17

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EDITORIAL

Projecto Recintos Cerimoniais

Património é hoje um agente social, cultural e económico fundamental para um desenvolvimento sustentável. No caso do património arqueológico, a relação com o turismo e indústrias criativas permite aumentar a oferta de programas culturais atractivos e diversificados, podendo ser um estímulo à complementaridade e às parcerias em rede, mediante a combinação de várias ofertas regionais. Uma lógica que é particularmente relevante nos territórios do interior, como alternativa ao modelo de sol e praia.

Mas sendo a cultura um factor competitivo cada vez mais importante, existe um vasto potencial desaproveitado no que respeita ao património arqueológico. No interior alentejano, os recintos de fossos pré-históricos são disso um exemplo gritante. Em grande medida desconhecidos do grande público, e sendo um património ameaçado pelos impactos negativos da crescente agricultura intensiva, constituem um conjunto patrimonial de grande relevância científica e cultural.

A sua activação social em rede com outras valências regionais é o objecto central de um novo projecto da ERA Arqueologia, em consórcio com o Esporão SA. e Câmara Municipal de Reguengos de Monsaraz, e financiado pelo programa PROMOVE da Fundação La Caixa. Visa potenciar o significativo trabalho de inventariação e investigação que temos vindo ar realizar na região sobre os recintos de fossos pré-históricos, utilizando como âncora regional o recinto dos Perdigões, recentemente classificado como Monumento Nacional.

António Carlos Valera

ARCHAEOLOGICAL ACTIVITIES CARRIED OUT BY THE UNIVERSITY OF MALAGA (2008-2016) AT THE PERDIGÕES ARCHAEOLOGICAL COMPLEX (REGUENGOS DE MONSARAZ. PORTUGAL): FINAL CONSIDERATIONS

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Abstract:

The University of Malaga (Spain) has collaborated for the better part of a decade in the archaeological investigations carried out at the Archaeological Complex of Dos Perdigoes in the Municipality of Reguengos de Monsaraz (Portugal). This article presents the main results obtained from Sector L1. It describes the main undertakings, the structures brought to light and the processes of their backfilling before turning to speculate as to the chronology and temporality of the different features of prehistoric architecture.

Resumo:

Actividades arqueológicas realizadas pela Universidade de Málaga (2008-2016) no Complexo Arqueológico dos Perdigões (Reguengos de Monsaraz. Portugal): Considerações finais

A Universidade de Málaga (Espanha) colabora há quase uma década nas investigações arqueológicas realizadas no Complexo Arqueológico dos Perdigões, no Município de Reguengos de Monsaraz (Portugal). Este artigo apresenta os principais resultados da escavação do Setor L1. Descreve as acções, as estruturas trazidas à luz e os processos de preenchimento das estruturas negativas antes de passar a interpretar os contextos tendo em conta a cronologia e temporalidade das diferentes características da arquitetura pré-histórica.

1. Introduction

The University of Malaga (UMA) was invited in 2006 to participate in the research project *Programa Global de Investigação Arqueológica dos Perdigões* (INARP) at the site of Perdigões in the Municipality of Reguengos de Monsaraz, Portugal (Fig.1). The task was carried out under the responsibility of the *Núcleo de Investigação Arqueológica* (NIA) of the company *Era-Arqueologia, S.A*. From that moment the UMA team developed a specific research program following a set of clear objectives (Márquez-Romero *et al*. 2008). The intention was in fact to gain as much insight as possible into the site's general layout and to focus deeper into the feature labelled Gate 1 in Sector L1 to obtain more data as to its shape. Moreover, another aim was also to attempt to offer data on the chronology and temporality of the large outer Ditches 1 and 2, delve into the nature of their fills, and shed light on their potential relationship with the series of adjacent *tholos* type tombs.

The activities which took place for almost a decade (2008-2016) consisted of nine uninterrupted campaigns of archaeological activities (Table 1). The activities included geophysical surveys (Márquez-Romero *et al*. 2011a), a microtopographic rendering of the site (Márquez-Romero *et al*. 2021) and several excavations both in extension and focusing on the main structures of Sector L1 (Suarez-Padilla *et al*. 2013; 2015). Moreover, the activities included about 20 articles and four doctoral theses (Jiménez-Jáimez 2008; Mata-Vivar 2015; Milesi-García 2018 and Caro-Herrero 2022) and other academic works (minor theses, final degree projects).

The different investigations involved about 30 researchers including professors and students from the University of Málaga and other institutions as well as a considerable number of collaborators hired from the Municipalities of Reguengos de Monsaraz and Telheiro. The excavations were carried out in the framework of permits granted by the Portuguese authorities to the company *ERA Arqueologia* over the course of the 2008 - 2010, 2011 - 2013 and 2014 - 2016

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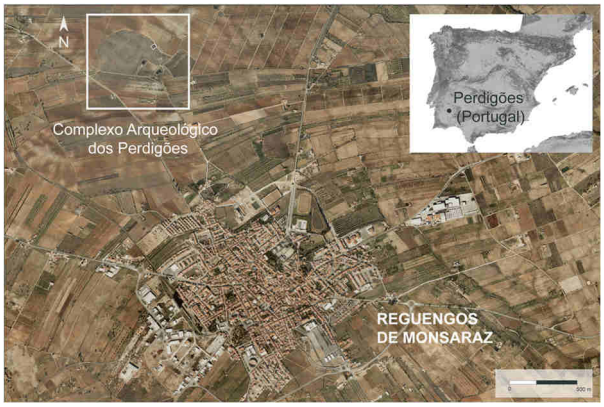

Figure 1 - Location of the *Perdigões Archaeological Complex.*

Table 1 - Excavation campaigns by the University of Malaga at the site of Perdigões (Reguengos de Monsaraz, Portugal).

CAMPAIGN	ACTIVITY	AREA
2008	Geophysic survey: geo-radar *Eastern Atlas Geophysical Prospection*	Sector L (Gate 1) Central Zone Sector I and Q (Ditches 3 and 4)
2009	**June** 1st Geomagnetic survey campaign **September** 2nd Geomagnetic survey campaign **July-August** 1st excavation campaign of Ditch 1	All the site Sector L: Ditch 1
2010	**July-August** 2nd excavation campaign of Ditch 1	Sector L: Ditch 1
2011	**July-August** Microtopographic survey **July-August** Extension excavation	All the site Sectors L1, L2 and L3
2012	**July-August** Extension excavation	Sector L1 (in its totality)
2013	**July-August** Extension excavation: Trenches 9 and 13 (imbrices) Trench 11 ("*tirante*") Trench 12 Upper layers Ditch 1 Trench 137	Sector L1
2014	**July-August** Excavation of the surroundings of Gate 1 Trench 12 Pits 132 to 168	Sector L1
2015	**July-August** 1st Excavation campaign of Ditch 2 Pit 137 Extraction of megalithic stelae	Sector L1
2016	**July-August** Excavation of structures : Trench 10 Pits 108 and 188 2nd Excavation campaign of Ditch 2 **September** Archaeological backfill of the structures of Sector L End of the UMA excavations	Sector L1

triennials. The project was financed by grants (€230,000) from different Spanish public institutions.[1]

This final article is intended to serve as overview of the main findings of the excavation campaigns[2]. Although it represents an end to this research, we remain open to future collaborations both for the benefit of one of the most important prehistoric sites of the Iberian Peninsula and for the cultural heritage of its region.

2. The main structures brought to light in Sector L1

The prevailing notion at the outset of the actions was that the final physiognomy of ditched sites such as Perdigões stemmed from different discontinuous phases of construction, re-excavation of ditches and rebuilding stemming from an *idea of an enclosure* (Whittle 1977; Evans 1988; Scarre 1998) shared by many European Neolithic and Copper Age societies. It is for this reason, combined with the results of specific geophysical surveys and prior extension excavations of Sector L1, that the of the archaeological work focused exclusively on specific structures so as to gather data to achieve the general objectives of the project, that is, to characterise the nature of the structures, the dynamics linked to their fills, as well as the chronology and temporality of their construction and use (Fig. 2).

2.1 Ditch 1

Ditch 1 is a vast feature marked by a roughly circular floor plan with a diameter greater than 473 m. It encloses an area of 159,588 m^2 and has at least four openings or gates (Márquez-Romero et al. 2011b:164-170).

The initial means to characterise this structure was to pursue and expand the earlier excavation carried out by *ERA Arqueología* in 1997 which had not attained the deepest levels of its fill (Lago *et al*. 1998). Upon completion in 2010 the results indicated that the southeast section of Ditch 1 presented a maximum width of 5.5 m, a depth of 3.5 m and was V-shaped. The deposits sealing it were mainly of an anthropic nature interspersed occasionally with thin natural colluvial episodes stemming from the erosion of the geological matrix practically devoid of archaeological material. This work also unveiled that the deepest layers of fill were disturbed by small pits. The thicker layers contained faunal remains devoid of anatomical connection, yet with few signs of erosion. These elements were collected together with hand mounted potsherds corresponding for the most part to vessels with open forms, particularly platters with thickened rims and a few carinated cups. Closed forms, notably with globular profiles, are rare. The layers also contained certain stone tools, both knapped and polished, and occasionally a metallic object and elements linked to copper metallurgy (Márquez-Romero *et al*. 2011b:164-170).

[1] Research projects HUM-4214 (Junta de Andalucía); HAR2010-21610 and HAR2014-53692-P (Ministerio de Economía y Competitividad).

[2] The final monograph on the archaeological activities (Márquez-Romero, Mata-Vivar and Suárez-Padilla 2022) can be downloaded at the following address: https://hdl.handle.net/10630/24995

Figure 2 - General plan subsequent the extension excavation of Sector L1 in 2012.

Figure 3. Photogrammetric image of the section of Ditch 2 (including trench s14).

The upper layers of fill corresponding to the final silting of the ditch were disturbed by two structures interpreted as recuttings (f136 and f194). Of different depth, they share fills consisting of numerous stones and very few artefacts. Worth highlighting among the strata filling the second is the occasional presence of potsherds bearing incised Bell-Beaker decors (Albergaria 1998).

2.2 Ditch 2

Ditch 2 is likewise a vast structure excavated in the subsoil bearing a layout that is similar and basically parallel inside Ditch 1 from which it is separated by a distance of about 7 m. Its maximum observed width is 4.60 m and depth is 2.09 m. Although its final point is somewhat rounded, it presents a 'V' section (Fig. 3). The excavation indicated that Ditch 2 cut into structure s14, a pre-existing trench (Milesi-Garcia *et al*. 2019).

The layers of fill of Ditch 2 present great similarities, both in their nature and content, with those of Ditch 1, notably the alternation of anthropic fills of varying thickness with sporadic natural levels as well as the digging of small pits into the fills themselves. The upper levels are characterised by a greater horizontality resulting in less archaeological finds. The ditch's final fill was disturbed by hollows (f173 and f174) presenting an average diameter of 60 cm and depth of less than 10 cm and a circular semi-subterranean structure (f193). This last case was lined with masonry walls highly damaged by recent plowing rendering difficult its interpretation. Furthermore, it fill contained a complete vessel of globular form with a straight neck separated by a carination, which is typologically ascribed to the 'Ferradeira Horizon'.

2.3 Other pits

Several arc or 'imbrex' shaped pits stand out in front of the gates of Ditches 1 and 2 serving as sorts of fences. Beyond them, to the outside, are other shorter and wider features labelled 'cejas' (eyebrows) Márquez-Romero *et al*. 2011a: 183).

The excavation in Sector L1 made it possible to identify one of these 'imbrices', also proving that, at least in the case of this feature, they actually consisted in two practically parallel trenches labelled respectively 's9' and 's13' (Fig. 4). Structure s9 with a 'V' section is 17 m in length, an average 1.09 m width and 1.30 m in depth. Parallel structure s13 is shorter (7 m), with a section that at the base is somewhat more rounded. It is about half the width (0.45 m) and depth (0.80 m) as the first. Both contain anthropic fills, for the most part potsherds and faunal remains whose nature and proportion resembles that of the larger neighbouring ditches. These trenches were partially destroyed by a hollow dug during the Late Middle Ages, which contained a combination of medieval building materials and pottery as well as a prehistoric stela and fragments of menhirs, which may originally have stood in the surroundings.

Other structures of interest are the series of short and narrow trenches detected by the geophysical survey labelled '*tirantes*' (braces) arranged along radial axes with respect to Ditch 2. The case investigated in Sector L1 labelled s1 is 4.8 m long and 1.18 m wide with a 'U' section. It greatly vertical walls curved downwards defining a flattened base at a maximum depth of 1.5 m. Its fill consisted of layers similar in nature to those described of the ditches, although with less complex from the stratigraphic viewpoint and containing less archaeological materials.

Figure 4 - General view of the "imbrex" type structures (s9 and s13).

Another feature worth highlighting in Sector L1 is a narrow trench (s12) cut by Ditch 1. It is relatively narrow (45 cm in width) and long (about 10 m). What stands out is its depth of 1.60 m and vertical walls. It contained the occasional remains of charred wood. It is possible that the feature was dug to lodge a palisade.

Both the surveys, described above, and the research carried out in Sector L1 unveiled numerous features excavated both through the geological substrate and though the fill of pre-existing structures. Although not all these sunken structures were the object of excavation, practically all were at least superficially diagnosed, confirming that they correspond to two historical moments far apart in time: Recent Prehistory and the Modern Era (16th century AD). Among those attributed to the prehistoric phase, a dated case (f129) stands out as it was dated to the first half of the 3rd millennium cal BC, thus predating to the construction of the great ditched structures.

2.4 Structures using masonry

Sector L1 also yielded the remains of a series of structures masonry. One of them consisted of an arc-shaped plinth of a wall (p1) comprising two parallel courses of stones and internal gravel bounded with earth. This wall appears to have been cleanly cut by a rectangular pit (f150) measuring 2.56 by 1.53 m dug into the geological substrate. The surface of one was lined with a small stone wall (p2). After a first phase of fill, it was subdivided internally into two spaces by two stone slabs (p3 and p4) measuring respectively 0.70 and 0.50 m in length, (Fig. 5). The fills of these features contained faunal remains, several fragments of platters with thickened rims, fragments of 'horn-like' loom weights and the fragment of a crucible. The function of this structure remains undetermined.

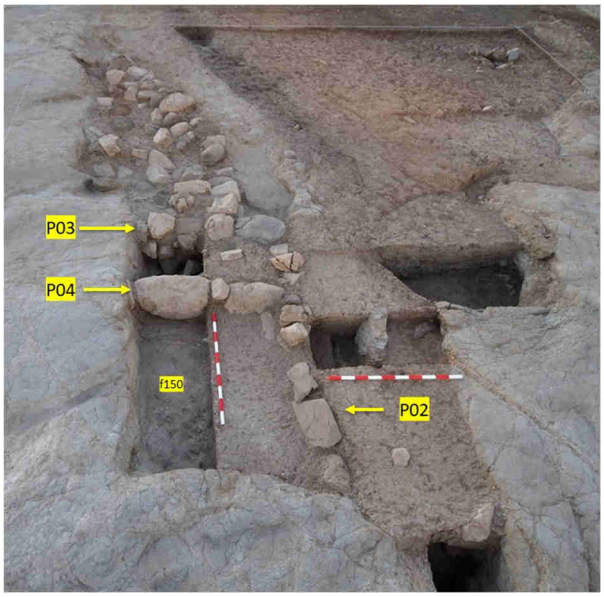

Figure 5 - Detail of the structures featuring stone masonry: p01 and f150 (p02, p03 and p04).

3. Chronology of the structures of Sector L1

A total of 43 radiocarbon datings were carried out for the more significant features of Sector L1[3]. They are broken down as follows: seven for Ditch 1, three for Pit f194, ten for Ditch 2, one for Pit f173, one for Pit f193, five for trench s11, one to trench s12, eight for trenches s9 and s13 (imbrices), one for Pit f129 and three for Pit f150 (associated with the stone masonry). A further 11 samples could not be dated due to the lack of collagen.

All of the analyses were carried out on the bones of various animal species. The 17 samples of *Sus sp*. stand out. *Ovis/Capra*, follows with 13 and *Bos Taurus* with five. Only one sample was available in each of the *Canis Familiaris*, *AGP* and *Equus sp*. cases.

All samples were consigned to Beta Analytic and analysed using Accelerator Mass Spectrometry (AMS). Most yielded values of %C, %N and C:N indicative of a satisfactory quality of collagen ranging within the standard parameters of quality. Worth highlighting are the C:N values that oscillate between 3.2 and 3.4. Likewise, the possible effect of the diet was delved into through δ13C and δ15N isotopes analyses. They in no case reveal any conditions stemming from a potential reservoir effect.

The samples reveal a low deviation (≤ 40 years) and were calibrated by means of the IntCal20 curve (Reimer *et al*. 2020) while observing the potential effect of plateaus and fluctuations in each case. From the methodologically standpoint, both a contemporaneity test χ^2 (Ward and Wilson 1978) and a Bayesian modelling was applied to those with at least three dates. The entire process was carried out by means of the OxCal software, v4.4.4 (Bronk Ramsey 1995, 2001, 2009, 2013, 2017). This was specifically applicable for the Bayesian analysis to establish the beginning and end limits (*Boundary*), the *Span* measure and the chronological *Interval*. To facilitate the reading of the results, the outliers are not represented in the figures and the numerical results were rounded to multiples of 10 when the standard error is equal to or greater than ±25 years and to multiples of 5 when it is less than ±25 years (Stuiver and Polach 1977; Millard 2014).

4. The temporality of the structures of Sector L1

The wide ranges of probability and the frequent interval overlaps of the statistical models serving fix the chronology of the structures of the L1 sector entail clear limitations. It is arduous to offer a precise sequencing of all the construction events, that is, to determine their temporality. We are therefore obliged at this juncture to offer *temporary narratives* bolstered not only radiometric datings, but incorporate other evidence resulting from the archaeological investigation itself (fill dynamics, colluvial episodes, structure overlaps ...). In any case, the model advanced at this point must be understood as an exercise in interpretation and, therefore, open to discussion and susceptible to future modifications or alternatives.

4.1 Construction of the great ditched enclosures (towards the middle of the 25th-24th century cal BC

The Bayesian statistical model (Fig. 6) reveals that the construction of Ditch 2 serving to delimit the first of the two large enclosures, took place between the mid-25th and/or during the 24th century cal BC. This task also possibly entailed the excavation of at least one of the imbrices (Trench s9) which could have functioned as a fence to check the access of this area of the enclosure. Construction of the other large enclosure delimited by Ditch 1, in turn, took place during the 24th century BC. In any case, it is not possible to discard the notion that the new structure (Ditch 1) was intended to form part of the initial enclosure encircled by Ditch 2. This hypothesis is founded on the following: a) the chronometric overlap between the final dates of Ditch 2 and the initial dates of Ditch 1, b) the rigorous parallel layout of the two ditches (practically the only case in the Iberian Peninsula) (Fig. 7), c) the existence of five discontinuities, potentially serving as gates, shared along their respective paths, d) the absolute similarity of their material culture (predominance of open pottery forms, in particular platters with thickened rims, practical absence of decorated pottery, small clay horns, modest metallurgical finds...) and, above all, e) by the presence of up to 17 narrow pits labelled '*tirantes*' arranged radially between the two large ditches (Márquez-Romero *et al*. 2011a: 183). The fact of having access to the dating of one of the '*tirantes*', notably trench s11, is behind a proposal regarding the temporal relationship between it and Ditches 1

[3] The radiocarbon dates and the characteristics of the samples can be consulted at (Márquez-Romero *et al*. 2022, figs 4-5) DOI: https://doi.org/10.14201/zephyrus2022895783

and 2. This has led to the hypothesis that trench s11 was most likely dug at the same time as Ditch 1 when Ditch 2 was totally or partially filled. This therefore implies that this relationship can be extended to the other similar trenches observed along the perimeter of the two late enclosures.

The different evidence then suggests that the most intensive construction in this sector of the *Complexo Arqueológico dos Perdigões* took place throughout a timeframe stretching over a period of about 150 years between the second half of the 25th and the entire 24th century cal BC. The timeframe of these activities must nonetheless not be understood as a reflection of a continuous activity, but rather a series of consecutive actions.

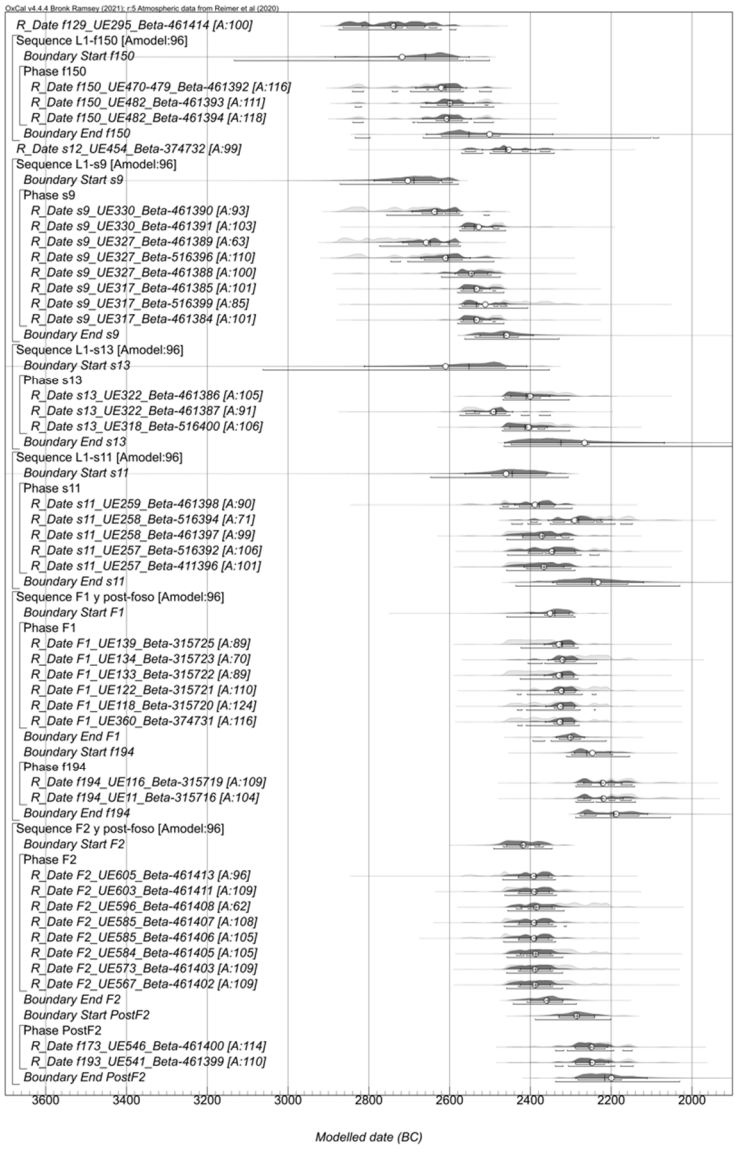

Figure 6 - Bayesian model of the set of structures benefitting from radiocarbon analyses in Sector L1.

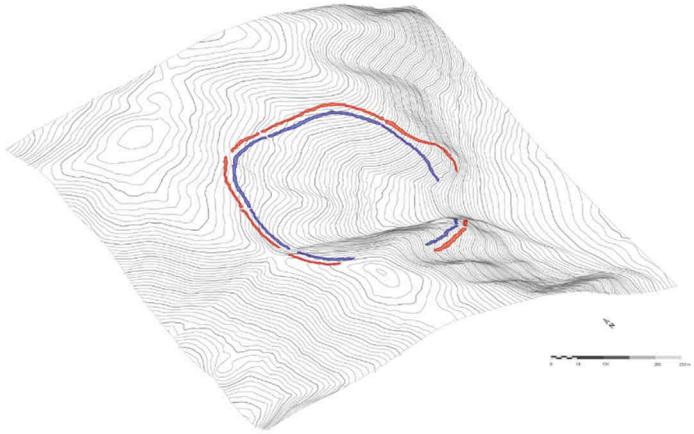

Figure 7 - Digital Terrain Model (highlighted curves 1-5 m) of the enclosures configured by Ditch 1 (exterior) and Ditch 2 (interior).

4.2 Interventions prior to the construction of the two large ditched enclosures (29th-26th century cal BC)

Evidence of 'the past in the past', following the definition advanced by L. Olivier (2004), can manifest itself both through strategies that perpetuate the earlier materiality by reappropriating it and integrating it into new social, political and ontological discourses. It can also, on the contrary, intentionally eliminate, destroy or mask the remains of earlier times. This study has been able to identify certain behaviour of this nature among the structures of this site.

The first of these behaviours falls in line with a 'preservative' action. Although beyond sector L1, it consisted of a deliberate altering of layout of Ditch 1 (yielding a space in the shape of a large pocket) to englobe a few earlier *tholos* type tombs. This action thus incorporated these earlier features into that later moment of the site perhaps which may have already within new ontological keys as elements with a distinct architectural personality responding to new uses (Milesi-García *et al*. 2019: 174).

There is also the possibility based on what could have been at the time surface finds from prior Early Neolithic enclosures or by means of knowledge of earlier enclosures through oral tradition, that Ditches 1 and 2 were laid out intentionally and, more or less, concentrically, with respect to other older features (Valera *et al*. 2014).

Finally, it is also necessary to suppose an acknowledgement of the past through the destruction or masking at the site of older structures. An example of is the deliberate elimination of trench s14 when Ditch 2 was dug. Allthough trench s14 could not be dated independently, it is evident that existed in an earlier phase, perhaps part of a previous enclosure.

4.3 Features predating the construction of the vast ditched enclosures (23rd century BC)

It appears evident that ditched enclosures were no longer built at this site subsequent to the 23rd century cal BC. However, there are features indicating post-ditch activities. Two structures cut through the fill of Ditch 1. The first, Pit f136, is

characterised by a fill of stones (Fig. 8) devoid of organic remains that would have facilitated an absolute dating. The second, Pit f194, was initially thought to belong to the last phases of fill of the ditch. The revision in 2013 of the upper levels of fill of this structure clearly indicated the stone fill came after the original fill of the ditch. Moreover, the dating is is confirmed by radiocarbon dating of element in the stone fill which yielded two good radiocarbon datings as well as several fragments of incised Bell-Beaker ware.

There are on the other hand, several shallow and irregularly shaped pits cutting through the original fills of Ditch 2. The dating of certain, notably f173 and f193, confirm that they were dug subsequent tothe filling of Ditch 2. A ceramic vessel that can be formally linked to the 'Ferradeira horizon' was unearthed specifically in layer SU 541 of the second pit. In any case, it remains unclear if the intention of the more recent features was to revive in some way the old

In short, it is possible to evoke a series of specific activities taking place during the cal 23rd century BC which were far removed from the previous massive undertakings consisting of digging small trenches or modest pits containing depositions of material culture and bone remains resembling those of earlier times. A seductive notion is that the new historical circumstances no longer allowed significant human concentrations or the mobilisation of large work forces. These modest depositions served as strategies to recall irretrievable but not forgotten social events.

5. Final considerations

The chronometric information gleaned from Sector L1 (chronology) and the proposal as to the biography of the features (temporality) reveals that the space occupied by what was thought to be represented by Gate 1 (Sector L) during the timeframe between the 26th and the 22nd century BC saw a constant evolution where making, unmaking and remaking became the principal *modus operandi*. This situation thus yields a paradox: is it possible that Gate 1, considered a sum of elements, only existed from the moment and time in which, from the present, we began to question its existence? What really are its structural elements, if there are any? Or what role did it play in the layout of this millenary site?

The set of absolute dates has unquestionably revealed a diachrony of architectural elements that were initially assumed to be contemporary simply due to their proximity. These circumstances should distance us from the presentist perception viewing these monuments as the result of a single architectural project with a determined technical development with a prolonged use until its final abandonment.

On the contrary, what appears must have been the result of a series of events (not to be interpreted as constructive phases), which individually were possibly of short duration but stretched over a relatively long timeframe, potentially over several generations. The social and economic intentions and the very ontological perception of the area must have changed during

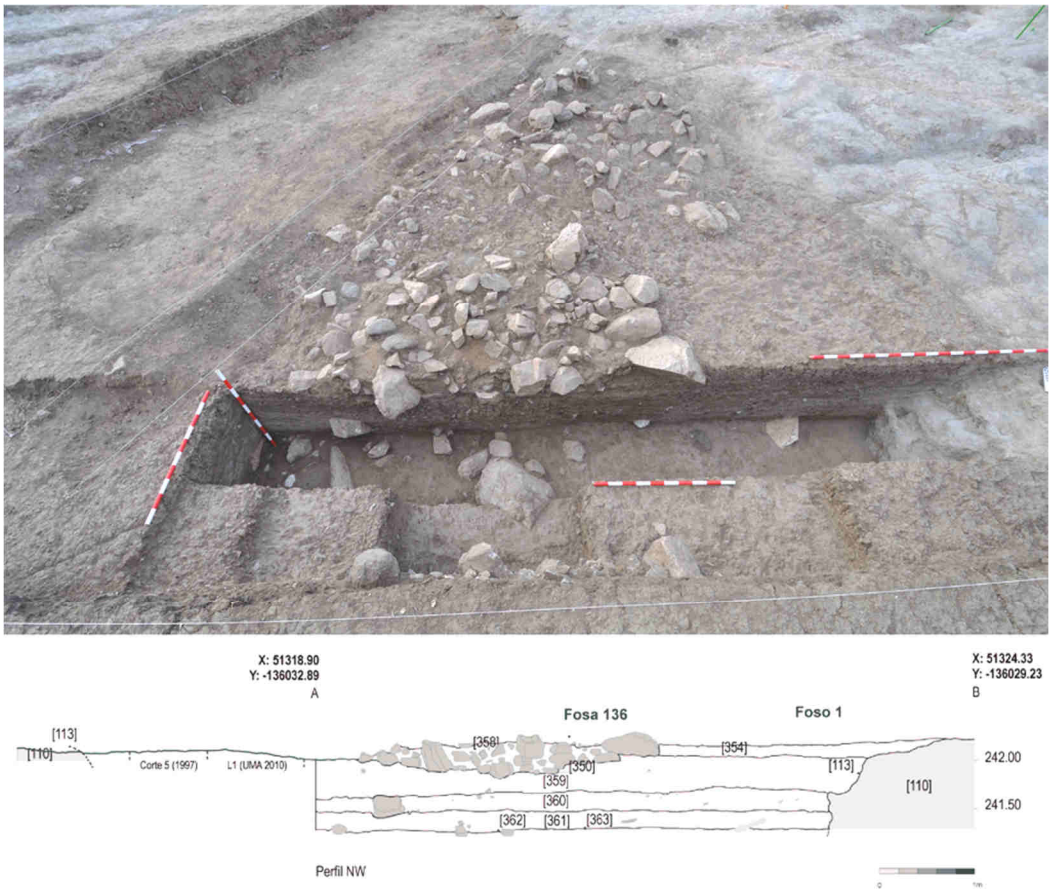

Figure 8 – Pit f136, by way of revival, made on the fill of Ditch 1.

the continuous remodelling of its architecture. These circumstances developed at a historical moment of profound crisis throughout the megalithic landscape heralding the advent of the Bronze Age.

But, if the architecture of what is known as Gate 1, as noted, was constantly mutating and ephemeral, what makes the place a pole of interest, a benchmark where so many actions appear to have been concentrated over several centuries? The only constant observed as a *continuum* in the site's biography is its astrological orientation, in this case, towards the winter solstice.

The notion that the location of Perdigões is not incidental and that its spatial organisation expresses a cosmological map with close astronomical links has been previously advanced (Valera 2008: 251-252). This is moreover a frequent trend among the European panorama of ditched enclosures and applicably in general to all vernacular architecture (Márquez-Romero and Jiménez-Jáimez 2010: 492). To the notions advanced above must be added the nature of the orography marked by the two vast enclosures. It comprises an amphitheater-shaped depression only open to the southeast that generated when observing the celestial vault from its interior a second horizon where the sunrise was easily observed. This horizon for generations thus effortlessly consolidated the orientation of the discontinuity or access zone and its changing architectural features.

Therefore, it is not rash to suggest that the true sense of Gate 1 was not simply an access, but as *solstitium loci*. It represented a fundamental static reference where several generations interacted through different tasks intended to revitalise the site and, perhaps, with greater intensity, during the winter solstice itself.

Acknowledgements

In order to successfully achieve the objectives of a task that has been so long and at times so complicated required the enthusiastic and disinterested assistance of many people and institutions. We must particularly highlight the work of Antonio Valera from the *Núcleo de Investigação Arqueológica* of *ERA Arqueología* not only for inviting us in 2006 to form part of the *Programa Global dos Perdigões*, but also for the complex task of coordinating the macro-project. His support and advice was of invaluable to formalising the excavation permits and in achieving our overall goals. Miguel Lago likewise was key in facilitating the administrative tasks and functioning as a team in our brother country. Our sincere appreciation goes to the men and women of the towns of Telheiro and Reguengos Monsaraz for their total and friendly welcome and who made us feel at home. We dedicate our work especially to them with the hope that it will serve to further disseminate and better protect the exceptional site. *Muito obrigado*.

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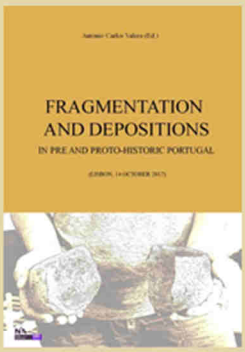

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