2nd century (Macias 2000a). These are new hypotheses that have to be archaeologically verified, although the effects of the 19th century quarrying have left large irresolvable gaps in our knowledge. The model is based on a grid of 1 x 2 *actus*[269] identified in the intramural residential area, which presumably does not occur above the southwestern promontory of the city, where there was a pseudo-urban precedent —the Iberian *oppidum*— that gave rise to the 2nd century BC Roman settlement. At the other end, the damage caused by the 19th century quarries make it impossible to comprehend any of the urban layout on the southeastern elevation (Fig. 151). Between these two geographical features, there must have been a small plain adjoining the bay, bordered to the north by the cliff that would later be used to build the stands of the Theatre and against which the port buildings and the Sant Miquel Street baths were built (Fig. 3). We do not know the position of the original coastline or anything of its evolution, but, indirectly, the route followed by the sewer[270] gives us an approximate idea of where it flowed into the sea and therefore where the beach was. Thus, the identification of urban vestiges below the Theatre and the fact that the lower part of the route taken by the sewer coincides with that of the *cardo maximus* allows us to establish the hypothesis that the city's port area was designed on a grid pattern, although we are currently not in a position to state to what point that was carried out.

It is possible that this octagonal model was only applied to the west of the sewer, as the relief of the southeastern hill would have made it difficult. We can see that the construction of the sewer around 100 BC meant designing a series of containment walls and levelling off the gully in order to ensure the stability of the sewer walls and to create artificial terraces to facilitate later urban construction (Section 3.4, Figs. 90, 91, 93 and 94). In this way the gully was eventually hidden from view by the new buildings. The archaeological excavations in Apodaca Street and the superimposition of the route of the sewer according to the isometric curves show us that the conduit did not run right down the middle of the gully, but hugged its eastern bank and acted as an subterranean containment element that edged the western slope of the eastern hill of the bay. Furthermore, the embanking walls of the sewer and the Augustan walls belonging to the warehouses identified at No. 5 Sant Miquel Street have an orientation coinciding with, and at the

Punic War.

268 We have to keep in mind that this topographic plan is an interpretation based on the contemporary planimetry of the city and, for different reasons, we have to think of it as an attempt to recreate a past situation that has been greatly affected by the various transformations of the modern and contemporary city (Gabriel 1993, fig. 12). It is clear that the levels we propose correspond to the data of the 19th century city and are too high in relation to the archaeological data we have available. Nevertheless, in order to make it easier to understand, we have decided to respect them in our plans.

269 The rectangular *insulae* are a constant in the Republican cities (Torelli 1990) and we know of identical modules in the Roman city of Empúries (Mar / Ruiz de Arbulo 1993, 217). Other rectangular modules are found in the Republican cities of Pollentia and Gerunda (Mar / Roca 1998; Burch *et alii* 2000).

same time different to, the orientation axis of the intramural urban layout and the port area located to the west of the main sewer. Perhaps this was an urban planning solution imposed by the geographical conditions of the eastern cape of the bay.

This first important urbanisation of the port area cannot be disassociated from the rest of the city. The layout of the main sewer must be considered as yet another element in the configurative process of the Republican city of Tarraco. Both the construction of the walls and the definition of the drainage system are actions linked to the progressive planning and execution of the urban grid made up of *viae* and *insulae*. These three elements —walls, sewer and intramural street network— were urban processes that, with different levels of precision that are open to debate, can be dated to the second half of the 2nd century BC[271] preferably at a later rather than an earlier fork in this chronology. Although initially the second phase of the walls was associated with the Celtiberian wars (Aquilué/Dupré 1986, Aquilué *et alii* 1991), we believe that their construction formed part of a historical process derived from the urbanisation of the northeast of the Peninsula (Macias 2000a). Therefore, the transformations undergone by the city and the port of Tarraco have to be categorised as being part of a larger phase of new urban creation, which included the towns of Narbo Martius (118), Valentia (138), Palma (123), Pollentia (123) and Emporiae (c. 100).

With respect to the layout of the walls, the excavations carried out at the southeastern end of the port have not provided us with any indication of its precise location. Perhaps the reading of Pons d'Icart's text (Chapter 2) and the identification of the thermal baths in Sant Miquel Street with the area in which part of the finds mentioned in the historiography are located allow us to corroborate the proposal for a southern enclosure of the walled area, if only for the south-western end (Aquilué/Dupré 1986). In that case, both the thermae complex under study here and the area of the Theatre have to be considered extramural buildings. In the first case, the stratigraphic evidence shows that this part of the port was an area of marsh or beach that was not transformed until the work carried out in the 1st century AD (Sections 3.2.2, 3.3.2, 3.3.3, 4.1.1 and 4.2.1). On the other hand, if we deem Lluís Pons d'Icart's description to be correct in terms of the prolongation of the Roman wall to the place occupied by the 16th century port tower (Figs. 6-8), we have to conclude that questions remain as to the location of the defensive walls that joined the two promontories (Figs. 151 and 152).

In the final quarter of the 1st century BC there was an important phase of urban expansion. In the area later occupied by the Theatre we can see the evidence of the type of port warehouse known as a *porticus* and a series of hypothetical *tabernae* facing the sea (Mar *et alii* 1993b). At No. 7 Apodaca Street, above an already buried sewer, there was a building constructed of ashlars. This underwent various alterations, including several consecutive floors and some latrines (Section 3.4). We also found evidence of building work from this period in the Apodaca Street excavation, although these vestiges are very sparse and uncertain. Other evidence reflects the urban growth of the city, which is demonstrated by the reorganisation of the peripheral roads and the development of the suburban areas (Macias/Puche 1997, Adserias *et alii* 2000, Macias/Menchon 2002). These facts denote an urban boom brought about by numerous circumstances: the general urban development of northeastern Hispania, migratory policy, the *deductio* of veterans, the designation of Tarraco as capital of the *provincia tarraconensis*, the sojourn of the Emperor Augustus in the city, the development of territorial occupation, and the economic exploitation of the *territorium*.[272] The renovation of the Colonial Forum and the construction of the Theatre must be considered, despite the chronological doubts over the date of their construction,[273] as a direct consequence of this new urban situation, which can also be seen in the port area buildings documented around the Theatre and also in the definition of the new port facilities built during the first half of the 1st century on the sites occupied by No. 5 Sant Miquel Street and No. 10 Sant Josep Street (Section 3.4, Figs. 92 and 152).

Another part of the port with doubtful chronology is the Roman jetty shown in the historical planimetry (Section 1.2, Figs. 6-8). Its construction can be considered a necessity brought about by the urban and economic growth of the city from that time and a determining factor in the extension of the sewer. The layout of the latter shows us that when it reached the port area, it made a sudden turn to avoid emptying the urban sewage into the new port roadstead. The available descriptions paint a picture of a typical Roman port jetty, based on rows of *pilae* in *opus caementicium* above which there was a series of arches and a service road, in the preferred style of the 1st century BC and the 1st century AD. The bibliography

270 The result of linking various stretches with different constructional features. This requires a more exhaustive study.

271 Cf. Aquilué *et alii* 1991, Güell / Sánchez Real 1995, Macias 2000a; Díaz / Puche 2003).

272 From the second half of the 1st century BC, and especially during the period of Augustus, we have evidence of the proliferation of obviously Italian-style villas in the northeast of Hispania (cf. Revilla / Miret 1995, Olesti 1997 and Castanyer / Tremoleda 1999). The road network reforms, the founding of new cities (Barcino, Dertosa), and the colonising policies of Caesar and Augustus were factors that favoured the adoption of territorial models of occupation (cf. Miró Canals 1988, 226-227; Marín Díaz 1988; Molina 1997, and specifically for Tarraco, a new proposal by Ruiz de Arbulo 2002).

273 Both are currently considered to de dated between the Augustan and the Julio-Claudian period (see Gimeno 1991, Ruiz de Arbulo 1990 and Aquilué *et*

contains many examples of this type of architecture taken from depictions in paintings and reliefs (Giuliani 1998; Adam 1984) and, in the case of Hispania, we know of the structures in the port of Cartagena from a 1st century BC inscription that mentions the construction of *pilae et fundamenta* (Abascal/Ramallo 1997, 69-77).

The construction of the Theatre and the thermae identified in Apodaca Street demonstrate the beginning of the functional diversification of the city port, a process that began at the far eastern end of the bay. Thanks to an ambitious monumentalisation programme, the economic and social development of ancient Tarraco converted the early port area into a new recreational zone for the city, with a clear scenographic and ceremonial connection to the Colonial Forum. It was the municipal counterpoint to the administrative and spectacle complexes related to the city's status as provincial capital. Thus, at the top of the hill of Tarragona and on its eastern slope, we find the seat of the *Concilium Provinciae Hispaniae Citerioris*, the Circus and, built at a later date, the Amphitheatre. In the lower part, crowned by the Colonial Forum, were the representational areas for the local elite and, playing a primary social role, the leisure facilities that were used on a daily basis – the baths and the Theatre porticos and gardens. Until recently, the Roman Theatre was the principal reference point for the recreational monumentalisation of the lower part of the city. The excavations carried out at No. 2 Dr. Zamenhoff Street and in the middle of Apodaca Street, have allowed us to identify two thermal baths located on each side of the Theatre recreational complex (Section 5.3). The first has an uncertain and hypothetical 2nd century AD chronology, and the latter, based on the evidence obtained from No. 7 Apodaca Street, can be dated to between the Augustan and Flavian periods (Figs. 90, 85 and 152).

The economic development of Tarragona required the creation of new port zones to replace those occupied by the Theatre, in response to the needs of a city that, from the initial Augustan period, underwent a time of considerable growth. For this reason, the *portus Tarraconis* began to expand towards the west, with the construction of new port facilities that brought about a change in the original landscape of the southwestern end of the bay, just below the southwestern promontory of the hill of Tarragona. This process cannot be disassociated from the overall changes undergone, in two different ways, by the city as a whole. Whereas the imperial-initiative architecture of Tarraco was intended to reflect the image of the *urbs*, or Rome the architecture of the municipal developments reflected the urban vitality, which was inseparable from the dynamics of the port. As capital of the *Hispania Tarraconensis*, Tarraco imitated Rome. The port area of Tarraco, the main *portus* of the north-eastern Peninsula would have had a standard image, and on a smaller scale would have been what Ostia was to Rome, with the infrastructure and port recreational facilities, among which the thermal baths stood out as they were used on a daily basis.

It is into this historical and urban context that we have to place the finds from Phase II of Sant Miquel Street (Section 3.2.2), Phases I and II of Castaños Street (Sections 3.3.2 and 3.3.3), and the structures excavated in Vapor Street.[274] All these structures adjoin, consolidate, and level off the southeastern escarpment of the hill of Tarragona. This area became the separation between the natural bay of the port, initially occupied by the early port, and the alluvial plains at the mouth of the River Francolí. Phase I, identified at the site on Castaños Street, became the first attempt at developing and dividing into plots an area that, due to its edaphological conditions, had not been developed during the Republican period. The evidence from Phase II, identified at the sites on Castaños and Sant Miquel Streets, defines a new urban area that must have been publicly developed, given the size and importance of the project (Fig. 152-153). Moreover, the magnitude and impact of the work represents man's definitive domination of the natural environment.

As far as Phase II is concerned, two buildings have been identified in Sant Miquel Street. They are separated by a narrow street, a type of *angiportus*, protected from possible rock falls from the escarpment by containment structures that follow the crest of the hill. One of the buildings has been interpreted as a *horreum*,[275] with a courtyard or interior corridor and a narrow entrance that could belong to the rear of the building (Figs. 27-30). This has been determined by the system of superimposing the thermae complex and it complies with standard port warehouse architecture that, at the same time, has a large variety of types depending on the specific needs and determining urban and geographical factors of each case. The purpose of the other building has not been determined, although it must have formed part of the same urban *insula* delimited by the buttress wall identified on the Castaños Street site. Here, the foundations with buttresses constitute the western limit of the whole of this port sector, which is moulded to the morphology of the natural escarpment and leaves

alii 1999).

274 Based on the architectural features and the location, we believe that the tower and the walls in Vapor Street, dated to before 50 AD and interpreted as an alteration to the walls, are in reality containment structures that form part of this urban development process (Aquilué / Dupré 1986, 12-14).

275 The fragmented condition in which this was found has led us to propose that it may have been a *macellum*. However, the fact that the building is loca-

some empty spaces, the result of imposing an octagonal urban layout on the irregular relief of the hill of Tarragona. The architectural typology of the walls is reminiscent of the perimeter enclosures of the large military *granaria* (Richman 1971, Gros 1996[276]), although the use of buttresses could have other architectural purposes. In any case, the buttresses indicate special care in the reinforcement of the lateral walls, which are those that bear the heaviest oblique loads from merchandise stored inside. Both port buildings date from the end of the final third of the 1st century AD (Sections 4.1.1 and 4.2.1), and represent the construction of a new maritime quarter, a new *emporium* centred on the commercial activities associated with the storing and redistribution of merchandise. This phenomenon represents a boom in the city's commercial activity, brought about not only by demographic growth, but also by an increase in the exploitation and inter-provincial trade of the natural resources of the *territorium* of Tarraco.

This urban development did not only affect the waterfront area. We have dated to the time of Flavian the construction of a large commercial square on the edge of the Forum, in addition to other monumental reforms to the south of this area (Macias 2000a and Miró 1994 respectively). The first of these examples demonstrates a known urban and economic relationship between the *forum* and the *macellum* (Ruyt 1983; 326-330) (Fig. 134).

The intensive building activity at the end of the 1st century AD must be considered as the counterpoint to the whole imperial project undertaken in the upper part of the city (TED'A 1989). From the point of view of the expansion of the port, the buildings detected in the baths area would have been continued in the numerous port buildings documented to the west of Castaños Street and built on the plains originating at the mouth of the River Francolí. The finds identified near the Francolí show a combined urban development programme of port *viae* and *horrea* laid out along the natural curve of the river mouth and built on a former area of beach and marsh (Pociña/Remolà 2001). We do not have any chronological data on these new facilities, but taking into account the logical expansion of urban development, they must have been built at the same time as, or a little after, the structures preserved below the public baths.

This port development has to be studied as a cause and effect of the boom in Tarraco. Therefore, with the construction of the Amphitheatre at the beginning of the 2nd century AD the city reached its peak of urban and social development. In this respect, it attained the principal milestones of monumental architecture and also defined and expanded the characterising elements of all its urban vitality: the residential areas and the focal points of economic and commercial activity that, in the case of Tarraco, were centred around the Colonial Forum and the port. G. Alföldy (2002) describes for us an "epigraphic explosion" between the years 68/69 and the transition from the 1st to the 2nd century AD, and states that it is a phenomenon that does not have any parallel with the increase in epigraphical production found in other cities of Hispania. The whole honorific and statuary programme that can be deduced from the epigraphy of Tarraco reflects the presence of an important social class made up of the equestrian and senatorial classes, denoting the political and economic vitality of the city as the capital of the largest province in the Empire. At the same time, the author associates the epigraphic explosion with a new form of expressing the self-awareness of the *tarraconenses* as full citizens, thanks to the granting of the *ius latii universae Hispaniae*.

From the perspective of the thermae culture, the existence of a comprehensive monumentalising urban development programme, in this case applied to the Tarraco waterfront, has to be considered as the propitiating factor for the new recreational buildings. We cannot disassociate the port reforms from the totality of the buildings in its immediate surroundings. The most representative and best-studied examples of this symbiotic relationship are found in Ostia. The building of the Claudian port meant a series of reforms in the port surroundings. Thus, at same time, the "provincial thermae" were built, the "Forum of the Corporations" and the Theatre stage were rebuilt, the "*horrea* of Hortensius" and the "large *horrea*" were built, etc. The construction of the port of Trajan also gave rise to new public baths (Neptune, Porta Marina), warehouses, and *horrea* (Mar 2002).

The result of this historical process of urban and economic consolidation in Tarraco was the formation of a port area that, despite major regressive transformations, remained in use until the last moment. The final historical recorded event from the Classical Period was the flight of Bishop Prosperus, who left for Italy in 713-714 AD on a vessel anchored in the port, taking with him all the relics of Tarracona's Christian community.

As we have seen, the economic boom in the city from the time of Augustus defined, in different phases, an urban landscape determined by the natural relief of the

ted in a port area favours its interpretation as a *horreum* (cf. similar port structures in Pavolini 1989, 124, 140 and 217; Burriel *et alii* 2003, fig. 7).

276 According to Gros (1996, 471), the periphery walls are never less than 60 cm thick and are frequently three Roman feet wide. These buttresses generally

hill and the site of the most important city amenities. At the same time, the topographical arrangement of the new buildings would be determined in accordance with the layout of the urban development established during the Late Republican period and, in certain buildings, in accordance with the local dynamics of the land itself. As a consequence, the public buildings face south, coinciding with the slope of the city towards the sea. Thus, the municipal urban development of Tarraco had a waterfront façade composed of (according to our current knowledge) three urban axes facing the sea and divided into three urban terraces.

The first line of buildings was made up of the normal port facilities found in a maritime city, located between 2 and 6 metres above sea level. They were right on the waterfront and included the warehouses excavated at No. 33 Sant Miquel Street and the port premises at No. 5 of the same street and at No. 10 Sant Josep Street. Behind this infrastructure, the municipal urban development defined a series of recreational facilities for day-to-day use, such as the public baths and the Theatre area. The baths of Dr. Zamenhoff and Apodaca Streets, located at either end of the port bay at a height above sea level of some 15 metres, had excellent panoramic views, a common practice in Roman town planning. Thus, the thermae in the area of Dr. Zamenhoff Street are situated near the City Forum, in the same way as the thermae of Baetulo, Barcino and Valentia. On the other hand, the position of the Apodaca Street baths is related to the *cardo maximus*, the main longitudinal axis of the city, which is close by and gives easy access to and from the port. At the same time, the location between the residential area and the port meant that it could satisfy the social customs of both local residents and foreigners arriving in the port.[277]

The landscape of the waterfront façade culminated in the Colonial Forum, with an open square orientated from west to east, some 33 metres above sea level. Between this area and the Dr. Zamenhoff thermae there was a series of public squares, such as the one identified at the edge of the crypto-portico on the perimeter of the Forum (Macias 2000a), or another in the area of Caputxins Street (Miró 1994). In addition, we expect to find in this area various buildings of worship, such as that suggested by the architectural decorative elements recovered at No. 1 Castaños Street, which originate from that site, in other words, at the top of the south-western promontory presided over by the Colonial Forum (Section 4.6.2).

In keeping with this historical context, the discovery of public baths in the Tarraco port area is a perfectly coherent archaeological situation when taking into account the urban layout and social and economic importance of the city. The Dr. Zamenhoff and Apodaca Street baths belong to an urban and technological context that means we have to place them in the Early Roman period. The construction of the Sant Miquel Street baths, on the other hand, represents a topographical continuity in relation to those of Dr. Zamenhoff Street, while the features —the typological model known as *imperial type* — and the architecture must be considered a result of a new technological situation and availability of finance, a consequence of the social situation at the beginning of the Late Antiquity. The building work is characterised by the re-use of the foundations from the previous building and by the lack of precision in its proportions and measurements. Unlike the thermae located on the upper levels or in the area of Apodaca Street, there is no evidence of marble plaques on the walls. There is little evidence to suggest that the walls were stuccoed and the walls of the *piscina frigidaria* and the *natatio* were lined like those of an ordinary water tank. Despite this, the dominance of *opus caementicium* permitted the creation of large buildings that were full of light.

The abandonment of the port structures and the superimposition of a public baths complex denotes an urban crisis that, taking the latest archaeological information into account, seems to have had a greater effect than we previously thought. The levels of burial at No. 1 Castaños Street and No. 33 Sant Miquel Street can be placed at the end of the 2nd century or at the beginning of the 3rd (Sections 3.2.3, 3.3.4, 4.1.2 and 4.2.2). In the latter, the partial obliteration of the drainage system and the deposition of buried levels at the foot of the escarpment stand out. These strata include numerous remains of decorative marble, which, hypothetically, come from the upper area occupied by the thermal baths that have been identified through various finds. A similar process can be detected in the port sheds identified at No. 5 Sant Miquel Street and No. 10 Sant Josep Street. In both cases the buildings lose their original purpose and are re-used for domestic purposes late in the 2nd century. At the same time, we have documented the abandonment of certain suburban residential areas located far from the port (Macias 1999, 302). The Theatre underwent the same process. At the end of the 2nd century the drainage channel of the eastern *parascenium* and the large lake in the porticoed area were no longer in use. These two facts do not necessarily mean that the *ludi scaenici* was abandoned immediately, but the archaeological evidence marks the beginning of a period of irreversible degradation. Thus, during the

coincide with the walls of the interior storage rooms.

277 For an overall view of the topographical relationships between the forums, thermal baths and commercial activity complexes in the *conuentus*

3rd century, there are signs in the monumental sector of a transformation in the shape of walls being built with material re-used from earlier buildings (Mar *et alii* 1993b, 18). Likewise, in the upper stands, we have found minor indications of abandonment dated to the 3rd century AD (Dasca 1993, Martí 2000).

All this data tells us that the city was not spending enough money, either from public funds or private donations, to maintain the urban facilities used for everyday leisure activities (the Theatre and the monumental area), or those used for economic activities (the warehouses in the eastern port area). Behind this urban process we can detect an ideological background consisting of a change in the values of Roman society. The 2nd century saw the beginning of the dominance of the grand spectacle buildings (the circuses and amphitheatres) and the social custom of going to the thermal baths. The proliferation of thermae complexes throughout the Empire during the 2nd century is well documented (Jouffroy 1986, Nielsen 1990, Thébert 2003). However, as far as the city of Tarraco is concerned, we still do not have enough evidence for verification. On the other hand, we can affirm that during the 2nd century new private *balnea* were built or older ones were renovated in the private villas of the *territorium*.[278]

The conclusions we come to using this archaeological data coincide with the epigraphical studies in which we detect symptoms of urban recession and municipal decadence. From this epigraphical perspective we can see that from the second half of the 2nd century, and particularly in the following century, a reduction in the number of inscriptions, the re-use of older monuments to make new ones, and the loss of aesthetic values and palaeographic quality (Alföldy 1991, 39; Alföldy 1998, 298; Mayer 1994, 167). This process is particularly evident in the inscriptions we have recovered that belonged to the area of the Colonial Forum. Finally, in the epigraphy we can see that inscriptions referring to the provincial governor began to replace those referring to the *Concilium Provinciae*.

This urban decadence has been related to possible repression suffered by the Tarraco social elite in retribution for their support of Clodius Albinus. However, in the context of Hispania we can see how the crisis in Tarraco was the result of a general situation marked by a drop in private euergetism and greater interventionism on the part of the state apparatus in the daily life of the cities. The epigraphical practices reflect the growing crisis among the local oligarchies, caused by increased fiscal pressure from the empire, which led to the decrease in euergetism, one of the key elements of urban prosperity in the 1st and 2nd centuries AD. As a consequence of this situation, the grand buildings we know of from this period were all financed by the empire: the possible restoration of the Temple of Augustus (c. 178) and the restoration of the Amphitheatre (221).[279]

It is to this period of transformation that we can date the construction of the Sant Miquel Street public baths. This fact, together with the renovation of the Amphitheatre on the initiative of the Emperor Heliogabalus, reflects the desire to maintain the most highly valued social and recreational customs (together with the Circus) of the Late Antiquity society - the games held in the Amphitheatre and the practice of bathing. Moreover, the location of the thermae complex in the lower part of the city could be part of a process in which the earlier recreational complex centred around the Theatre was replaced by a public baths complex, that could well turn out to have been much more extensive than the area we have documented. All this data shows us the urban importance of Tarraco, given that the presence of a thermae complex of these characteristics reflects the vitality of the city and is a sign of political prestige. We can see similar situations in other cities in North Africa, where there is a high level of coincidence between the location of imperial baths and provincial capital cities or seats of imperial worship. It evens stands out that cities with the rank of colony and which had been the subject of a *deductio* of veterans, as is the case of Tarraco, were likely to have imperial thermae (Thébert 2003, 294-295).

The urban and functional transformation undergone by the Tarraco public baths during the Late Antiquity was the result of a complex process of physical and ideological mutation that, in the 5th century, had one of its most intensive periods of change.[280] The urban destructuring of Tarraco, which culminated in Visigothic Tarracona, must be seen as a result of the definitive decline of the municipal organisation, sustained during the early-Roman period by the now-extinct local elite and maintained in the final centuries of the empire by the imperial administration. We have to bear in mind that during the tumultuous 5th century, Tarraco was the last capital in Hispania under the imperial control.

This long social and political process brought about new forms of urban habitat and organisation, as well

Tarraconensis, see Ruestes 2001, 197-206.

278 There is evidence of thermal baths in the villas of Centcelles, Callipolis, La Llosa, Repsol (Macias 2000c; Tarrats *et alii* 2000; DA 2001). It is also a documented phenomenon in the whole of Hispania (García Entero / Arribas 2000).

279 Concerning general aspects, see Cepas 1997, Centeno 1997, 1998. For the city of Tarragona, see Alföldy 1991, 1997; Ruiz de Arbulo 1994; Macias 2000b.

280 For an analysis of the case of Tarragona, see Macias 1999, 302-318 and 2000b and for a recent synthesis of the transformations undergone by the cities of

as new patterns of recreational expressiveness in the custom of bathing. From the urban development point of view, the 5th century city returned to the bipolar concept that had characterised the Republican city. The rupture of the early-Roman city into two urban nuclei, one at the top of the hill and the other in the port area, is a well-known process that has given the port area an important role, thanks to the most recent archaeological excavations and the abundance of documented remains (Macias 2000b, with a bibliographic collection). The reactivation of urban development in the port of Tarragona during the 4th century and at the beginning of the 5th century is evidence of the continuing urban occupation in this area, a phenomenon that has been well studied through pottery finds that indicate that trade continued to flourish up until the final stages of the Late Antiquity city (Aquilué 1992b, Macias 1999 and Remolà 2000).

The main feature of this process was the reoccupation of the earlier public areas of the port with domestic structures of a private nature. Thus, the early-Roman port area, built near the mouth of the River Francolí, was the object of an intensive suburban occupation that continued until the end of the Late Antiquity (Macias/Remolà 2000). This transformation was characterised by the superimposition or fitting of the Late Antiquity houses on or into the area occupied by the Early Roman *horrea* and by the effect of the port *viae* of that time. The new road network had narrower streets, a less regular itinerary and lacked an underground sewage system (Macias/Remolà in the press). Moreover, the new dwellings were *domus* that were isolated or differentiated from the surroundings, and we have been unable to identify any urban grid made up of *insulae*. The scant evidence obtained in the eastern half of the port is insufficient to define the model of urban occupation (Sections 3.2.6, 3.3.6, 4.1.5 and 4.2.4), although the data from the western half (PERI- 2), as well as the Hispanic context, shows a clear urban destructuring with the abandonment of the grid model as a system of organising streets and residences.

The recreational buildings also suffered a similar fate. The public baths, abandoned in the 5th century, were occupied by residential areas that were built over the floors of the baths and defined narrower architectural areas in a parallelepiped configuration, in accordance with the architectural axes of the baths. The city Amphitheatre was abandoned at an imprecise date in the second half of the 5th century or during the first half of the 6th century (Macias 1999, 227-230) and, according to diverse pottery contexts, the Circus was no longer in use after the second half of the 5th century (Macias 1999, 306; Gebellí 1999, 167; Piñol 2000). A similar process affected the Plaza of Representation of the *Concilium Provinciae Hispaniae Citerioris*.

As far as the spectacle buildings are concerned, the fact that they stopped being used does not strictly reflect a diminution of highly accepted social practices, merely the impossibility of maintaining in operation the huge infrastructure needed for such large-scale spectacles. We are reminded of the complaint made about the *ludi faunorum* and the theatre by Bishop Eusebius at the beginning of the 7th century. It was possibly a minority activity as testified to by the *Epistolae Wisigoticae* 7, but it clearly demonstrated the survival of certain recreational customs in *Tarracona* during the Visigothic period (Dupré *et alii* 1988). There was a similar situation in the port area of *Tarracona*, where we have found evidence of private thermal baths in use during the Late Antiquity. Despite this however, the ideological transformation and the urban changes of the 5th century resulted in the abandoning of the Sant Miquel Street public baths, initially due to their occupation by suburban port area dwellings, and finally due to the upheaval caused by the Moorish invasion.

Hispania (a common phenomenon in the western provinces) see Gurt 2002.