

Monumentality in wood: a preliminary approach to timber circles of Late Prehistory in South Portugal

Monumentalidad en madera: una aproximación preliminar a los círculos de madera de la Prehistoria Tardía en el Sur de Portugal

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In memory of João Carlos de Senna-Martinez

Abstract

In the ceremonial architecture of the Iberian Late Prehistory, wood has been considered essentially as an accessory raw material for construction. This paper presents two contexts (Outeiro Alto 2 and Perdigões, southern Portugal) which, for the first time, show the presence of wooden monuments. These are concentric circles of posts and wooden palisades, exclusive in the peninsula, and which find the closest parallels in Northern and Central Europe. Contextual data and available chronologies are presented, developing a first set of considerations on the importance that this type of monumental architecture may have had in the context of the trajectories of social complexity in the second half of the 4th and 3rd millennium BC.

Key words: Monuments, Timber Circles, Late Prehistory, South Portugal

Resumen

En la arquitectura monumental y ceremonial de la Prehistoria Reciente peninsular, la madera ha sido considerada fundamentalmente como una materia prima accesoria para la construcción. Este texto presenta dos contextos (Outeiro Alto 2 y Perdigões, sur de Portugal) que, por primera vez, muestran la presencia de monumentos de madera. Se trata de círculos concéntricos de postes y empalizadas de madera, exclusivos en la Península, y que encuentran los paralelos más estrechos en el norte y centro de Europa. Se presentan los datos contextuales y las cronologías disponibles, desarrollando un primer conjunto de consideraciones sobre la importancia que este tipo de arquitectura monumental pudo haber tenido en el contexto de las trayectorias de complejidad social en la segunda mitad del IV y III milenio antes de Cristo.

Palabras clave: monumentos, Círculos de madera, Prehistoria Reciente, Sur de Portugal

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1. Introduction

The investment in monumental forms of ideological display is an important variable to understand and explain the development of Neolithic societies in Prehistoric Europe (Bradley, 1998; Scarre, 2002; Risch, 2018; Müller et al., 2019; Gebauer et al., 2020), for the building of monuments, more than just a by-product of social and economic developments, was actively engaged in the construction of social life (Valera, 2020a). Using locally available resources (or transporting them from more distant areas), integrating them with natural features (already invested of meanings) or generating new scenarios, the building of monuments helped to organize time and space, and was a practice central to the cosmological order and material life of these communities, acting in the construction of their social relations. In this context of the growing symbolic experience and organization of the world, raw materials were not just tools and elements for construction, only to be approached in terms of technology and labour cost. Paying attention to their physical properties and locals of provenance, and using them metaphorically and as text, raw materials were activated in the social performance of the monuments, in their meanings and biographies. The ways in which stone, earth and wood were used, combined, or rotating in the biography of a given monument, went behind issues of disposal, convenience, and technology, to express aspects of the worldviews, such as “essential attributes” or perceptions of time, life, or death (Bradley, 1998; Parker Pearson and Ramilisonina, 1998; Tilley, 2001; Scarre, 2004).

In this context, one of the major raw materials used to build monuments in many European regions during the Neolithic was wood. However, in the Iberian Peninsula, wood monuments have never been found, what could suggest that it was not an option as a main raw material for the construction of monuments, that were made of stone / clay / earth, and where wood was just an accessory material, mainly for construction purposes. This would be a divergence with what was happening in Continental and Northern Europe at the time, with Timber being left out of the monumental discourse in Iberia,

and the situation of south Portugal (the target area of this paper) was no different from this more global scenario.

In fact, the use of wood in the architectures of the Late Prehistory in Iberia was known mostly from domestic structures, where it is present as a main element in houses or combined in structures predominantly made of stone and / or clay or partially underground (Bruno, 2001; Pastor Quiles, 2021). One of the major examples is the Spanish site of La Draga, with its well-preserved timber contexts (Campana, 2018), but other features point to wooden dwelling constructions. In Portugal, at Castelo Belinho (Gomes, 2008) or at the site of Senhora da Alegria (Valera, 2023), evidence suggests the existence of long houses made of wood, as in the later Proto Historic sites of Central Meseta (Morín de Pablos and Urbina Martínez, 2012). Post holes from huts have also been documented in central Portugal, such as the open site of Ameal (Senna-Martinez, 1995-1996). Circular huts with grooves for posts are known in Chalcolithic sites such as Perdigões, Vila Nova de Mil Fontes (Valera and Parreira, 2018), Marroquiés Bajos (Zafra de la Torre et al., 1999) or in Casetón de la Era (Crespo Díez et al., 2015) and several other sites in the Douro valley (Fonseca de la Torre, 2021). Isolated or scattered post holes are known in many different sites across the country, such as the walled enclosure of Castanheiro do Vento in the north (Vale, 2010), or the ditched enclosure of Santa Vitória in the south (Dias, 1996). Wood post architecture is also found in palisades in some enclosures, like La Revilla (Rojó Guerra et al., 2008: 60-64) in Northern Meseta, and Moreiros 2 in south Portugal (detected through geophysics — Valera et al., 2013a), or suggested by the presence of some wooden posts discarded inside ditches in the northern site of Forca (Cardoso, 2008). In megalithic monuments, tree trunks were used as a tool in the construction, as traditionally assumed. But in the Dolmen of Areita (Gomes et al., 1998) there is direct evidence of the use of tree trunks in the shoring of the monument, and in some tholoi monuments they are part of the building, supporting the roof stones. In general, though, the use of wood has been documented

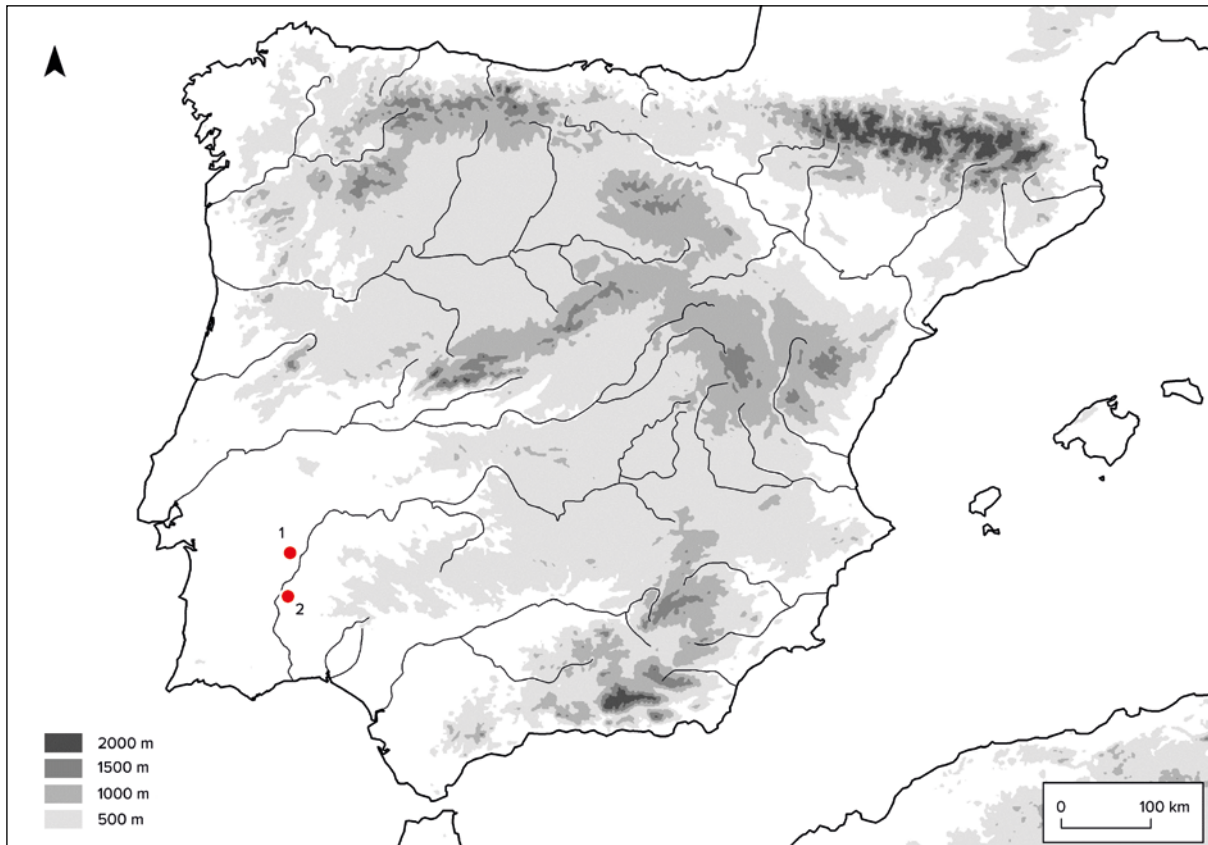


Figure 1. Location in Portugal of Perdigões (1) and Outeiro Alto 2 (2)

Figura 1. Ubicación en Portugal de Perdigões (1) y Outeiro Alto 2 (2)

for domestic buildings and suggested as tools for both monumental and more quotidian building activities.

However, recent discoveries in South Portugal showed that monumental wooden structures of a Northern and Central European “flavour” were also present in Iberian landscapes of Late Prehistory. In fact, the current situation reminds us of what recently happened with ditched enclosures. They were absent or rare until almost the end of the last century, but suddenly tens of examples emerged in several Iberian regions, such as Alentejo (Valera, 2012; Valera and Pereiro, 2020), Extremadura (Hurtado et al., in press), Andalusia (Márquez Romero and Jiménez Jáimez, 2010), central Meseta (Díaz-del-Río, 2003), north Meseta (Delibes de Castro et al., 2014), or Valencia region (Bernabeu et al., 2012). So, and as an educated guess, the cases to be presented here might very well be the top of an iceberg, representing another Iberian late catch up with the Neolithic Europe.

2. The archaeological evidence

The archaeological evidence of Prehistoric timber monuments in Portugal is still restricted to the south, in the inner Alentejo province (figure 1), consisting in two sites, Outeiro Alto 2 and Perdigões, although some other possibilities have been suggested for some other contexts in the region (Gomes et al., 2015) that are of more dubious interpretation.

2.1. Outeiro Alto 2

The first case to be identified was in Outeiro Alto 2, located in the municipality of Serpa (lower Alentejo). It is a site with three major phases corresponding to a necropolis dated from the Late Neolithic (Valera and Filipe, 2012), a Chalcolithic ditched enclosure (Valera et al., 2013b), and a Bronze Age necropolis (Filipe et al., 2013). At the Late Neolithic necropolis three funerary hypogea and a pit grave surrounded a group of concentrated pits of

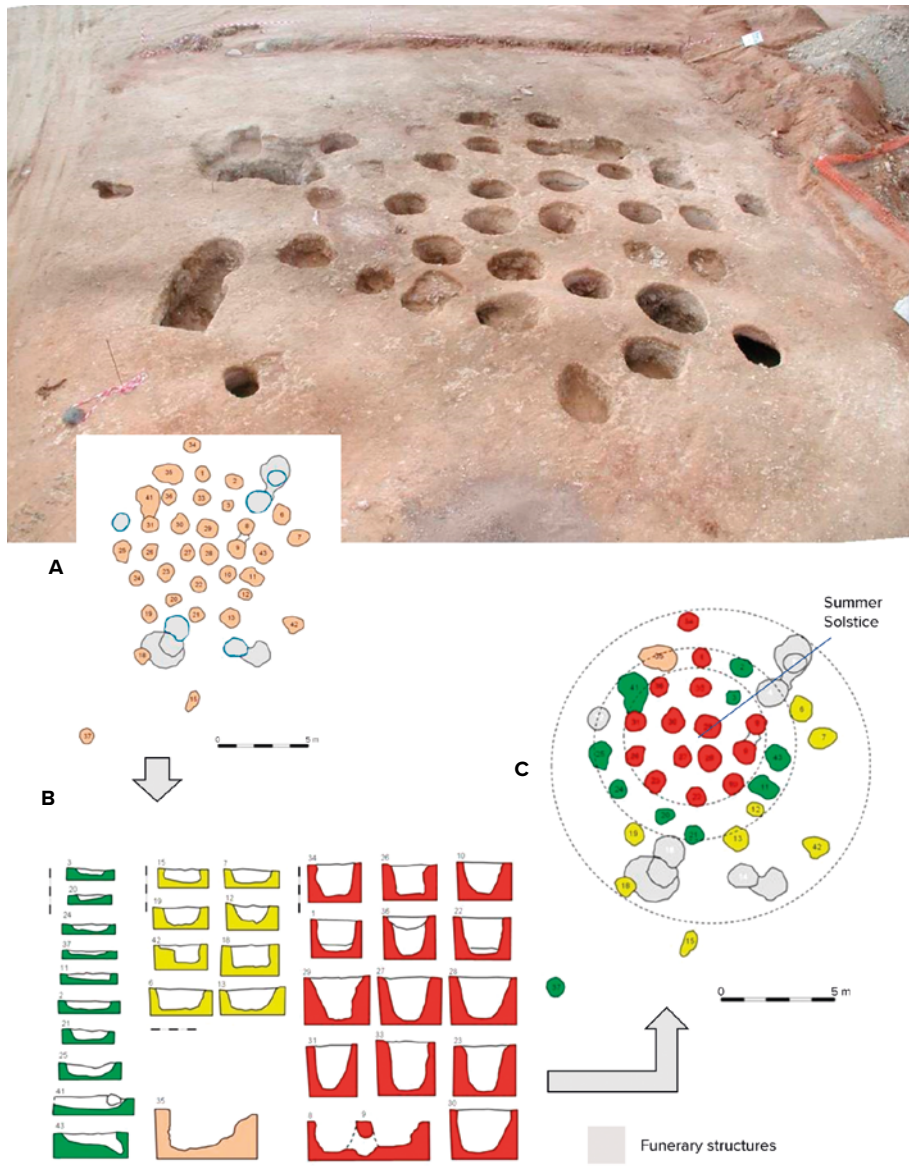


Figure 2. Outeiro Alto 2. A. View and plan of the assemblage of pits surrounded by the funerary contexts; B. Typification of the pit sizes; C. Pattern obtained by plotting the pit types over the plan

Figura 2. Outeiro Alto 2. A. Vista y planta del conjunto de fosas rodeadas por los contextos funerarios; B. Tipificación de los tamaños de los fosos; C. Patrón obtenido al trazar los tipos de pozos sobre el plano

different sizes, where a few small fragments of pottery were collected (figure 2A). There is just one radiocarbon date (17B / 0421 - 4590±40BP: 3514-3425 cal BC — Valera, 2020b) for hypogeum 14, but the general assemblages (architecture, body treatments and votive materials) are consistent with other hypogea cemeteries of the same region, such as Sobreira de Cima, Vale de Barrancas 1 and Quinta da Abóbada, well dated to 3600-3100 BC (Valera, 2020b).

The dimensions of the pits clustered in three groups, with just one outlier (figure 2B). Ten pits presented an average depth of 0,2m, eight an average depth of 0,42m and fifteen were deeper, with an average of 0,87m. The plot of these clusters over the plan of the pits revealed a pattern (figure 2C). The deepest ones formed a tight circle with four pits in the centre (creating a square), suggesting the foundations of a timber circular structure. The circle, with a diameter of 6,6m, is opened at the northeast

section, eventually related to the summer solstice, and is extended by two posts to the north. This timber circle is surrounded by the smallest pits, with one precisely at the “entrance”, that hypothetically could have held small standing stones surrounding the timber uprights. The use of small standing stones or stelae is known in other hypogea necropolises of the region, such as Sobreira de Cima and Vale Barrancas 1 (Valera, 2013; Valera and Nunes, 2020). This structure is then surrounded by the four funerary contexts, while the pits of intermediate size are scattered in the southern and eastern quadrants, with an apparent association to the hypogea, but not to the pit. This patterning is consistent with a timber ceremonial construction (and was interpreted as such — Valera and Filipe, 2012), eventually combined with small standing stones, that structured funerary contexts and practices.

2.2. Perdigões ditched enclosure: the timber circle in the central area

The second case was reported in Perdigões, a well-known set of large ditched enclosures, located in central Alentejo (Reguengos de Monsaraz municipality). It has a long chronology (between 3400–2000 BC) with a complex sequence of occupation and has been investigated for the last 25 years in a research program directed by ERA Arqueologia (see <https://perdigoes.org/en/bibliografia/> for the long list of publications). Since 2009, one of the research lines was directed to the central area of the enclosures (figure 3A), where a complex sequence of occupation covering the complete chronology of the site was identified. There, a unique timber circle, still with no parallels in Iberia, has been in excavation for the last three years. Its uniqueness and obvious importance in the context of Iberian Later Prehistoric monumental architecture justifies an initial publication of the available data.

2.2.1. Building process and architecture

As the excavation is still ongoing, the complete plans of the structure and of its possible phases of construction and use are not yet available, and several

questions are still to be resolved and answered. So, the data and interpretations presented here are preliminary.

The construction started with the excavation of a semi-circular area of the underlying geology, with a diameter of 22m (peripheral arrows in figure 3B). This excavation was done to level the bedrock, that sloped from West to East, and cut previous Neolithic structures in the process: some pits from the late Middle Neolithic (3400–3300 BC) and three ditches (ditches 5, 6 and 12) from the Late Neolithic (3300–2900 BC). The timber structure was then built within this excavated area.

It is perfectly circular, with a diameter of 19,40m. The already exposed areas (figure 4) correspond to the northern sector, part of the centre and the southern external limits. The northern part represents the biggest exposed area of the foundations of the structure (figure 4A). There, several rows of concentric features excavated in the bedrock are visible, along with others that are later and sometimes difficult to discriminate, generating a palimpsest of features. Nevertheless, the available plan clearly shows a timber circular construction with several concentric palisades and rows of post holes.

The most external feature (SU678) corresponds to a small ditch or groove (0,30m wide at the top, 0,14m at the bottom, and 0,28m deep), containing large and regularly spaced post holes and filled with packing stones (figure 4A and 5A). Its southern limit was also partially exposed and excavated, showing the same characteristics and its circular trajectory (figure 5C). It represents the foundations of a palisade (Palisade 1), built with spaced larger posts, and with smaller posts in between and fixed in the ditch with stone packing.

Inside, and just 28cm apart, a second small ditch (SU692, 0,30m wide at the top, 0,12m at the bottom, and 0,20m deep) runs concentric to the first (figure 4A and 5A). In all its northern section there is no evidence for post holes or packing stones (just a few scattered stones), suggesting that it might be just an internal “empty” demarcation feature and not a foundation for wooden uprights.

A third concentric feature is a ring of large circular post holes (21 are already visible in the north

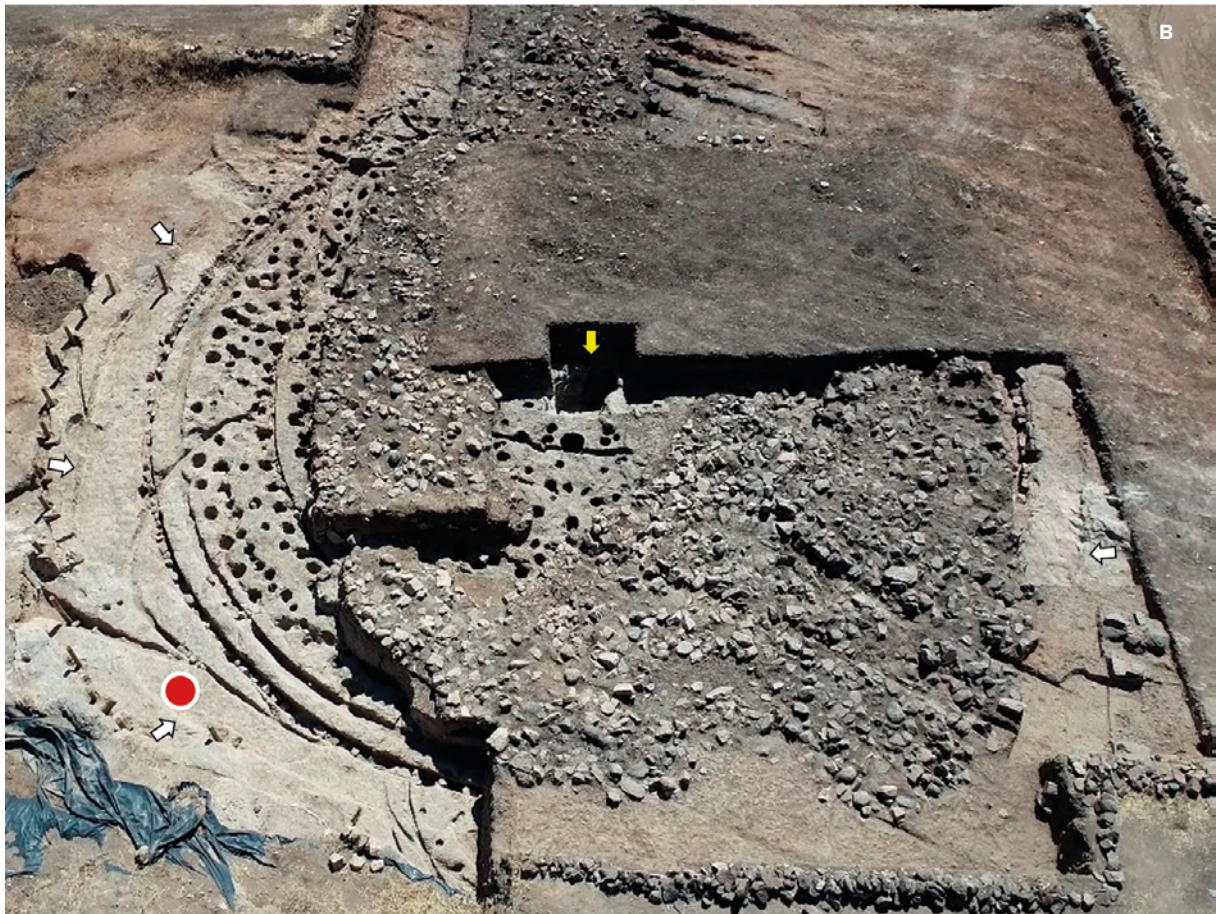
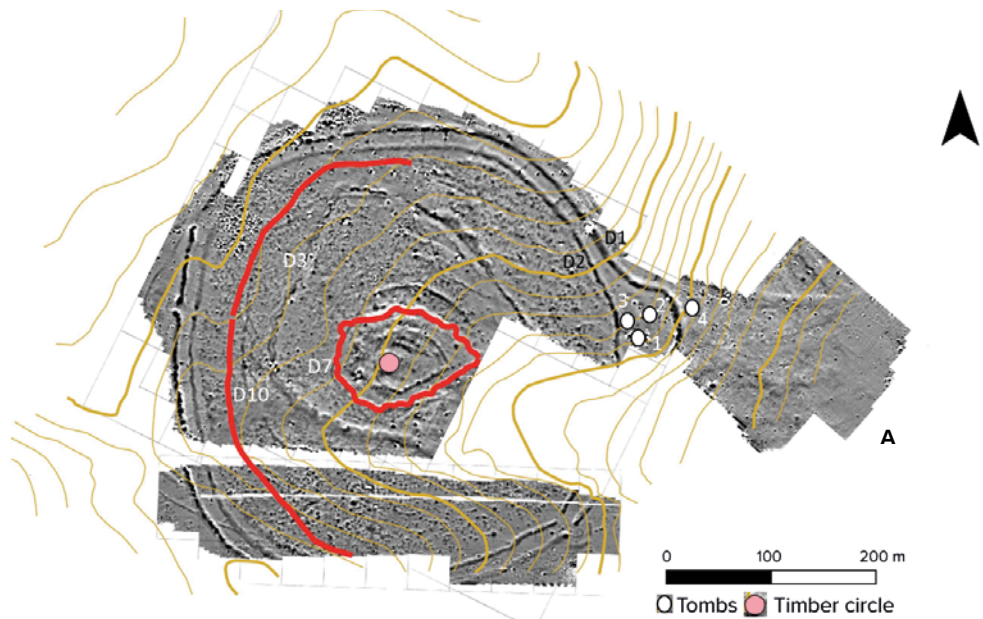


Figure 3. A. Location of the Timber Circle within Perdígões magnetogram, and its relation to possible contemporaneous ditches (ditch 10, 3 and 7) and funerary contexts (Tombs 1, 2 and 3 in the East extremity). B. View of the exposed parts of the Timber Circle and of the stone cairn that seals the stratigraphic sequence. Peripheral arrows mark the previous cut of the geological and the central arrow mark the pit in the geometric centre of the Timber Circle. Circle mark the deposition of dog parts

Figura 3. A. Ubicación del Círculo de Madera dentro del magnetograma de Perdígões y su relación con posibles fosos contemporáneos (fosos 10, 3 y 7) y contextos funerarios (Tumbas 1, 2 y 3 en el extremo este). B. Vista de las partes expuestas del Círculo de Madera y del aglomerado de piedra que sella la secuencia estratigráfica. Las flechas periféricas marcan el corte anterior del geológico y la flecha central marcan el hoyo en el centro geométrico del Círculo de Madera. Se marca con un círculo la deposición de las partes del perro

section — figure 4A), just 0,10 / 0,20m from the “empty” ditch. Another ring of similar post holes (18 exposed in the northern section) runs 0.80 / 1m inside from the first and seems to be attached to a third palisade groove (Palisade 3 — SU831, 0.20m wide by 0.20m deep), also full of packing stones.

Between the two rings of large post holes several smaller ones were identified. Some are linked by a groove forming a row in the Northwest side, and others, of different sizes, are scattered in the northeast side, some also associated with small grooves. These features might be related to rearrangements of the timber structures or to later timber constructions: circumstances that still need to be clarified.

By the inside of Palisade 3 another row of post holes was identified, close to the limits of the excavated area. The holes are of different sizes, namely in terms of depth (represented by different colours in figure 4), and probably correspond to more than one phase of construction.

As to the centre of the timber circle, the stone cairn structure (still under excavation) that culminates the stratigraphy limited the access. So far, it was just possible to reach that central area in a small trench and in an area not covered by the stone cairn (figure 4B). There, at least one more palisade and two possible rings of post holes concentric to the more external features of the timber circle were identified, together with other post holes and a palisade groove from later timber structures. Their plans are not yet intelligible (a possible second timber circle, slightly smaller, seems to be cutting the older one — figure 4B) and they demonstrate intense building activity in the area. Finally, in the very centre of the Timber Circle there was a figure of eight-shaped pit (figures 3B and 4B), 85cm deep. This pit, probably linked to the initial use of the wooden circle, was later partially re-excavated and a decapitated head of a masculine individual was deposited inside.

The actual data show the presence of a timber circular structure combining palisades (at least 3) and rings of posts (and one apparently “empty” ditch between the first palisade and the first ring of post holes), that develop in a concentric way, not leaving much free space at the centre, and which, despite the palimpsest of negative features from other structures,

seems to have been marked by a pit. Naturally, the perception of the global plan of the timber structure is still limited, as are the eventual phases of development. For instance, entrances, always important elements for the interpretation of these monuments, have not yet been identified. Nevertheless, some elements suggest that one opening might be in the Northeast quadrant. There, the two outside ditches (the Palisade 1 and the concentric “empty” ditch) end at a small perpendicular groove (figure 4A). A few centimetres to the East of that groove, a pavement built with small quartz pebbles (with one small post hole in the middle) was identified, extending underneath the unexcavated area. These elements might be related to an entrance to the timber circle, something that will be clarified in future excavations. If confirmed, then that entrance would be facing the summer solstice at sunrise.

Another limitation comes from the available information about the post holes. Only when a larger number in each circuit is exposed and excavated may we use their sizes to establish patterns that may inform about the specific characteristics of the structure. In fact, different reconstruction scenarios have been proposed assuming the relation between the size of the postholes and the height of the uprights (Gibson, 2005; Bradley, 2007).

But many other details of the structure are still missing, limiting our understanding of the structures and our ability to make meaningful architectural comparisons. Nevertheless, we can still make some observations on its chronology and wider context.

2.2.2. Dating and contextualizing the timber circle at Perdigões

At the moment, there are seven radiocarbon dates for related contexts, all obtained from animal bone (table 1): two samples from the external palisade (Palisade 1), two samples from the internal “empty” ditch, two samples from the internal palisade (Palisade 2), and one sample from the anatomical parts of a dog deposited over the bedrock, between the external palisade and the wall created by the previous cut in the northwest side (figure 3B).

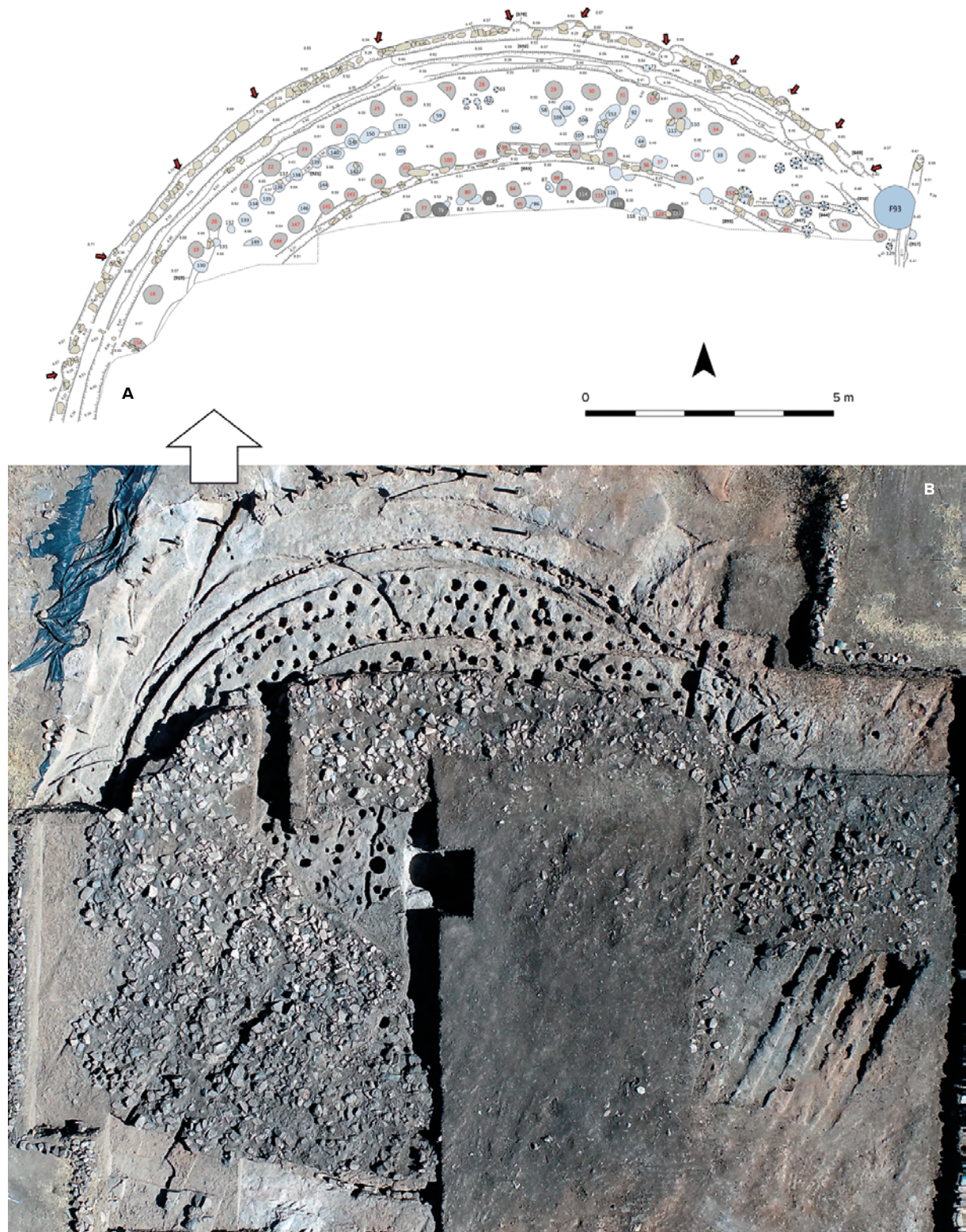


Figure 4. Plan of the northern section of the Timber Circle

Figura 4. Plano de la sección norte del Círculo de Madera

Context	SU	Sample	Lab. Ref.	Date BP	Cal 2σ	δ ¹³ C	δ ¹⁵ N
Radiocarbon dates for contexts associated to the Timber Circle							
Dog deposition	789	<i>Canis familiaris</i>	Beta-535490	4100±30	2862-2807 (22%) 2758-2718 (9,8%) 2707-2571 (62,4%) 2513-2503 (1,1%)	-19,1	8,39
External palisade	677	<i>Cervus elaphus</i> tibia	Beta-535488	4110±30	2865-2804 (24,1%) 2762-2574 (71,3%)	-20,2	5,63
External palisade	677	<i>Ovis aries</i> ulna	FTMC-ML56_8	4058±27	2838-2817 (4%) 2669-2476 (91,4%)	-20,93	5,03
Empty ditch	676	<i>Ovis/Capra</i> tooth	Beta-535487	4180±30	2887-2835 (21,7%) 2817-2666 (73,7%)	-20,1	8,99
Empty ditch	676	<i>Sus</i> phalanx	FTMC-ML56_9	4160±28	2879-2662 (90,3%) 2654-2631 (5,1%)	-20,28	6,88
Internal Palisade	831	<i>Sus</i> Astragalo	FTMC-ML56_6	4171±28	2884-2832 (20,6%) 2821-2663 (71,9%) 2651-2633 (3%)	-20,19	5,13
Internal Palisade	831	<i>Sus</i> P4	FTMC-ML56_7	4205±28	2896-2846 (29,7%) 2812-2742 (47%) 2713-2675 (18,7%)	-20,84	7,23
Radiocarbon dates for contexts pre Timber Circle							
Ditch 12	250	Large animal bone	Beta-330092	4530±40	3365-3097 (95,4%)	-19,7	
Sanja 1	33	Ovicaprid right jawbone	Beta-304756	4470±30	3339-3206 (52,4%) 3196-3081 (33,3%) 3069-3026 (9,7%)	-18,8	
Ditch 6	175	Fauna (n°2319)	Beta-315242	4450±30	3336-3210 (41,7%) 3193-3151 (7,9%) 3193-3011 (45%) 2977-2971 (0,4%) 2948-2945 (0,2%)	-20,5	
Ditch 6	107	Fauna (n°1429)	Beta-318359	4390±30	3092-2918 (95,4%)	-20,6	
Hipogeuum 1	182	<i>Sus scrofa</i> right jawbone	Beta-304757	4390±30	3092-2918 (95,4%)	-20,1	
Hipogeuum 1	242	<i>Ovis/Capra</i> mandible	ICA-15t/1021	4530±30	3361-3264 (32,6%) 3241-3103 (62,8%)		
Ditch 5	451	<i>Ovis/Capra</i> mandible	Beta-350352	4390±30	3092-2918 (95,4%)	-19,6	
Radiocarbon dates for contexts post Timber Circle							
Phase Huts							
Post Hut 1	267	<i>Cervus elaphus</i>	ICA-16B/0914	4030±30	2623-2473 (95,4%)		
Hut 2	393	<i>Sus</i> sp.	ICA-16b/0912	4010±30	2617-2611 (0,9%) 2581-2458 (94,5%)		
Hut 2	421	Large animal bone	ICA-17B/1149	4000±30	2577-2468 (95,4%)		
Hut 5 (Elipsoidal)	325	<i>Bos</i> P4	FTMC-ML56_13	4050±28	2835-2819 (2,2%) 2666-2645 (3,6%) 2636-2473 (89,7%)	-20,72	6,66
Phase funerary contexts of cremated remains							
Pit 40	298	Human bone	SANU-51725	3980±35	2580-2449 (91,3%) 2420-2405 (1,5%) 2379-2349 (2,6%)	-19,7	7,8
Pit 40	193	Human bone	SANU-51726	4015±30	2618-2610 (1,5%) 2582-2470 (93,9%)	-19,9	6,8
Pit 40	193	Human bone*	SANU-53733	3952±25	2567-2522 (20,5%) 2499-2399 (64,2%) 2383-2347 (10,7%)	-23,6	
Pit 40	193	Human bone*	SANU-53730	3788±28	2299-2136 (95,4%)		
Pit 40	193	Human bone*	SANU-53731	4044±27	2832-2821 (2,1%) 2631-2478 (93,3%)	-24,54	
Pit 40	193	Human bone*	SANU-53732	3976±26	2572-2512 (50,9%) 2505-2460 (44,5%)		
Pit 40	193	Human bone*	SANU-53729	4076±26	2851-2812 (13,4%) 2743-2729 (1,5%) 2695-2564 (71,4%) 2532-2495 (9,1%)	-24,83	
Pit 40	193	Human bone*	SANU-53727	4070±25	2849-2812 (10,8%) 2740-2734 (0,4%) 2693-2688 (0,3%) 2680-2561 (70,1%) 2536-2492 (13,7%)	-27,14	
Pit 40	193	Human bone*	SANU-53726	3931±25	2548-2540 (0,9%) 2490-2339 (93,5%) 2318-2310 (0,9%)	-25,2	
Pit 40	193	Human bone*	SANU-53725	4016±26	2617-2612 (0,7%) 2581-2471 (94,7%)	-27,5	
Pit 40	193	Human bone*	SANU-53724	3867±25	2463-2282 (91,5%) 2249-2232 (3,4%) 2218-2215 (0,5%)	-22,83	
Pit 40	193	Human bone*	SANU-53723	4021±25	2617-2610 (1,3%) 2581-2473 (94,1%)		
Pit 40	193	Human bone*	SANU-53721	4107±27	2862-2807 (23,8%) 2758-2718 (11,3%) 2706-2575 (60,3%)	28,2	
Environment 1	177	Human bone	Beta-308785	3970±30	2575-2452 (90,4%) 2420-2406 (1,9%) 2378-2350 (3,2%)	-20,4	
Environment 1	109	Human bone	Beta-308784	3900±30	2470-2297 (95,4%)	-19,7	
Environment 1	128	Human bone	Beta-313720	3850±30	2458-2269 (75,7%) 2260-2207 (19,7%)	-25,6	
Environment 1	263	Human bone	Beta-313721	4000±30	2577-2468 (95,4%)	-19,0	
Pit 16	74	Human bone	Beta-289262	3990±30	2621-2450 (92%) 2420-2405 (1,3%) 2378-2350 (2,1%)	-20,6	
Phase contexts with beaker materials							
Large cairn	28	<i>Sus</i> Scapula	FTMC-ML56_4	3903±27	2467-2297 (95,4%)	-19,98	4,81
Pit 87	593	Fruit	Beta-474677	3850±30	2458-2269 (75,7%) 2260-2207 (19,7%)		
Pit 45	279	<i>Canis familiaris</i>	ICA-15R/1253	3820±30	2448-2446 (0,2%) 2436-2420 (1,4%) 2405-2378 (3,5%) 2350-2193 (84,9%) 2177-2144 (5,3%)		
Deposit	767	Fruit	FTMC-TK72-1	3931±28	2560-2539 (3,4%) 2491-2338 (87,9%) 2324-2301 (4,2%)		
Pit 92	909	<i>Cervus elaphus</i>	FTMC-TK72-2	3896±28	2466-2294 (95,4%)	-20,77	4,93
Pit 93	797	<i>Cervus elaphus</i>	Beta-535489	3900±30	2470-2297 (95,4%)	-20,4	6,24
Pit 93	819	<i>Cervus elaphus</i>	Beta-542213	3800±30	2339-2139 (95,4%)	-20,8	6,14
Deposit	361	<i>Sus</i> sp. scapula	Beta-535486	3860±30	2461-2276 (84%) 2254-2209 (11,4%)	-19,7	5,66
Pit 96	1247	Human skull	FTMC-IQ60-1	3898±31	2469-2289 (95,4%)	-19,61	9,84
Pit 96	1154	<i>Sus metacarpus</i>	FTMC-ML56_5	3855±27	2457-2276 (77,7%) 2256-2206 (17,8%)	-19,95	5,58
Phase Early Bronze Age							
Pit 79 / Cairn	500	<i>Cervus elaphus</i>	ICA-16B/0913	3690±30	2196-2171 / 4,6%) 2146-2010 (85,6%) 2001-1977 (5,1%)		
Pit 79 / Cairn	488	<i>Cervus elaphus</i>	ICA-17B/0104	3700±30	2199-2164 (8,7%) 2151-2017 (84,5%) 1995-1981 (2,2%)		
Fireplace	418	<i>Cervus elaphus</i>	ICA-16B/0939	3650±30	2135-1939 (95,4%)		

*Cremated petroses

Table 1. Radiocarbon dates for the timber circle and pre and posterior contexts in Sector Q. (Calibration curve IntCal20)

Tabla 1. Fechas radiocarbónicas del círculo de madera y de los contextos anteriores y posteriores del Sector Q. (Curva de calibración IntCal20)



Figure 5. A. View of the ditch of the outside palisade (Palisade 1) filled with stone wedges and of the “empty” ditch by the inside; B. Detail of the ditch of Palisade 2, filled with stone wedges, and of the attached second ring of post holes; C. Details of the external ditch of Palisade 1 in the south limits of the Timber Circle, with stone wedges and post holes inside

Figura 5. A. Vista del foso de la empalizada exterior (Empalizada 1) relleno con cuñas de piedra y del foso «vacío» por el interior; B. Detalle de la zanja de Empalizada 2, rellena con cuñas de piedra, y del segundo anillo adjunto de huecos para postes; C. Detalles de la zanja externa de Empalizada 1 en los límites sur del Círculo de Madera, con cuñas de piedra y hoyos para postes en el interior

All seven determinations are close in date and considerably overlap when calibrated. When modelled as one phase (with overlapping relationship) with the dates available for previous (Late Neolithic) and posterior (Chalcolithic and Early Bronze Age) contexts, an overall agreement (Amodel) of 72.3 is obtained. According to the model, the starting interval

is between 2971–2686 BP (95,4%) and the end interval between 2835–2455 BP (95,4%) (figure 6). Taking into consideration the highest probability within both intervals we have a period of between 2850–2650 BP, which is consistent with the absolute chronology for the contexts that precede and overlie this timber structure.

While the previous contexts are characterized by Late Neolithic ditches (that were cut for the construction of the timber circle), the posterior stratigraphy, dated (by 35 dates) between 2600 BC and 2000 BC, is characterized by a complex sequence of occupation, namely in the northern section (where the excavated area is more extended). Levels of sedimentation were formed covering the timber circle associated with the intensive deposition of faunal remains and pottery fragments (suggesting feasting activities), and in turn associated with a wooden hemi-ellipsoidal structure (figure 3B, in the left; figure 4B at the top). Ring-groove huts were built (some cutting the previous Timber Circle features), followed by circular huts with bases made of stone (that were built, partially dismantled, and rebuilt in a multi-phase process — Valera et al., 2019). In the deposits that covered the timber circle two pits were excavated and a stone agglomeration, including a cist, was formed. These structures were used for the deposition of human cremated remains (Valera et al., 2014; Godinho et al., 2019; Valera, 2020c), corresponding to a provisional minimum number of 350 individuals. Around these funerary contexts, and already in the third quarter of the 3rd millennium BC, a layer of occupation was formed, with surface and pit deposits of Bell Beaker pottery, some copper materials and material related to copper working. During this occupation, the central area of the timber circle was exposed, and the infilling of the central pit partially re-excavated for the deposition of a decapitated head of a male. Finally, this occupation was covered (sealed?) by a large oval stone cairn with a stone-free centre (figures 3B and 4B). Another smaller stone cairn was built in the northern limits of the excavated area, covering a pit containing animal remains, possibly related to a feasting episode (Basílio and Cabaço, 2019), that has been dated to the last quarter of the 3rd millennium BC. So, the timber circle seems to initiate a highly complex and diversified sequence of occupation in the central area of the Perdigões enclosure, where the ceremonial and the ritualized have always been present.

To integrate the timber circle in the broader context of the Perdigões enclosures we can consider the 157 radiocarbon dates for the whole site, 28 for its

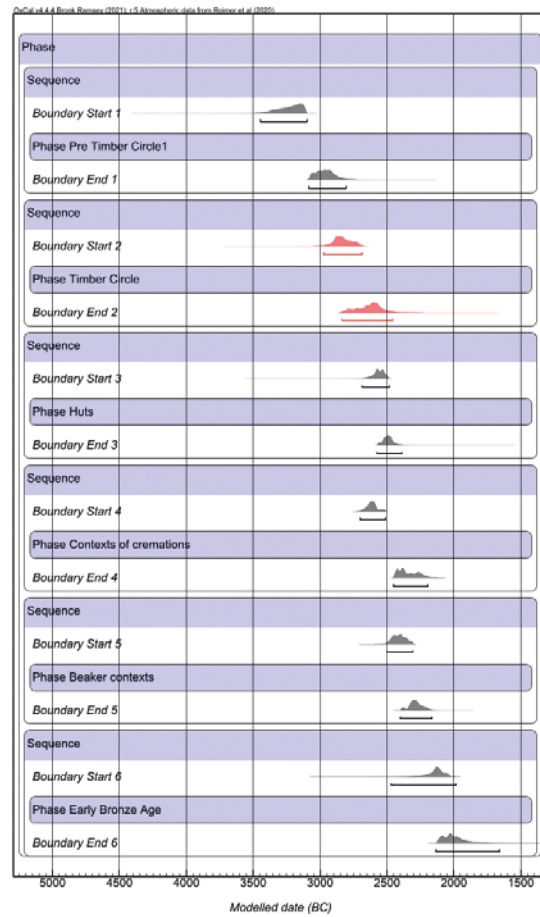


Figure 6. Model of the seven dates for the Timber Circle and pre (Late Neolithic) and post (Chalcolithic and Early Bronze Age) contexts in the central area of Perdigões (model of phases with overlapping relations, with an $A_{model}=72.3$)

Figura 6. Modelo de las siete fechas para el Círculo de Madera e pre (Neolítico Final) y post (Calcolítico y Bronce Inicial) del área central de Perdigões (modelo de fases con relaciones de superposición), con un $A_{model}=72.3$)

Neolithic phase and 129 for its Chalcolithic / Early Bronze Age phases. This assemblage of dates, apart from providing a good chronological frame for the site’s global chronological span (3400-2000 BC), also enable defining periods of contemporaneity between different structures and, in the present case, a first attempt to contextualize the timber circle within the Chalcolithic sequence of enclosures and funerary monuments.

Ditches 2 and 1 (figure 3A) and associated structures at the Northeast gate have been dated from the second half of the 3rd millennium BC (Márquez Romero et al., 2022), just like Tomb 4 in the eastern limits of the site (Valera, 2020c), and are clearly later than the timber circle. Other structures, though,

Context	SU	Sample	Lab. Ref.	Date BP	Cal 2σ	δ ¹³ C	δ ¹⁵ N
Ditch 10	36	<i>Sus</i> sp.	ICA-15T/1017	4220±30	2905-2853 (42,8%) 2813-2743 (42,8%) 2727-2696 (9,9%)		
Ditch 3	58	<i>Bos Taurus</i> tooth	Beta-285096	4050±40	2850-2813 (7,6%) 2742-2730 (1,0%) 2694-2686 (0,7) 2681-2472 (86,1%)	-17,1	
Ditch 3	99	<i>Sus</i> sp. tooth	Beta-285098	4050±40	2850-2813 (7,6%) 2742-2730 (1,0%) 2694-2686 (0,7) 2681-2472 (86,1%)	-21,3	
Ditch 3	38	Middle size carnivorous tooth	Beta-285095	3980±40	2618-2610 (0,6%) 2582-2399 (90,4%) 2383-2347 (4,4%)	-19,4	
Ditch 3	61	Human left femur	ICA-17B/1147	4120±30	2870-2800 (25,1%) 2780-2580 (70,3%)		
Ditch 7	92	Human mandible	ICA-15T/1023	4010±30	2617-2611 (0,9%) 2581-2468 (94,5%)		
Ditch 7	86	<i>Sus</i> sp.	ICA-15T/1018	3820±30	2448-2446 (0,2%) 2436-2420 (1,4%) 2405-2378 (3,5%) 2350-2193 (84,9%) 2177-2144 (5,3%)		
Ditch 7	63	<i>Sus</i> sp.	ICA-15B/1014	3890±30	2468-2291 (95,4%)		
Ditch 7	51	<i>Sus</i> phalanx	FTMC-ML56_11	4084±26	2851-2809 (15,1%) 2747-2726 (3,9%) 2699-2568 (69,6%) 2526-2497 (6,9%)	-20,13	4,66
Ditch 7	83	Scapula <i>Sus</i>	FTMC-ML56_16	4096±27	2859-2806 (20,6%) 2753-2721 (7,7%) 2703-2571 (64,8%) 2517-2501 (2,4%)	-20,44	5,16
Ditch 7	95	Falange <i>Bos</i>	FTMC-ML56_17	4073±28	2850-2810 (10,9%) 2746-2727 (2,5%) 2698-2561 (66,7%) 2538-2492 (15,3%)	-20,98	5,24
Ditch 7	26	Ulna <i>Sus</i>	FTMC-ML56_18	4145±27	2875-2625 (95,4%)	-20,03	2,9
Ditch 7	25	Phalanx <i>Sus</i>	FTMC-ML56_19	4167±27	2881-2832 (20,1%) 2822-2663 (72%) 2651-2633 (3,3%)	-19,67	5,71
Tomb 3	532	Human Tibia	ICA-17B/1141	4200±30	2890-2840 (27,1%) 2810-2680 (68,3%)		
Tomb 3	531	Human Femur	ICA-17B/1142	4190±30	2890-2840 (23,9%) 2820-2670 (71,5%)		
Tomb 1 Chamber	173	Human bone	Beta-327750	4030±40	2835-2817 (2,9%) 2666-2467 (92,5%)	-19	
Tomb 1 Chamber	93	Human bone	Beta-327748	4060±30	2840-2813 (7,7%) 2678-2483 (87,7%)	-19,4	
Tomb 1 Chamber	84	Human bone	Beta-327747	4130±30	2872-2799 (27%) 2794-2786 (1,1%) 2781-2617 (62,9%) 2610-2583 (4,5%)	-18,9	
Tomb 1 Chamber	145	Human bone	Beta-311480	3990±30	2575-2466 (95,4%)	-26	
Tomb 2 Chamber	458	Human bone	Beta-308791	4090±30	2860-2808 (19,3%) 2754-2721 (6,6%) 2703-2568 (66,1%) 2519-2499 (3,4%)	-19,2	
Tomb 2 Chamber	429	Human bone	Beta-308792	3890±30	2468-2291 (95,4%)	-19,1	
Tomb 2 atrium	231	Human bone	Beta-308793	3970±30	2575-2452 (90,4%) 2420-2406 (1,9%) 2378-2350 (3,2%)	-22,7	
Tomb 2 atrium	232	Human bone	Beta-308789	3840±30	2457-2417 (8,4%) 2409-2202 (87%)	-19,1	

Table 2. Radiocarbon dates for Ditches 3, 7, and 10, and Tombs 1 to 3. (Calibration curve IntCal20)

Tabla 2. Fechas de radiocarbono de las zanjas 3, 7 y 10, y de las tumbas 1 a 3. (Curva de calibración IntCal20)

have provided a set of dates (table 2) that entirely or partially overlap the time span of this timber structure (figure 7). Ditch 10, a small ditch surveyed in its western gate 150m away from the timber circle (Valera et al., 2020), is still poorly dated. It has just one date that, nevertheless, covers the period in question, suggesting that it might be contemporary with the timber circle. In the magnetogram, this ditch is visible just in the western part, so it is not clear if it was wide open to the East or was enclosing the central area, having its eastern trajectory overlapped by later ditches, such as Ditch 2, that have already shown evidence of overlapping with an earlier ditch (Márquez Romero et al., 2022). Closer to the centre, the infilling of Ditch 7 seems to start at the same time as the timber circle, indicating that this ditch was enclosing the timber structure. This is a large ditch, four meters wide and three meters deep with a “V” section. It has an oval shape

with a gate open to the East, in front of the timber circle and aligned at 90° (equinoxes at sunrise). Its shape seems to have been conditioned by the previous Late Neolithic Ditch 6, to which it maintains a certain concentricity. Also contemporary is the use of Tomb 3, in the Easter limits of the site.

Three other structures have their starting interval overlapping with the end interval of the infillings of the timber circle features: Ditch 3, a wavy ditch that runs between Ditch 10 and Ditch 7 in the middle of the natural amphitheatre, and Tombs 1 and 2, that, together with Tomb 3, are collective graves of secondary depositions in the eastern limits of the site (Valera et al., 2014; Evangelista, 2019; Silva et al., 2017; Valera, 2020c), some 230m distant from the timber circle (figure 3A). It is likely that the timber circle was still in use when these structures were built but it is also possible that there was a small chronological gap. The three tombs (1 to 3) would not be

bounded by any ditch at the time of their construction and initial use, and only later were enclosed by the construction of Ditch 1 (Valera, 2020c).

2.2.3. Preliminary data on the wood used in the Perdigões Timber Circle

There were no remains of burned posts inside the palisade ditches and post holes excavated to date. Therefore, the first approach to the timber resources used at the Perdigões timber circle rested in the anthracological analysis of charcoals from samples of the infilling sediments of several post holes and palisade ditches excavated in the north section of the structure, and collected through flotation methods (Monteiro et al., 2022). The results showed the presence of charcoals of only two main tree taxa, the *Pinus* (*Pinus penea* / *pinaster*; *Pinus* sp.) and the *Quercus* (evergreen; *Quercus* sp.), but with the *Pinus* representing 83.3% of the remains.

The presence of these taxa in the landscape surrounding Perdigões during the occupation of the site has already been established by pollen analyses (see discussion in Danielsen and Mendes, 2015). They are also present as part of the main resources (together with *Olea europaea*) used for the human cremations, the remains of which were deposited in Pit 16 in this central area, where percentual variations within the stratigraphy indicate selection processes (Coradeschi et al., in press). Although the charcoals collected inside the timber circle features cannot be directly related to the posts, the percentual difference observed also indicates selection processes that favoured the *Pinus*, suggesting that this might have been the major resource used in the construction, probably since its trunk is more straight and appropriate for wooden uprights than other local taxa.

It is also interesting to note that some post holes only have one of the taxa, as is the case of PH26, only with *Pinus*, and PH20, only with *Quercus*. Too few post holes have yet been analysed to be able to detect a pattern and relate these charcoals to the posts they held. But it is possible that there might have been some criteria timber circle at play in the ways each type of wood was used in the layout of the building.

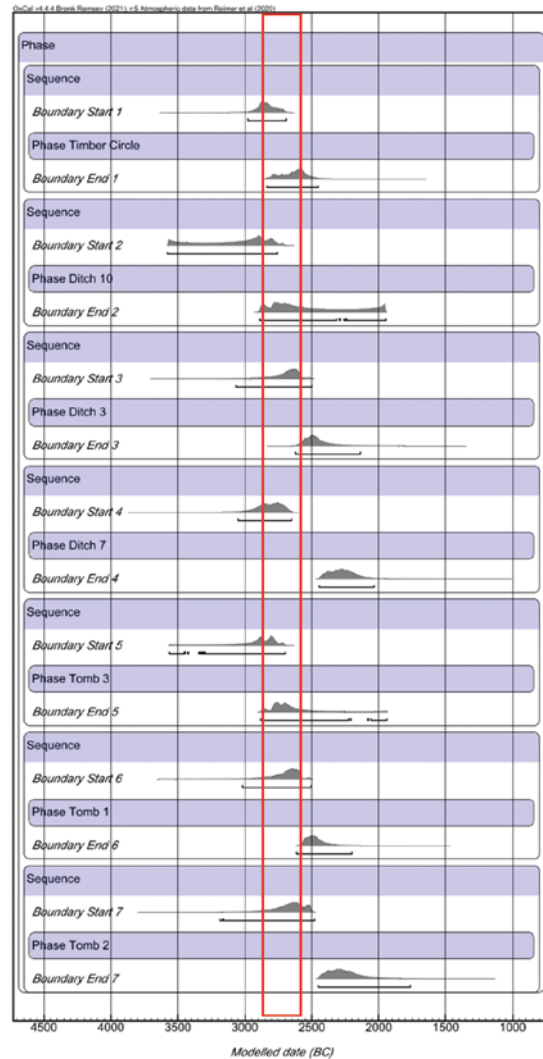


Figure 7. Comparing chronological the intervals of the Timber Circle with other possible contemporaneous structures at Perdigões (ditches 10, 3 and 7, and tombs 3, 1, and 2). Overlapping phases model

Figura 7. Comparación cronológica de los intervalos del Círculo de Madera con otras posibles estructuras contemporáneas en Perdigões (zanjas 10, 3 y 7, y tumbas 3, 1 y 2). Modelo de fases de superposición)

3. Timber monumental architecture in South Portugal’s Late Prehistory: some preliminary considerations about Outeiro Alto 2 and Perdigões

The south of Portugal, as an integrant part of the Iberian Southwest, was engaged in an accelerated trajectory of social complexity during the second half of the 4th and throughout the 3rd millennium BC, where the investments in monumental architecture played a relevant role (Valera, 2015; 2020). Large

megalithic monuments and ditched and walled enclosures seem to have catalysed the main investments, using essentially stone and earth as major construction materials.

However, the timber monuments present at Outeiro Alto 2 and Perdigões, the first of their kind to be recognized in Portugal and with no published parallels in Iberia, show that other options existed. How exceptional or how representative they are of a more common architecture in the Late Prehistory of the Peninsula, the future will tell. But being Iberia, well integrated in the European “Neolithic trend”, sharing with many other European regions phenomena such as megalithism, integrating large scale interaction networks, having in the Peninsula evidence of the use of timber in domestic architecture and in palisades since the Early Neolithic and, as more recently shown, participating in the tradition of building ditched ceremonial enclosures, the presence of this kind of architecture in wood should not be a complete surprise. That does not mean that we should expect to find it in every region. It has heterogeneous and discontinuous distributions in continental and northern Europe (for instance, also rare in France — Gibson, 2005), just as megaliths or enclosures have, and it is the same in Iberia.

Their late detection may result from several circumstances, that might change from region to region. Their density and preservation in many areas, the research traditions, the survey methods used (only in the last decades have geophysics and remote detection techniques have been used more frequently), the methodologies applied in rescue archaeology (the predominant form of archaeological project nowadays), and even the ability of archaeologists to recognize them. Some of these limitations are quite visible in the South of Portugal. In rescue archaeology, the survey areas are dogmatically (that is, economically) restricted to the area to be affected, and is frequent to see structures excavated just within the narrow pipeline trenches that cross them, without really understanding the true or full nature of the archaeological remains. In many of these trenches, because the excavated area is restricted and no other methods (like geophysics) are usually applied, eventual patterns indicating the presence of timber structures

are not detected, even in the case of suggestive pit distributions (for example see figure 8). So, the timber circles of Outeiro Alto 2 and Perdigões are probably just the first, and almost certainly they will not be the last, albeit their distributional density may be less than in other European regions.

Meanwhile, the actual absence of similar timber structures in Iberia inevitably makes us look to North and Central Europe, where timber was frequently used in the construction of monuments and ceremonial buildings during Late Prehistory, and where some similarities to these two Portuguese cases can be found.

Regarding Outeiro Alto 2, the design of the timber structure presents some similarities with the British “square-in-circle” structures (Gibson, 2004; 2005; Bradley, 2007; Pollard, 2012). These structures, independently of the size, present a similar space organization, where circular rings of posts enclose squares designated by four posts. Present in many regions of Britain and Ireland, they have been interpreted as public structures for ceremonial purposes, cult houses or shrines, that evoke domestic houses, in a process known as “consecration of the house” (Bradley, 1998; 2005), where houses, by the power they assume in the domestication and organization of the world (Hodder, 1990; Parker Pearson and Richards, 1994), become a template for monuments and public buildings (Pollard, 2012; Keith and Thomas, 2020).

In the Outeiro Alto 2 structure the posts are very close to each other, leaving little room between them. This is not a structure to live in or where complex ceremonies could be performed inside. But it could have been some sort of shrine, with a significant orientation, that was enclosed by a possible ring of standing stones and by the funerary monuments. The combination of rings of wooden posts with stones, or the substitution of the timber by the stones, is also known in Britain, frequently seen as a search for perpetuity. At Outeiro Alto 2, the presence of a ring of stones is speculative (although plausible if we considered the referred examples of Sobreira de Cima and Vale de Barrancas 1). But if it existed, we cannot say if it was part of the initial design or was a later addition, representing a change in the life and meaning of the



Figure 8. Pairs of pits detected within a trench for a pipeline that seem to be part of a circle, and might configure a Timber Circle at the site of Estácio 6 (Beja district, South Portugal)

Figura 8. Pares de hoyos detectados dentro de una zanja para una tubería que parecen ser parte de un círculo y podrían configurar un círculo de madera en el sitio de Ewstácio 6 (distrito de Beja, sur de Portugal)

timber monument. In fact, if we were to consider the possible metaphorical use of physical properties of timber and stone (wood — organic — life versus stone — inorganic — death, Parker Pearson and Ramilisonina, 1998), the surrounding of the Timber Circle by stones and a set of four funerary contexts would be suggestive of an allegorical use of materiality.

The timber circle at the centre of Perdigões is larger, more complex in its architectonic layout, later in chronology, and integrated in a large enclosure already with a long Neolithic history and symbolic importance in the local landscape. At Outeiro Alto 2 we may argue that the presence of the timber monument and associated funerary contexts may have played a role in the later building of the ceremonial ditched enclosure, 300m apart, on the extremity of the hill. In this case, it was the ditched enclosure that was attracted to that place previously invested of meaning by the funerary monument (Valera and Filipe, 2010; Valera et al., 2013). In the case of the Perdigões Timber Circle, though, we cannot address

it as a unit independent of the preceding enclosures or of the meanings and social roles previously associated to the site.

The area where the enclosure was to be located was already meaningfully marked by a megalithic cromlech, and the first ditches, in the late Middle Neolithic (around 3400 BC), were built right in the centre of the natural theatre, where the timber circle would later be erected. The choosing of this place for the location of the ditched enclosure was related to cosmological principles and to the construction of meaningful landscape (Valera, 2018). It was in the centre of a basin where visibility, restricted to north, south and west, was driven to the east by an opening the limits of which roughly coincide with both solstices at sunrise. In that eastern direction, between that place and the horizon, some 15km away, tens of megalithic monuments (funerary and non-funerary) were already in use and others under construction, punctuating the landscape. For those in the centre of Perdigões, the Sun would rise on the horizon,

behind which was the major source of life of the region — the Guadiana River — would make its way over this highly symbolic landscape, and set just in the western limits of the natural theatre. From the beginning, that central area was embedded in a metaphorical organization of space.

Throughout the second half of the 4th millennium BC, new and larger ditches were built around that centre, progressively enclosing larger areas, until they reached the top of the slopes, enclosing almost the totality of the natural basin, and where human burials in pits were taking place. During these first centuries of use, practices of structured deposition inside pits and ditches were recorded in the central area, such as animal mandibles, a large auroch's horn, human bones (like a human mandible broken in half and the halves overlapping and point in opposite directions), the placement of several anthropomorphic figurines (“almeriense idols”) at the bottom of a ditch, or the intentional fragmentation of pottery (frequently in halves) and the organization of the fragments along pit walls (Valera, 2018).

When the Timber Circle was built in the early 3rd millennium BC, these previous Neolithic features were mostly filled and closed, but visible and still organizing the space. The way the Chalcolithic Ditch 7 runs concentric to the Late Neolithic Ditch 6 in the central area is evidence of that. Even if the available radiocarbon dates might suggest a small gap in the occupation around 2900 BC (Valera, 2018), coinciding with some changes in material culture that mark the beginning of the Chalcolithic, the building of the timber circle recreates the symbolic importance that this central place already had.

As to the architecture of the monument, taking into consideration the limitations that still exist regarding its plan and possible phases, it is interesting to underline the combination of concentric palisades and rings of post holes. If we search for parallels in northern and central Europe, we will not find an exact match, but similarities that provide a family resemblance.

In Britain and Ireland timber circles are quite common, varying in size, in complexity, and occurring isolated or inside earthworks (Gibson, 2005; Bradley, 2007), and they seem to emerge at the same

time as these Portuguese exemplars, in the late 4th / early 3rd millennium BC (Gibson, 2005: 63-64). Some, as in Woodhenge, the South Circle in Durrington Walls, or Mount Pleasant, also present several concentric circles, leaving almost no free space at the centre, just as at Perdigões. However, they are usually made just of concentric rings of posts, where the posts are put in individual pits and palisade grooves like those in Perdigões do not occur, although some reconstructions consider the filling of the space between posts with wooden planks or wattles, forming a wall or palisade (Gibson, 2005, fig.90: 104). In central Europe, though, palisade grooves are frequent in “*rondeles*” or “*kreisgrabenanlagen*” monuments, with one, two or more concentric rows, in Germany, Austria, or Czech Republic (Behrens, 1981; Petrasch, 1990; Becker, 1996; Podborský and Kovárník, 2006; Neubauer, 2012). The combination of palisades with rings of posts is also frequent. A good example is the so called “*Ring Sanctuary*” of Pömmelte (Spatzier and Bertemes, 2018), where they are also coupled with ring ditches. Although these buildings are larger, frequently enclosed by earthworks and usually have a wider free internal area than the one at Perdigões, this combination of concentric rows of palisades, post rings and ditches brings them close to this Portuguese case.

Another interesting characteristic of the Perdigões timber circle is precisely the occurrence of an apparently “empty” small ditch by the inside of Palisade 1. This could be seen as a situation similar to what occurs in many henge monuments. What defines a henge is a matter of debate, since there is some variability in the structures that have been aggregated under the term (for a discussion see Gibson, 2012). But one of the defining aspects is the enclosing of a space by a broadly circular ditch and bank, with a circular tendency, where the ditch is usually inside and the bank outside. In British literature, this layout has been interpreted in many ways, since using the bank as a sort of bench for assisting onlookers to witness what was going inside the henge (but with the ditch preventing a direct access) to the idea of symbolically containing and making invisible the entities inhabitant or the practices performed in that stage (by inverting the defensive strategy of an outside ditch and an inside bank

— Bradley, 2007; 2011). At the Perdigões timber circle, the negative structure (the “empty” ditch) is also by the interior of the positive structure (Palisade 1). The small size of this ditch and the reduced space between it and the Palisade 1 on one side and the first ring of posts in the other, suggest that its role in the architecture of the building is more symbolic than practical. It could be related to certain prescriptions of space organization that these structures share in a wider scale, but with regional translations.

The enclosing of the timber circle by at least one ditch (Ditch 7) is also another element that allows comparison with some British cases. For some of these cases it has been argued that the ditch and the bank were the last to be built, enclosing and changing the ontologies of the monument or ending its use (Gibson, 2004; 2005). In the case of Perdigões, Ditch 7, with a perimeter of 380m, encloses an area of 8924m², and not just the timber circle, that occupies the centre. The ditch seems to confine that central space, restricting and conditioning the access (that has an orientation to the equinoctial point) to the timber monument and to other eventual constructions or specific places within that area. This situation brings to memory the internal timber circles of Durrington Walls, or of some other enclosures of Britain and of Central Europe, where the timber monuments are integrated (or become integrated) in larger enclosed spaces. In the case of Perdigões some differences may be underlined. Namely, the area enclosed by Ditch 7 was probably also enclosed by Ditch 10, creating a more complex and eventually hierarchised space organization, with the centre assuming specific differentiating qualities. However, we do not yet have the necessary information to characterize the occupation of the area enclosed by Ditch 7 when the timber monument was in use. Although the geophysics show a great number of features, it does not discriminate them by time, and the excavated area only covers 1109m² of that enclosed space, showing the presence of features covering the whole time span of the site. On the other hand, at Perdigões the timber circle occupies a place within the site that already had previous symbolic relevance. Independently of the present data limitations, this timber monument was structuring the

space within the site in the early 3rd millennium BC, giving continuity to a previous valuation of the centre. A centrality of a monument, circularity and concentricity of which were replicating (and simultaneously inducing) the circularity and concentricity that seems to have characterized the organization of space in Perdigões throughout its lifetime.

4. Final remarks

Outeiro Alto 2 and Perdigões present the first two timber circles identified in Neolithic and Chalcolithic Iberia. What might the presence of these timber structures in South Portugal represent?

Although there currently exists a long “desert” between these monuments in the Southwest corner of Iberia and areas where we can find resemblant architectures in Northern and Central Europe, they probably represent another facet of the peninsular integration, at a large scale, in the Neolithic trends of monumentality across Europe. Namely, they seem to reinforce the Iberian connections with Northern Europe, mitigating the traditional bias to the cultural dominance of the Mediterranean axis, especially when dealing with the southern half of the Peninsula.

At a more regional scale, they induce new angles in the analysis of the role of monuments and monumentality in the trajectories of the local Neolithic and Chalcolithic communities. Building monuments in wood has obvious economic, technological, and social implications, regarding resource accessibility, labour involved in extraction, transportation, and construction, but also in symbolic terms. The physical properties of raw materials provide metaphorical meanings that may be intrinsically related to the social roles played by the buildings, as already discussed. A perception of permanence is usually associated with architectures in stone, while timber is seen as a more transitory material, providing the architectures of wood with less lasting biographies and social roles. This does not necessarily mean that buildings using stone were not intended to have limited durations, as the building / dismantling / rebuilding of stone huts in the central area of Perdigões shows, but the presence of timber monuments in

the landscapes of the Neolithic and Chalcolithic of Southwest Iberia introduces an all-new dimension to the investments in the architecture of monuments of the region, and transforms our perception of the agencies involved in their creation and in the agencies of the monuments themselves.

The longevity of long-lasting monuments provides them with the ability of acting in successive different contexts, being reused, remodelled, integrated (partially or totally) in new monuments, appropriated and recreated with new meanings, diachronically enlarging their arena of agency, and transporting them to contexts and roles unintended or predicted by their builders (Giddens, 2000; Pauketat, 2000). In other words, they may develop a plurality of monumentalities during their biographies, since monumentality emerges from the relations generated between the formal monument and its users in each specific context (Rodrigues, 2001; Osborne, 2014; Valera, 2020c). Naturally, timber buildings may also have long biographies and be submitted to process of material / conceptual / use modifications, as has been argued for the enclosing (with ditches and earthworks) of some timber circles or their substitution by stone in Britain (Gibson, 2005; Bradley, 2007). But because of the perishable nature of wood, they tend to be not just less lasting, but also to be perceived as such. So, apart from other differences concerning the more economic and technological issues, the evidence that the building of monuments in wood was occurring represents a new facet of monumentality in the region, already underlined by recent research regarding some ceremonial ditched enclosures (Valera, 2020c): the construction of more ephemeral monuments indicates a more dynamic role of monumentality in the effervescent scaled-up complexity of social relations developed between the middle of the 4th and the end of the 3rd millennium BC.

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