



AMS ^{14}C dating at Can Ferrerons, a Roman octagonal building in Premià de Mar, Barcelona



Marta Prevosti ^{a,*}, Alf Lindroos ^b, Jan Heinemeier ^c, Ramon Coll ^d

^a Institut Català d'Arqueologia Clàssica, Plaça d'en Rovellat s/n, 43003 Tarragona, Catalonia, Spain

^b Åbo Akademi University, Domkyrkotorget 3, FI-20500 Åbo, Finland

^c Aarhus AMS Centre, Aarhus University, Department of Physics and Astronomy, Ny Munkegade 120, DK-8000 Aarhus C, Denmark

^d Museu de l'Estampació de Premià de Mar, C. Joan XXIII 2-8, 08330 Premià de Mar, Catalonia, Spain

ARTICLE INFO

Article history:

Received 6 March 2015

Received in revised form 9 January 2016

Accepted 4 February 2016

Available online 27 February 2016

Keywords:

Octagonal building

Centralized building

Late Roman

AMS ^{14}C dating

Mortar

ABSTRACT

A singular Roman dwelling, octagonal in ground-plan, was excavated in the year 2000, in Premià de Mar. It is a freestanding pavilion within a larger settlement called Gran Via-Can Ferrerons. It was not possible to date it archaeologically because the basement trenches did not contain any significant dating artefacts. Archaeological research undertaken into the architectural typology of the monument led us to the hypothesis that the structure is to be interpreted as late Roman luxury domestic housing. It was decided to use AMS ^{14}C dating of the mortar in the masonry. This procedure dates the hardening of the carbonate binder in the mortar, which is the actual time of construction. We present the results of three analyses of mortar samples taken from the walls of the building. Radiocarbon dates coincide with the assumed architectural typology date, the date of the strata excavated at the site, and the date of the construction technique. These matches support the validity of the results (5th and 6th century CE).

© 2016 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

The octagonal Roman building of Can Ferrerons, in Premià de Mar (Barcelona) was discovered in 2000 and was excavated until 2008 (Fig. 1). The excavation has not been able to date its construction because the basement trenches in the building did not contain any significant dating artefacts (Bosch et al., 2005; Coll, 2009a, b; Font, 2013). Archaeological strata of soils, use and abandonment of the building have been dated to the 5th and 6th centuries CE. However, there were artefacts in them dated between the 1st and 6th centuries CE because the building was constructed in a site with a long history.

The peremptory need for establishing the building construction date follows from its importance. Can Ferrerons has a unique architecture, octagonal in ground-plan, with four large rooms, including a bath suite of linear development. It is also well preserved with walls up to 3 m in height, thanks to its robust construction. The correct interpretation of such a singular dwelling requires an accurate date. Our research on the use of the octagonal layouts in Roman residential buildings has revealed examples from Republican times (509–27 BCE) until late Antiquity (CE 284–714) as explained below. Although in the late Roman Empire there are many more examples to be found and seem to point

to its use as dining suite. Because of this it is important to establish if the building was constructed in the late empire and fits to this more usual use or if it was constructed in another time and therefore we have to think about alternative concepts.

In this paper, we present the results of AMS ^{14}C dating of three mortar samples taken from the walls of the octagonal building. The interpretation and reliability of the dating results will be discussed as well as the implications for the chronology of the monument.

2. Can Ferrerons

2.1. Archaeological framework

Can Ferrerons is a freestanding pavilion of 710 m² within a larger settlement called Gran Via-Can Ferrerons covering an area of 5.5 ha (Coll, 2004) (Fig. 1). It is located on the coast, between the beach and (200 m away from it) the Roman road Via Augusta. It is in the town of Premià de Mar, 20 km north of Barcelona.

We only know about some small portions of this extensive site as can be seen in Fig. 1 (Barral, 1978; Prevosti, 1981; Coll, 2004; Bosch et al., 2005). The urban environment does not allow extensive excavations but what we discovered suggests a significant settlement with a substantial industrial core, normally interpreted as a villa. The rich Roman mosaic (Fig. 1B, 1) supports this latter classification. The presence of different workshops also supports the interpretation of a villa.

* Corresponding author.

E-mail addresses: mprevosti@icac.cat (M. Prevosti), alindroo@abo.fi (A. Lindroos), jh@phys.au.dk (J. Heinemeier), collmr@premiademar.cat (R. Coll).

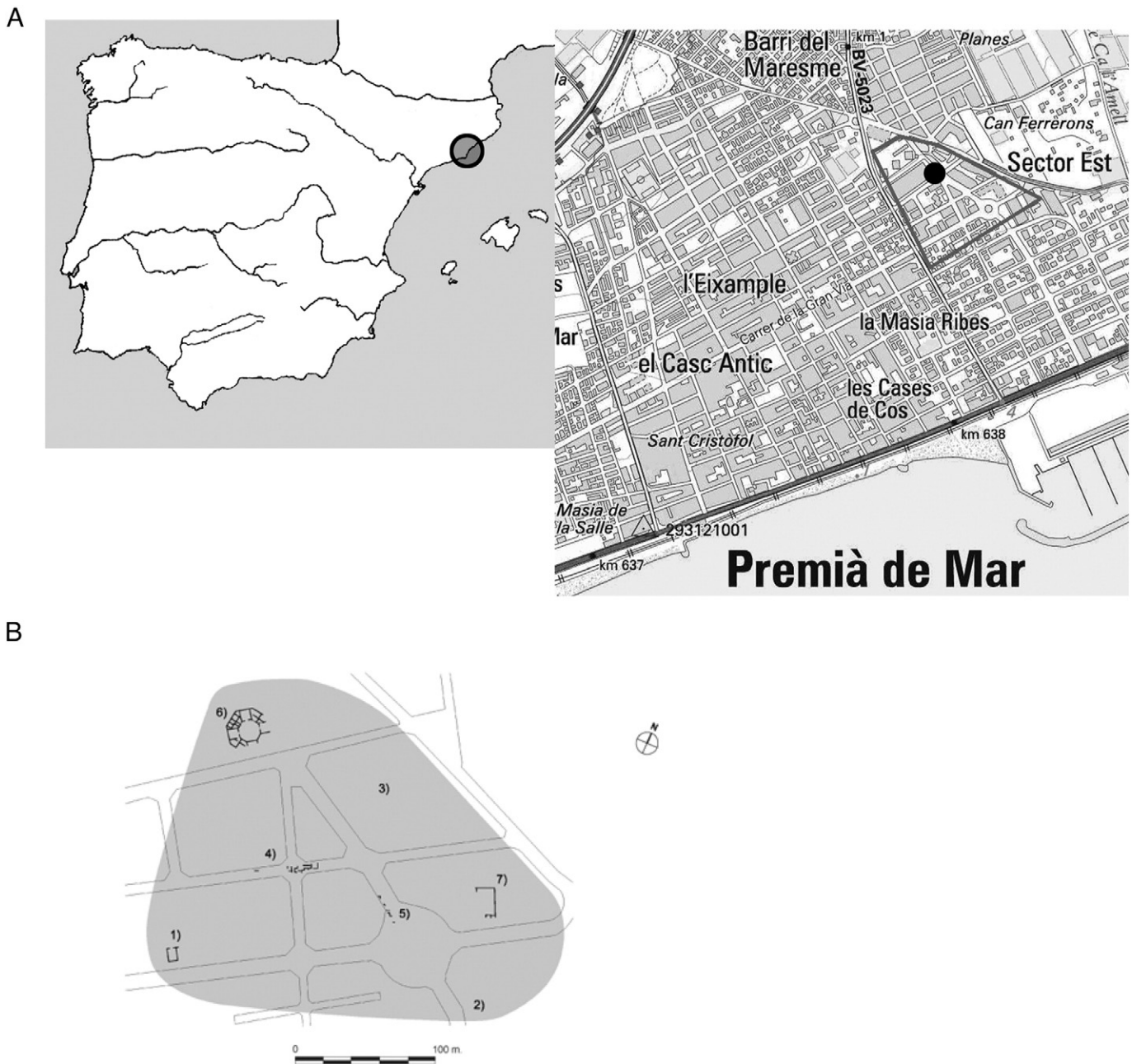


Fig. 1. A. Location of the site Gran Via- Can Ferrerons, in Spain and in Premià de Mar. B. The site Gran Via-Can Ferrerons with the seven points of findings: 1- Gran Via mosaic; 2- Mas Foixà; 3- Vallpremià; 4- Col·lector smelting ovens; 5- Santiago Rusiñol 5th century walls; 6- Can Ferrerons octagonal building; 7- Plaça Dr. Ferran pottery workshop.

Within this villa Can Ferrerons is a centralized building, the result of meticulous architectural planning (Fig. 2). It consists of two octagons, one embedded in the other. The central octagon was drawn inside a circle of 14.8 m in diameter or 50 Roman feet. The external octagon was drawn in a circle of 29.6 m or 100 Roman feet in diameter. Significantly, the radial walls that compartmentalize the space between the two circles are distributed evenly at 45°, confirmed by a measurement based on the circumference.

Four large rooms, of 6.6×6.35 m (42 m^2), open around the central octagon (Fig. 2: numbers 8, 9, 14 and 20). The other four sides between the large rooms, on the N, S, E and W, are connected with a subdivision of minor trapezoidal rooms following a symmetrical pattern. One of these latter spaces is occupied by the bath suite.

The resulting building is of singular complexity and clearly planned, emphasizing the geometrical over the functional. It is distinctly the

result of a unique architectural design executed *ex novo* in a single construction phase.

2.2. Interpretative problems of the octagonal building and its dating

Octagonal plans are not very common in Roman residential architecture, although they occasionally appear in wealthy houses. Within Roman domestic architecture, the earliest octagonal building we know of is in Asinello (Viterbo, Italy) and it dates from the mid-1st century BCE (Barbieri, 1995; Broise and Jolivet, 2000; Marzano, 2007, 116–118, catalogue L375). It was a space for the production of oil, with an earlier use in wine production (Brun, 2004, 42). Also dated to the end of the 1st century BCE, the impressive maritime villa of Giànola, Formia, Italy, has an octagonal building (Ciccione, 1990; Marzano, 2007, catalogue L111), interpreted as a *nymphaeum*-

Download English Version:

<https://daneshyari.com/en/article/7446182>

Download Persian Version:

<https://daneshyari.com/article/7446182>

[Daneshyari.com](https://daneshyari.com)