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# Architecture and Urbanism in the Fortified Settlement of Pech Maho (Sigean, France) in the Third Century BC: A Social and Economic Perspective

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<b>Architecture and Urbanism in the Fortified Settlement of Pech Maho (Sigean, France) in the Third Century BC: A Social and Economic Perspective</b>			
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## Summary

This paper offers a synthesis of the urbanism and architecture of Pech Maho (Sigeon) from a social and economic point of view. Its aim is to highlight the specificities of this settlement in the context of the Late Iron Age between south France and north-east Spain. During the third century BC, this small site had an impressive defensive system, as well as quite a complex urban framework. The constructed blocks excavated so far show a predominance of multicellular buildings that testify to a wide range of ground plans. Most of the spaces seem to have been devoted to specialized activities of a clear economic orientation, whilst other buildings or spaces have a strong symbolic nature. Rooms used exclusively for domestic tasks are in the minority, while a large dwelling in the central area appears to have been a private residential unit. All of this suggests that Pech Maho would have been an economic centre, as well as the residence of an elite that would have exerted control over the productive and trading activities, in a context that clearly evokes that of an emporion.

## Introduction

The site of Pech Maho in western Languedoc is geographically and culturally situated between the Celtic and Iberian areas. In this paper, through the analysis of its architecture and urbanism, we intend to bring out the particularities of this settlement during the Late Iron Age, focusing on its high degree of specialization and the evidence of a complex social organization. This settlement comprises a rare example in the south of France where such complexity can be perceived through urbanism and architecture.

In the last thirty years, a significant number of Iron Age settlements in Languedoc and Catalonia have been subjected to open-area excavations. They have provided a large amount of data on settlement types, urbanism and domestic architecture.

In the Iron Age of the Languedoc, from the sixth century BC, alongside small rural habitats, the most common type of settlement was the oppidum, a 'hillfort' usually covering several hectares and with a more or less regular urban layout. Oppida seem to have been the focal points of hierarchically-structured economic and political territories (Py 2012; Garcia 2014) (Fig. 1).



Figure 1. Map of the Golfe du Lion with the location of the main settlements of the Iron Age.

The urbanization process was a progressive one in southern France between the sixth and the fifth centuries BC. Fortifications normally adapted to the local topography appear to have been a key element in the internal layout of a habitat. Wattle-and-daub buildings separated by open spaces were gradually replaced by mud-brick constructions; quadrangular plans became widespread and from then on houses would normally be grouped into blocks separated by streets (Py 2012, 123–4; Belarte 2015).

These new structural patterns are linked to a more global evolution of Iron Age societies, simultaneous with a greater coherence acquired by the groups occupying these territories and proto-urban settlements. Most houses only had one or two rooms, corresponding to a nuclear family unit, and the architecture does not show any indications of social differences. In any event, such a new configuration of the habitat implies the existence of an authority able to impose rules regarding the distribution of space and the construction and maintenance of collective features such as streets or the fortifications itself (Py 2012, 162–70). Irrespective of regional or local specificities, this urbanization process is indicative of the progressive emergence of a public sphere alongside an extant one of private or domestic nature.

During the Late Iron Age, houses from Mediterranean Gaul undergo a number of structural changes. Thus, plans tend to become more complex, in the sense that the pattern of the two- or three-room (or even more) house is added to the previous one-room model. In this new scheme, some internal functional division develops; more precisely, this is reflected by a tendency to a major specialization of spaces – for storage, and again for the various household activities such as cooking, living and resting. However, such specialization remains limited or, at least, is difficult to discern, as many spaces appear to be of a multipurpose nature. This phenomenon is generally accompanied by an increase in overall surface-areas. In Lattara, a reference site for this period, most of the houses of the fourth to third centuries BC thus have an average area of about 60 m<sup>2</sup>, without displaying any great differences between domestic units (Py 2009, 108).

With regard to the Catalan area, settlement patterns during the Late Bronze Age and Early Iron Age were not homogenous. In the littoral and hinterland areas, settlements were (as in

Languedoc) composed of groups of houses built with perishable materials and separated by open spaces. In the interior regions (the Ebro and Segre valleys), settlements consisting of groups of houses with party walls, built of stone and clay, and separated by a street or a central open space, are attested from the end of the second millennium BC. Similar forms of urbanism appear in coastal Catalonia during the seventh and sixth centuries BC, as a result of both an internal process and external influences. These developments led to the formation of the Iberian societies from 550 BC onwards (Belarte 2009a). A complex hierarchical settlement organization has been detected during the Iberian period, particularly in the coastal area, with different levels of settlements recognized according to their size and function (towns of different scales, villages, fortified sites and rural settlements). This organization corresponds to a proto-state structure, at least by the Classical Iberian Period (fourth to third centuries BC) (Asensio et al. 1998; Sanmartí 2002), but also probably from the sixth to the fifth centuries BC (Sanmartí et al. 2006, 153).

Inside these settlements, houses had mainly rectangular plans, and were subdivided into a number of rooms that varied from two to twenty (including courtyards and porticoes). Their ground areas could also vary enormously – from 20 m<sup>2</sup> to 700 m<sup>2</sup>. There was a direct relationship between the size of the house and the number of rooms. Larger dwellings with multiple rooms are mainly composed of specialized activity areas, whilst the smaller houses have multifunctional spaces. Amongst the activities most commonly identified were food preparation, consumption, storage, milling, weaving, artisan tasks and ritual activities. Inside all the Iberian sites, there coexisted simple houses (of one to three rooms, with sizes up to 50 m<sup>2</sup>) with the more complex ones (often more of 100 m<sup>2</sup>, and with multiple rooms), the latter being interpreted as the dwellings of the elites (Belarte 2008).

### **Pech Maho: Location of the Settlement and History of the Research**

Pech Maho is in the municipality of Sigean, about 20 km south of Narbonne (Fig. 1). It is a fortified nucleus of 1.5 ha intra muros (an area to which some suburban structures should be added). It was occupied from the middle of the sixth century and destroyed as the result of a conflict at the end of the third century BC. It is situated near the mouth of the River Berre, with an ancient lagoon that once communicated with the sea and is now partially filled in (Fig. 2).



Figure 2. Aerial view of Pech Maho (© CNRS-UMR 5140).

The site is at the east end of the Corbières Massif and on the south edge of the Narbonne plain, near a natural pass towards the Roussillon region, a route that could correspond to the mythical Via Heraclea, replaced by the Via Domitia in Roman times. This sector coincides with the south boundary of a territorial entity centred on the main oppidum of Montlaurès (Narbonne), probably the Naro (or Narbo) of ancient sources (Barruol 1973). The abundance of Mediterranean imports found in the earliest phases of the site is remarkable. All this makes Pech Maho a coastal trading post, as well as a territorial marker at the interface of the trading areas of Empúries (Emporion) and Marseille (Massalia).

Excavation of the site began after the Second World War (Campardou 1957) and was carried out mainly by Yves Solier between 1960 and 1979. Despite the publications produced (in particular Solier 1965, 1968, 1976, 1976–78 and 1979; Lejeune et al. 1988), the largely still unpublished data prompted the resumption of studies on this important site in 1998.

After a comprehensive re-examination of the earlier documentation (Gailledrat and Belarte 2002) and a monograph devoted to the ancient phases of the site (Gailledrat and Solier 2004), in 2004 fieldwork was resumed by one of the authors (EG), with the emphasis on the recent phase of the settlement. Some matters have been only partially made known: specific elements of the material culture (Gailledrat et al. 2014; Curé 2015) the overall interpretation of the site as an emporion (Gailledrat 2014a: 235–42), while special emphasis has been placed on the defensive system (Gailledrat and Moret 2003) and the interpretation of the destruction and abandonment phase (Gailledrat 2014b; Gailledrat et al. 2017). The balance of documentation, both old and new, allows us now to undertake a joint study to scrutinize the functioning of the settlement during its last phase, the results of which we present in this paper.

## The Occupation Phases



Pech Maho was founded around the mid-sixth century BC. In the first phase of occupation, PM I (c.560–450 BC), an initial defensive wall associated with a V profile moat (c.560–540) was built. A major remodelling took place around 540 BC with the construction of an imposing defensive system composed of a double moat and two successive lines of defence arranged on terraces (Fig. 3). During the PM II phase (c.450–325 BC), the wall was strengthened. In the PM III phase (c.325–200 BC), it was further remodelled and the system of successive curtain walls fronted by a large moat was perfected. A carefully designed access system was also installed. The defensive system was now clearly monumental and ostentatious; it included devices to withstand sieges of Hellenistic influence (Beylier and Gailledrat 2009; Gailledrat and Beylier 2009) (Fig. 4).



Figure 3. The fortification of Pech Maho, with the successive ramparts (© E. Gailledrat).



Figure 4. The main entrance protected by a quarter-circle tower on its left side, viewed from the south-west (© E. Gailledrat).

As far as the internal organization of the habitat is concerned, after an initial brief occupation based on structures of perishable materials, a regular urban layout was adopted around 540 BC. Blocks of houses separated by streets were built and building techniques such as adobe and possibly lime-plaster are attested, one of the earliest cases of such in the indigenous context of the Languedoc region (Gailledrat 2010b).<sup>1</sup> Though the site underwent restructurings in the mid-fifth century BC, no major changes were made to the urban layout, which remained the same until it was abandoned. From that time on, however, a monumental architecture following Mediterranean patterns is documented: of particular note is a porticoed building, although it is unfortunately difficult to interpret. The appearance in the fourth

century BC is not well known. However, during the third century BC, an architectural programme that associated public spaces with buildings of a civic or religious nature was being implemented in the south neighbourhoods. As described in the following section, the Late Iron Age habitat would have been characterized by houses with several rooms, often associated with open or semi-covered spaces (Fig. 5).



Figure 5. Plan of Pech Maho during the third century BC.

Pech Maho suffered a brutal destruction in the last quarter of the third century BC, followed by acts of looting, fire and the mutilation of symbolic elements. After the destruction, ritual practices involving the slaughter of dozens of horses and the holding of banquets were performed. Eventually, a collective funeral pyre was built and a dozen individuals were cremated thereon: all set in a remodelled area previously filled with ashes and banqueting remains. This funerary episode brings to an end the history of the site, succeeding what appears to have been a closing ceremony (Gailledrat and Gardeisen 2010; Gailledrat 2014b; Gailledrat et al. 2017).

The Internal Organization of the Habitat During the Late Iron Age: The Urban Planning and Architecture of the PM III Phase

### The urban layout

The third-century-BC habitat (Fig. 4) was organized into blocks of buildings (termed îlots). They were separated by streets following a concentric pattern, where the peripheral blocks were built up against the defensive wall (whose layout was adapted to the topography) and the interior blocks were organized on a relatively regular north-south grid. On the western slope of the site (partially excavated), the blocks were staggered, being set on successive terraces. The urban planning was structured around several elements. Firstly, there was a square to the south (Square 1) (Fig. 6), accessed directly through the main gate, and a large street with a north-south layout (Street 7) that crosses the entire settlement from Square 1. Secondly, several peripheral streets (Streets 4 and 5) border the blocks adjacent to the wall, while others



that are roughly perpendicular (Streets 2, 3, 6 and 8) to them provide access to the rest of the habitat. With a few exceptions, the streets are 2.5 m wide.



Figure 6. Square 1, located after the main entrance, viewed from the north (© E. Gailledrat).

The shape of the blocks was determined by the physical limits of the construction area (the triangular platform on which the site is located) and, in the southern area, by the layout of the wall. The result is the creation of an irregularly-shaped block built against the wall (îlot I) (Fig. 5), whereas the central blocks (II and III), with fewer restrictions, had more regular ground plans.

Inside each block it is possible to distinguish one or more functional units (UNF). ‘Functional unit’ is a more generic term than ‘house’ or ‘domestic unit’ and is used to designate a building consisting of one or more rooms that functioned together, without necessarily being of a domestic nature (Py 1996, 142) (Tables 1-5).

Taula 1. Surface area of the different rooms and UNFs of îlot I

îlot	UNF	Floor area (m <sup>2</sup> )	No. of rooms	Rooms: m <sup>2</sup>
I	102/119	199.5	2	77/22: 36
				77/23: 39
I	101	30	1	77/21: 30
I	105	26.60	1	77/11: 26.60
I	108	30	1	77/10: 30
I	106	110	3	77/12: 24.60
				77/13: 32
				77/14: 32
I	107	43	4	77/15E: 6.40
				77/15O: 20.40
				77/6:14.28
				77/17: 9.98
I	103	124	5	77/1: 35

				77/3: 15
				77/2: 42
				77/6: 18
				77/7: 14
I	104	112	5	77/5: 38
				77/18: 18
				77/19: 10
				77/20: 11
				77/9: 35

Taula 2. Surface area of the different rooms and UNFs of ìlot II. (\*) Partially identified

Ìlot	UNF	Floor area (m2)	No. of rooms	Rooms: m2
II	111	390	13	79/1: 65
				79/2: 4
				79/3: 16.50
				79/4: 27
				79/5: 19.80
				79/6: 30
				79/7: 16.70
				79/8: 15.80*
				79/9: 28
				79/10: 12
				79/11
				79/12: 24
				79/13: 25.30

Taula 3. Surface area of the different rooms and UNFs of ìlot III

Ìlot	UNF	Floor area (m2)	No. of rooms	Rooms/m2
III	113	43.60	2	80/2: 15
				80/3: 28.60

Taula 4. Surface area of the different rooms and UNFs of îlot IV

Îlot	UNF	Floor area (m <sup>2</sup> )	No. of rooms	Rooms/m <sup>2</sup>
IV	110	46	1	72/2: 46
IV	109		5	72/5: 8.20
				77/4: 6.5
				72/3c: 15
				72/3b: 9
				72/2: 30

Taula 5. Surface area of the different rooms and UNFs of îlot X

Îlot	UNF	Floor area (m <sup>2</sup> )	No. of rooms	Rooms/m <sup>2</sup>
X	114 East	90	4	78/3
				78/6: 17.30
				78/5: 16
				78/: 28
X	114 West	40	2	78/4: 21.60
				78/7: 20.16

## Functional analysis of the buildings

### Îlot I

Îlot I is built against the southern wall (Fig. 7). It is bordered to the west by Street 2, a cul-de-sac that can be entered from Square 1, which is extended to the east by a small square that fronts a monumental public complex (UNF102/UNF119). The eastern limit is marked by a postern at the confluence of Streets 5 and 4. Street 4 gives access to most of the buildings, with the exception of a complex accessed from Street 2.



Figure 7. UNF 105 and 106 (îlot I), viewed from the west (© E. Gailledrat).

In addition to the above-mentioned public building, seven other units make up the block: UNF 101, 103, 104, 105, 106, 107 and 108, of varying surface areas, structures and functions, as described below (Table 1).

#### UNF102 and 119

Located in the western part of îlot I, this comprises two adjoining buildings (Sectors 77/22 and 77/23), preceded by a stepped-like podium (Fig. 8) with a large ashlar structure on top, which may have supported a portico (Fig. 9). In this area, a burial was also deposited and marked by a stele, placed on a semi-circular base built against the west wall of Room 77/22. Solier considered this burial to have been of a high-ranking person and suggested the complex was a heroon (Solier 1968). In the south part, on the extension of the podium and built against the wall, two small rooms are interpreted as chapels (71/7 and 71/8). One of them has a carved stone base, probably used to display an object, unfortunately lost.

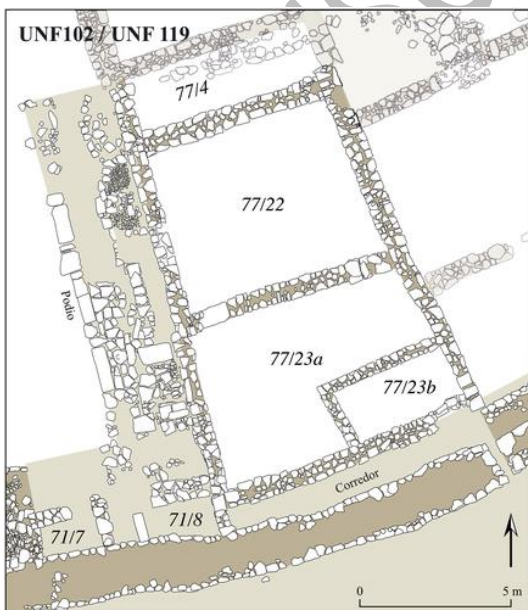


Figure 8. Plan of UNF 102 and 119.

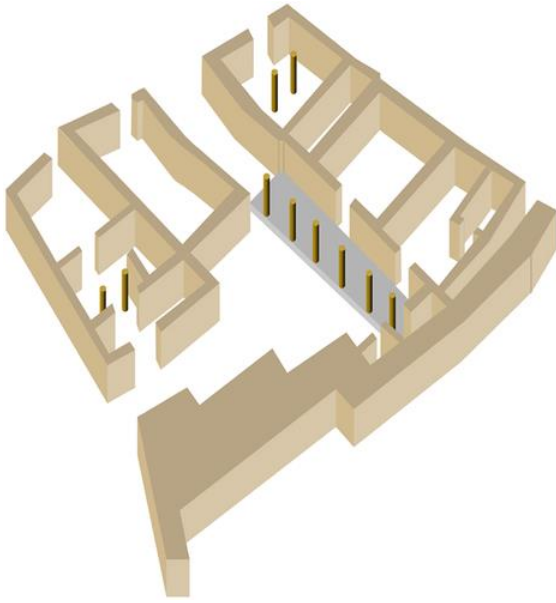


Figure 9. Axonometry of block IV and western part of block I, with hypothetical reconstruction of a portico in front of UNF 102 and 119 (© E. Gailledrat).

In the northmost building (77/22), no specific equipment has been documented. Among the pottery finds, black-glazed tableware for food and drink consumption predominates, which suggests that it was a place for commensal practices. The south building (77/23) has two spaces: a main room (77/23a) and an annexe on the south corner (77/23b). In the centre of the main room there is a small carved stone basin surrounded by three dolia and an amphora; in two more corners another dolium and a basin were also found. A devotional function has been proposed for this building and its annexes (Gailledrat and Marchand 2003; Gailledrat 2014a, 240).

#### UNF101

This is a one-roomed building (77/21) on the north-west edge of îlot I (Fig. 10d). Accessed from Street 4, it is attached to UNF102, but is not connected to any other spaces. It has a hearth in the north-west corner of the room and two dolia in the north-east corner; of particular note among the pottery finds are the amphorae and dolia. It is interpreted as a store.

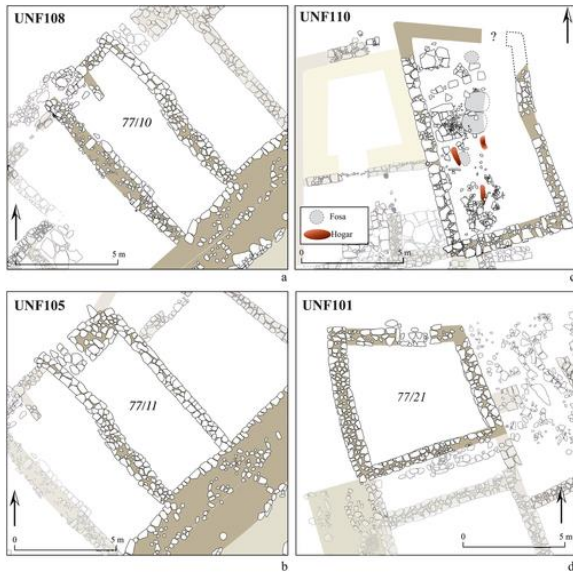


Figure 10. Plans of single-room buildings (UNF 108, 110, 105 and 101).

### UNF105

This also consists of a single room (Fig. 10b) accessed from Street 4 and does not communicate with the adjacent buildings. It has a small stone-paved area, as well as several hearths. The archaeological finds consist mainly of storage ware (dolia and amphorae), together with a set of lead sheets inscribed in the Iberian language and interpreted as documents of a commercial nature (Solier 1979). This building would also have been a store.

### UNF108

This consists of a single room (Fig. 10a) with several hearths, a pit containing metal objects, probably destined for recasting, and a stone-paved area in the middle. Several iron objects, including blacksmith's tongs, were identified near the pit. This room is interpreted as a metal workshop. Solier considered that both this building and the neighbouring UNF105 belonged to the same house, and would have comprised two non-communicating rooms. Although in previous publications we adhered to this proposal (Galledrat and Belarte 2002), the subsequent revision of the data leads us to interpret these two spaces as independent buildings, each with its own specialized functions.

### UNF106

This comprises a set of three rooms (Fig. 11b). From Street 4, one enters a room (77/12) with three lenticular hearths and a 1.50-m-long deposit bordered by vertical slabs. The absence of charred roof remains led Solier to interpret this space as a courtyard for both domestic (culinary waste) and artisanal activities (hearth associated with a deposit). This courtyard communicates with two rooms of a similar size and shape built up against the wall. They were destroyed by fire and covered by abundant charred remains.



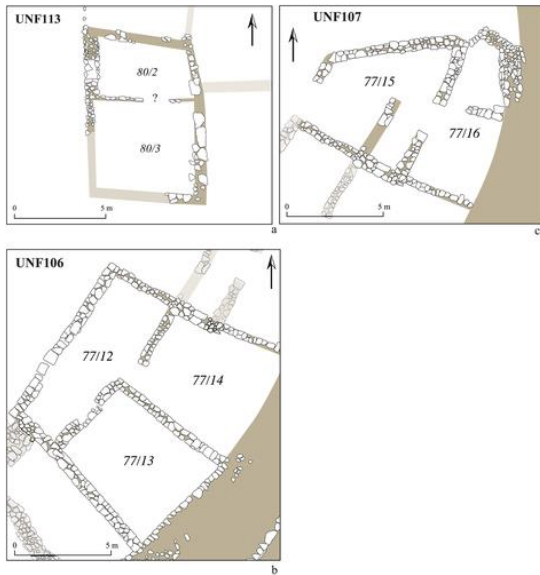


Figure 11. Plans of two-roomed buildings (UNF 113, 107, 105 and 106).

The south room (77/13) has a stone-paved area at the back. A lead disc (possibly a goldsmith's anvil), a pit filled with ashes and abundant pottery are documented. Solier interpreted this room as a specialized space dedicated to metallurgy or precious metal craftwork. Room 77/14 has a central fireplace and a stone bench against the wall. Most of the pottery is cooking- and tableware, as well as including small storage vessels, along with the large containers (Curé 2015). It also contains a complete rotating quern with its two parts (meta and catillus) intact.

In addition to domestic tasks, economic activities were carried out, as indicated by the presence of numerous graffiti inscribed on the Greco-Italic amphorae and four inscribed lead sheets. These records suggest that the dwelling may have belonged to a businessman, perhaps with an area where production and trade would be combined with secondary metallurgical activity. The large diameter (64 cm) of the querns suggests a non-domestic, artisanal function (Longepierre 2012, 445; Galledrat et al. 2014, 340): they would have been used for the production of flour for sale or to supply a group of people beyond the inhabitants of this building. Many of the amphorae had been altered to make them easier to fill and empty, having a cut-out bottom and/or top. The abundant small urns could have been used as measuring units. This building would therefore have been a flour production area linked to a cereal-product sales area.

### UNF107

Located on the north-east edge of Îlot I and communicating with Street 4, it comprises four spaces (Fig. 11c).

Room 77/15 in the north-west part of the building is divided into two sections: the east part is specialized and partially open-air, with an oven near the door leading to 77/16, an accumulation of slag in a small area bordered by stones, and a tuyère. The west area is multi-purpose in character with both artisanal and domestic activities. It has a hearth and a small

rectangular basin bordered by stone slabs. The archaeological remains are diverse: iron slag, cookware, tableware and two querns.

Space 77/16 has a hearth associated with objects that speak of a double function: on the one hand, domestic activities (storage ware and tableware associated with culinary waste), and on the other, forging (a tuyère associated with iron slag).

Room 77/17 was probably a living space, as it has no equipment and contains pottery of different kinds, as well as domestic waste.

The ensemble evokes an entity fundamentally oriented towards metallurgy, which also includes living spaces of a domestic nature.

### UNF103

A building with an elongated trapezoidal ground plan, located between UNF101 and 102 to the west and 104 to the east. It is made up of five communicating rooms, some of which were probably unroofed spaces (Fig. 12). Two courtyards can be accessed from Street 4: 77/1 and 77/3. A channel runs through 77/1 and ends in 77/3. The latter contains two monolithic structures, possible anvils, a deposit made of limestone, and slag. This would have been an area for metallurgical tasks. Room 77/1 gives access to a large central hall (77/2), the east part of which was probably unroofed and may have been a cooking area: here Solier identified five hearths; the west part, covered, would have been a storeroom. At the back of the building, there are two covered rooms built against the wall: Space 77/6, a storeroom containing amphorae, and 77/7, used for culinary tasks; the latter contains a small deposit full of culinary waste, a structure delimited by stones whose bottom is paved with dolia sherds, and abundant tableware and storage pottery.



Figure 12. Plan of a building of four rooms or more (UNF 103).

The data set suggests a functional interpretation similar to that of UNF107.

### UNF104

Trapezoidal-shaped building with an irregular façade at the level of Street 4, associated laterally with stone-paved areas forming platforms. It consists of five rooms of different sizes: 77/5, 77/18, 77/19, 77/20 and 77/9 (Fig. 13).

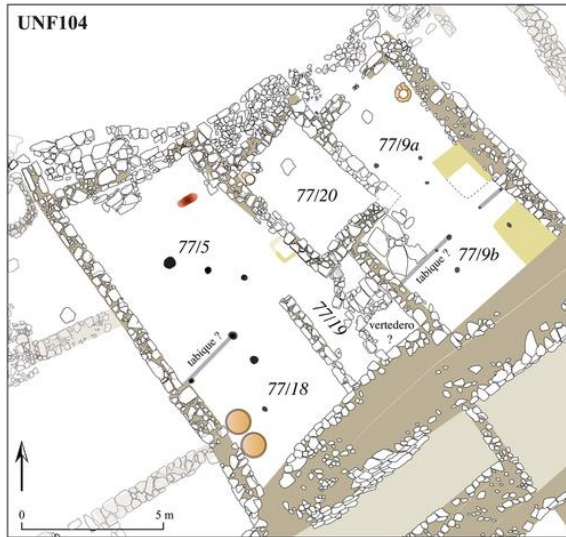


Figure 13. Plan of a building of four rooms or more (UNF 104).

Sector 77/5 is the main room, accessible from Street 4 or from Sector 77/20 to the east. In the north-east, an area of metallurgical activity is detected, with a fire pit next to two stones (one of which may be an anvil); it was probably a covered area, judging from a series of postholes that suggest an axial centre line. Room 77/18 is separated from the previous one by a probable light partition (?) indicated by smaller post holes. This is another covered space for storage, with two dolia bases buried in pits.

Sector 77/19 would have been an open space (?) of an indeterminate function. It has a quarter-circle structure that could be a connected with dumped material and is accessed via a series of steps.

Sector 77/20 is accessible from Room 77/5 to the west and perhaps from Room 77/9 to the east. It could have functioned as a small interior light well. A hearth associated with a large flat slab on the floor suggests a culinary preparation area.

Finally, Sector 77/9 is a covered area of complex interpretation. It makes an L-shaped plan conditioned by the location of Courtyard 77/20, with which it apparently communicates. Its front part, accessible from Street 4, with two hearths, could have functioned as a living and cooking space. The back area has two adobe benches and a stone-paved area (work or storage area?); several post holes suggest an internal division of the space. The absence of movable finds of precise functions prevents us from confirming whether it was a domestic space or one intended for other activities, including those of a symbolic or ritual nature. It would later undergo a remodelling, when the pyre that would close the post-destruction sequence was installed; this transformation suggests it already had a singular nature during Phase III.

## Îlot II: UNF111

This block has only been partially excavated and that not recently, but its structure and functioning are of great interest when compared to the other analysed blocks. It is composed of multiple rooms with a diversity of sizes (Table 2). Bounded to the north and north-east by Street 5, to the south and south-east by Street 4, and to the west by Street 3, it probably results from the joining, towards the end of the fourth century BC (Phase II), of two pre-existing double blocks, along with the annexing of a former circulation space (Fig. 14).

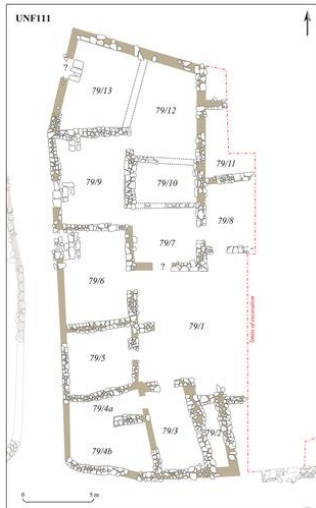


Figure 14. Plan of the complex building at block II (UNF 111).

The only known entrances are two doors that lead from Street 3 to Sectors 79/6 and 79/9 respectively. Many of the rooms that make it up communicate with what we interpret as an interior courtyard (79/1). This space has an earth and gravel floor. The archaeological finds are mainly pottery, storage wares (amphorae, dolia and domestic storage) and a smaller proportion of tableware, together with some metal objects (a knife and fragments of iron wheel rims, possibly from a cart). Fragments of a human skull are also mentioned.

Sector 79/2 is a small room without any equipment; probably a small pantry, it exhibits a predominance of storage ware. Room 79/3, also without domestic equipment, probably also had a similar function, together with some small textile activity attested by spindle-whorls. It communicates with Sector 79/4, which has provided but a few archaeological finds. To the north of this, Room 79/5, communicating only with Sector 79/1, has a large hearth (1.50 x 1.20 m) and a bench. The pottery is quite diverse. Sector 79/6 also communicates with Sector 79/1 and with Street 3 to the west, by means of doors with built thresholds, but not with the other rooms. In this sector, Solier also mentioned a hearth, but practically no other archaeological finds. To the north of Sector 79/1, Room 79/7 communicates with Spaces 79/8 and 79/9 by means of two doors, and perhaps also with Courtyard 79/1. It contained abundant storage wares (amphorae, dolia) and tableware and, to a lesser extent, small-scale storage and kitchen wares, along with culinary remains. Sector 79/8, which connects with the previous sector and with Courtyard 79/1, has only been partially excavated. In the western part of the building, Sector 79/9 communicates with Sectors 79/12 and 79/7 and has a small stone-paved area, perhaps for food preparation; it provided abundant pottery with a predominance of

tableware, followed by storage ware. Sectors 79/10 and 79/11 had undetermined functions. Room 79/12 connects to Room 79/9, while 79/13 was accessible from Street 3. The abundant and diverse pottery found in these two rooms was unfortunately not separated at the time of the excavation and consequently, it is not possible to be more precise about their individual functions.

The low-level of available data, particularly the scarcity of archaeological features and finds, often obscures the functions of the various rooms. Most look to be living spaces or pantries; the lack of traces of artisanal activity, especially metallurgy, as well as any other economic tasks, is noteworthy. The central position, at the highest point of the settlement, make it an ideal place for a large residence of an individual or group with a privileged status.

### Îlot III

To the west of the previous one, Îlot III is a double block, formed by two rows of rooms set in a north-south direction. It was very partially explored by Solier and there have been no more recent excavations. Only the north part of the block is known, and that but partially; it is bounded to the north by Street 5, to the west by Street 7 and to the east by Street 3, which separates it from Îlot II. Although its south part has not been excavated, we know it borders on Street 4, where signs of a burnt portico have been documented.

The known part of the block corresponds to UNF113, which consists of two rooms (Fig. 11a; Table 3). Sector 80/2, which was accessed from Street 7, contained a pit with the remains of a Greco-Italic amphora in situ. The pottery finds (especially amphorae) suggest it was a storage room or pantry. Room 80/3 would probably have been accessed from Space 80/2, although the doorway has not been identified. It appears to be a domestic space with a hearth and traces of reddened clay, as well as a 1.75-m quadrangular stone structure in its south-west corner. The pottery finds were sparse, with a predominance of tableware. Metal objects and iron slag were also documented. Together with the hearth, these suggest an artisanal activity related to metallurgy.

### Îlot IV

The construction of this building is part of an architectural layout around Street 2, which leads eastwards to the monumental complex already described in Îlot I (UNF102 and 119). When this area was reorganized (at the end of the fourth century BC), at the level of Street 2, a podium of large ashlar was built against the inner face of the defensive wall, with a staggered layout reflected precisely in the fourth-century-BC layout (Fig. 9). The block is made up of two buildings, UNF110 and UNF109: they do not communicate (Fig. 15; Table 4).



Figure 15. Block IV, alongside square 1. At the forefront, bases of pillar and baetyl, viewed from the south-west (© E. Gailledrat).

### UNF110

Composed of a single room (72/1) (Fig. 10c), the building was initially accessible from Street 8 and later from Street 4. It is an independent building of a specialized nature devoted to metallurgical activities, specifically to forging. It contained a series of small fire pits associated with three stone-paved work areas. Several dolia could have held a reservoir of water, supplies for tempering the metal. This specialized activity is related to some accumulations of ash, coal and slag.

### UNF 109

A complex building consisting of five spaces (Fig. 16), it is accessed from Street 2, which communicates with a hall (72/5) that leads to a small room (77/4) of an undetermined function. This leads to an inner courtyard (72/3a), through a door framed by two pillar bases that would have given an ostentatious appearance to this area. The east part of the courtyard is occupied by a small covered room, partially stone-paved (72/3b), with a double-leaf door: this is interpreted as a pantry. Finally, Space 72/2, which communicates with Sector 72/3, has earthen benches built against all its walls and contained, at the destruction level, a large amount of dolia sherds in situ. It is interpreted as a collective storeroom.

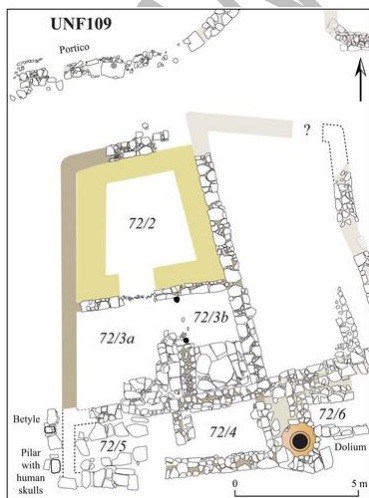


Figure 16. Plan of a building of four rooms or more (UNF 109).



## Îlot X

This is located in the central area of the settlement, bounded to the north by Street 5 and to the south by Street 6. It is made up of buildings situated on different terraces following the slope of the land, but which are probably part of the same functional unit (UNF114) (Fig. 17; Table 5).



Figure 17. Block X, viewed from the south (© E. Gailledrat).

The east part corresponds to a building with four rooms, accessible from Street 5 in the north and Street 6 in the south. From the latter, a narrow corridor (78/3) leads to a courtyard (78/6) that opens northwards onto Street 5. The courtyard also leads to a small room (78/5) that contained a large number of amphorae and dolia, exceeding the needs of a domestic reserve. It communicates to the south with a possible residential room (78/2) that has a central hearth and an earthen bench at the south-east corner (Fig. 18).

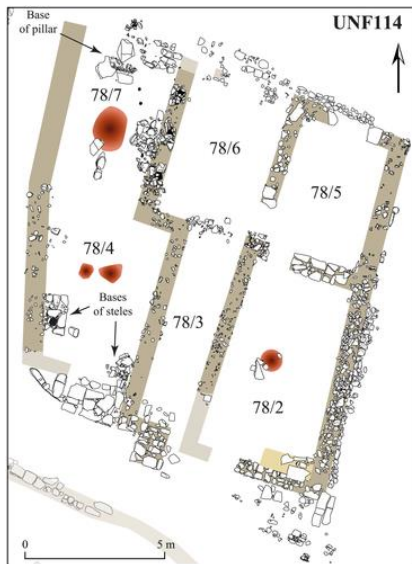


Figure 18. Plan of a building of four rooms or more (UNF 114).

Courtyard 78/6 is also linked to Room 78/7, belonging to a second building (in the western part of the block): the wall that initially separated both spaces was demolished and replaced by a series of post holes. The arrangement suggests a façade with openings overlooking the adjacent room, that is situated at a slightly lower level.

The structure of this building is totally atypical in the settlement. It probably results from the evolution of a courtyard house that occupied the entire block and was composed of a courtyard and several rooms. From a functional point of view, the combination of living and storage spaces suggests that the building was the residence of a merchant. Space 78/5 would have housed a stockpile of goods for small-scale trading: in this it differs from the storeroom documented in Îlot IV, which would have been a collective space.

The west part has resulted from the partial transformation of a previous house with a more regular plan. Its main element is a covered gallery that opens both to the north and the south; it includes two sectors (77/4 and 77/7) without any physical separation. To the south, Sector 78/4 has two hearths and steps leading down to Street 6; to the north, Sector 78/7 also has a central hearth and several paved areas.

Among the features of this building, two probable cavities for stelai stand out in 78/7, as well as a stone-paved area that would have served as the base for a pillar. These, like most of the symbolic elements, were dismantled at the time of the destruction of the settlement or shortly after, presumably as the original inhabitants recovered the desecrated elements. During this operation, a fragment of a human skull must have fallen to the ground. This gallery was therefore arguably a place for displaying religious symbols and probably for holding rituals. This strong association of both economic and ritual matters in the same building is not, as far as we know, repeated in any other area of the site. However, Îlot IV, which was devoted to economic activities and had an important ostentatious aspect, has also provided devices with a strong symbolic value (a baetyl and the bottom of a pillar, of the sort where human skulls were displayed) in the nearby Square 1. The proximity of Square 1 (potentially important for organising economic and social activities) undoubtedly played an additional role in creating the uniqueness of this block.

## Discussion and Conclusions

The urbanism of Pech Maho during its last phase of occupation is characterized by a complex arrangement, one that is part of a well-established tradition of urban development in the south of France during the Second Iron Age. As in other oppidum-type settlements, the irregularities in the urban layout were mainly the result of the local topographical conditions. The case of Pech Maho also presents certain important peculiarities with respect to other settlements in the area.

Particularly noteworthy is the wide variety of buildings documented, both from a formal point of view and in terms of their footprint-area and the number of rooms. It is therefore not possible to speak of an equal distribution of space. The diversity of constructions also makes it difficult to offer a typological proposal for them as functional units, since many have a ground plan or distribution unique within the settlement, which is anyway further atypical with respect to most of the sites in south Gaul. The latter settlements are dominated by rooms of similar sizes and proportions arranged in narrow, elongated blocks, as in the second habitat of Martigues (Chausserie-Laprée 2005, 98) or Les Castels at Nages (Py 1978, 153–5). At Lattara we find greater variability, with large courtyard houses from the mid third century BC onwards

(Dietler et al. 2008), but in this period most of the buildings belonged to standardized models, characteristic of the indigenous architecture of the Late Iron Age (Py 1996).

The simplest type of construction documented at Pech Maho is a one-room building without internal partitioning (UNF 101, 105, 108 and 110). From the functional point of view, buildings of this type are always of a specialized nature (craft or storage), unlike the unicellular and multifunctional houses that constituted the basic type of house in south Gaul during the Iron Age (Dedet, 1999, 331; Py 2012). These are also documented in other regions of the Mediterranean, such as the Iberian area (Belarte 1997, 2010 and 2013; Belarte et al. 2009).

Units with two, three or four rooms are also present, e.g. UNF113, 106 and 107. In Gaul, two-roomed buildings correspond to Michel Py's Type 2 (1996, 229–32); they are usually domestic units with a front space for cooking and a rear storage room. At Pech Maho, UNF113 (comprising a workspace and a domestic room) probably corresponds to this model. As for the functional units with three or four rooms, UNF106 (and probably also UNF107) consists of a patio or space at the front, which gives way to two covered rooms at the rear. This type of floor plan and layout is attested in the south of France from the fourth century BC, for example at Lattara, where the courtyard served culinary functions and the back rooms were living and storage spaces (Py 1996, 226–7, 230). As already described, the organization of UNF106 and 107 reflects a somewhat more complex situation, with specialized spaces. This indicates, as in the case of UNF113, that they are not simply houses, but buildings where economic activity played an important role.

Comprising five rooms, UNF109 is of a clearly original structure and function. Particularly noteworthy is the grandiose nature of the central room around which the rest of spaces are organized: storage spaces, as well as rooms related to economic activities.

Other complex buildings, with four or more rooms (UNF103, UNF104, UNF114 or UNF111), share a single common element: the presence of one or more open spaces. However, they otherwise differ, depending on the distribution of the spaces.

UNF103 is built against the wall and consists of six rooms. Only the front ones, with an artisanal function, are accessible from the outside. Circulation inside the building is thus linear and it is necessary to go through other spaces to reach the central room (living area), which is partially covered, and the rear rooms (storerooms), so that little privacy existed for the front spaces. This linear distribution is in common with UNF106 and 107: it derives mainly from the organization of the block, the rear of which abutts the city wall.

UNF 104 is the result of the juxtaposition of two distinct sets of rooms, partially separated by an open space whose main function was, as in the previous case, to provide light for the adjacent rooms. In addition, as in other buildings in Îlot I, the domestic nature of the spaces is reduced, compared to the importance of the economic activities, particularly craftwork.

UNF114 corresponds to another unique model at the site. Its atypical ground plan, as well as the rounded shape of its south-west corner, suggests that it is based on an earlier building, probably with a more regular ground plan. The layout is similar to that of the pastas houses, those defined by a corridor giving access to the different rooms, according to a model known

in the Greek world, that of the 'Olynthus type' houses, and also documented in Olbia de Provence (Bouet 1997). In its original state (fourth century BC), prior to the remodelling of the west part of the block (the devotional space), the layout of the rooms seems to have been completely symmetrical on both sides of the corridor that led to the inner courtyard. This building could be associated with Greek models, either as a borrowed style or because it was originally the residence of a Greek merchant, a hypothesis that is entirely plausible, given the previously mentioned emporium-like nature of the site.

UNF111 also represents a model, unique to Pech Maho. It is organized around a courtyard from which multiple rooms lead off. This layout possibly results from the transformation of two previous double blocks that were joined into a single building and incorporated, transformed into the yard, a previous circulation space that separated these two buildings.

From the structural elements described, the presence of open spaces in different types of functional units stands out. Such are not uncommon in south Gaul, where there are other examples of both front-courtyards or porticoes and central-courtyards that articulate the circulation inside the house (Belarte 2009b, 243–51). This last type of building is documented between the third and first centuries BC in the study area and has been put down to Mediterranean influences deriving from Hellenistic and Italic models (Py 1996, 249). They include examples in which the courtyard occupies a lateral position: such appear to be indigenous adaptations resulting from an internal local evolution (Dietler et al. 2008; Belarte 2009b, 247); they are similar to UNF111. The courtyards or open spaces are also recurrent in the Iberian world, with examples in Pontós (Pons 2002, 131), Ullastret (Martín et al. 2004, 268), Alorda Park (Asensio et al. 2005, 603), Castellet de Banyoles (Asensio et al. 2012, 178; Sanmartí et al. 2012, 55), Bastida de les Alcusses (Vives-Ferrándiz 2013, 106) and El Oral (Abad and Sala 1993; 2001, 151 and after). More specifically, the distribution of spaces in UNF111 is similar to Houses 1 and 2 at Pontós. Its surface area, nearly 400 m<sup>2</sup>, is comparable to both French examples such as Lattara (Dietler et al. 2008, 113 and 115) and Iberian examples such as Pontós (Pons 2002, 121). It should be noted that, as in the above-mentioned Iberian examples, this house is the result of a possible joining of two earlier buildings, including in this case the incorporation of a former circulation area.

As far as the function of the buildings is concerned, it is worth emphasizing the importance of economic activities in the settlement, both in domestic units and in specialized buildings. Among the attested activities, those of artisanal nature stand out, especially iron metallurgy, together with the storage and processing of cereals, the latter sometimes accompanied by evidence of commercial activity. Although these activities are not absent from other oppida in the area, their presence is usually more restricted and scarcely to be differentiated from the domestic level, even in large agglomerations that otherwise evidence intense commercial activity, such as Lattara.

Other important elements are architectural features of an ostentatious nature, such as column bases or porticoes. They are located in areas which seem to be reserved for symbolic or representative functions. Moreover, there is evidence that rituals were held in certain spaces.

To these two factors – economic and symbolic – we must add the scarcity of buildings of a strictly domestic nature, as well as the absence of simpler housing, contrasting with the situation at most archaeological sites in the region. We can surmise that there existed residential neighbourhoods with simpler houses in other parts of the site that have not yet been excavated, but even so a large number of complex buildings has already been documented, among which the courtyard house (UNF111) stands out. To date, this is the building that is most nearly of a domestic or residential nature, though it contains even so evidence of artisanal activities. Its size far exceeds that needed by a nuclear family, suggesting that it was either occupied by an extended family or by a socially prominent group, interpretations that are not mutually exclusive. The possibility, already mentioned, that this house was formed by joining two previous dwellings into one, could be related to an expansion of the household. This restructuring also included the annexation of a former circulation space, which implies that the occupants had the power to privatize part of erstwhile public space. In the Iberian area, a similar phenomenon of public space appropriation is documented at Ullastret, in the house in Zone 14 (Martín et al. 2004).

Returning to UNF111, the choice of a central position allowed the construction here of larger and more regular spaces, without the constraints imposed by the wall or other settlement boundaries, which broadly determined more irregular plans. It is also located at the highest point of the settlement. All this suggests it would have been the seat of an elite element that exerted its authority over the population living in the outlying blocks, as well as being in control of the stores and workshops; in other words, the management of this economic enclave.

At this point, we must reflect on the functional organization of the settlement and its buildings, the role played by this large residence and how it related to the rest of the buildings in which economic activity predominated.

Among the specialized spaces, some belong to larger functional units. Thus, UNF106 and 107 could have been domestic units whose occupants engaged in economic activities (trade in cereal products and derivatives in the former; metallurgy in the latter). The same can be proposed for UNF103 and 104, which were devoted to metallurgy. In other cases, the specialized spaces are single room buildings with a small surface area that may have been simple workshops, as well as doubling as small single-room dwellings. In the first case, the question arises of where the artisans lived, since there is no evidence of blocks of houses, except for the large residence in îlot II or, perhaps, îlot III, very little of which is known. The second option should not be ruled out, as such spaces usually contained hearths and other domestic elements (although the hearths may have had an artisanal purpose); in this case, the small size of the spaces suggests that they were the homes of dependent people.

Finally, there are other specialized spaces that do not seem to have been part of domestic units. This is the case of UNF109, which, in addition to a dolia storeroom, had reception rooms, but lacked domestic elements. Because of its location, to the south of îlot II, it may have had a direct dependence on the occupants of that building.

By and large, due to the activities and types of buildings documented, Pech Maho cannot be considered on the same level as the other oppida in the region. It appears to have been an unusual enclave combining economic, symbolic and probably political functions: it has therefore been defined as an emporion (Gailledrat 2010a; Gailledrat 2014a, 235–42). From the functional or structural point of view, it has certain similarities with the specialized economic settlements of northern Iberia, such as Mas Castellar de Pontós (Pons 2002) or Font de la Canya (López 2015). Both of these consist of a small habitation area (in which the presence of complex houses stands out) that managed an important area of silos for storing grain intended for trade, which in turn is evidenced by high percentages of imported materials. In the case of Pech Maho, the residents of Îlot II – and perhaps others as yet unidentified – would have controlled the economic activity related to the redistribution of Mediterranean imports, the working of iron metallurgy and the production, processing and trade of cereal products.

The economic functions are distributed around this vast, centrally-located complex house UNF111, one that is also close to symbolic elements such as the public complex at the end of Street 2 (UNF102 and 119) and Square 1. These were monumentalized by a portico to the north and perhaps to the west, where are attested a baetyl (or stele?) and a pillar to which human heads would have been nailed. These symbolic elements are related to worship and the severed-heads ritual, which is clearly part of the Celtic world. This ritual is also found further south in the northern Iberian culture, as evidenced at sites such as Ullastret (Codina et al. 2011, 158). Some complex houses at Iberian sites have a specific room for ritual activities, for example Room 3 in House 1 in Pontós (Pons 2002, 131), or certain spaces in the dwellings of the north quarter of Alorda Park (Asensio et al. 2005, 603). At the moment there is no clear evidence of such spaces in the complex house at Pech Maho (UNF111), but the case of UNF114 shows the overlapping of ritual functions in a space devoted to other purposes.

The analysis of Pech Maho in the third century BC shows, therefore, that it was not a settlement of a strictly residential nature. To the concentration of economic and symbolic features, other elements can be added, such as disproportionate fortifications and the other unusual traits in architecture and urbanism, which all demonstrate the expression of power. The complex house of Îlot II (UNF111) acted as a hub around which the various activities carried out in the blocks explored to date were organized, making it an crucial element for understanding the site. The political dimension, linked to the presence of a restricted group of individuals holding a form of power, prevailed over the economic and symbolic dimensions. This concurrence suggests an emporion, a place of meeting and trade under indigenous control, where both transactions and the security of goods and people were guaranteed by both a civil and a religious authority.

The set of characteristics described above gives cause for reflecting on the definition and interpretation of the settlements in south Gaul, which, as stated at the beginning of this paper, are generically known as oppida. It is necessary to characterize these settlements more precisely from the functional point of view, as well as to search for specific terms suited for each type or category.



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