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# THE STRUCTURE AND FUNCTION OF THE CISTERN AT LA PIANA



Jane K. Whitehead

Recent excavations at the site of La Piana, an Etruscan settlement of the late Classical period near Siena, have exposed a large circular vat with an interior diameter of about 4.5 m., located roughly at the center and highest point of the site (fig. 1). This feature is constructed of dry-laid field stones in two concentric cylindrical rings with a meter-wide cylinder of dense clay packed between them. Such a configuration clearly was intended to hold water. The feature was built into the main structure at the site, Building A, and was roofed. A central pillar of very porous, poorly-fired or sun-dried bricks held up a roof that would have been constructed to trap and channel rainwater.

This paper presents the most recent evidence for the cistern's roof configuration. Our original reconstruction<sup>1</sup> posited a conical roof of thatch set within the gabled roofs of the flanking buildings; water was trapped through a molded terracotta compluviate ring set into the protruding wedge of the conical roof. Several features had supported this reconstruction: the cylindrical supporting wall, the central pillar of brick, the discovery of a fragment of a molded terracotta ring and exterior pavements of densely packed limestone that angle downward away from the building. Such a reconstruction, however, would not allow for sufficient entrapment of water to fill the cistern.

Discoveries of fragments of daub showing the impressions of roof tiles, as well as patterns of charred timbers, which emerged from the basin of the cistern during the 1999 excavation season, have encouraged a different reconstruction (fig. 2). We now hypothesize a compluviate roof system that utilizes the entire roof area of the buildings on either side of the cistern. In this reconstruction, the central pillar supports a beam that runs across the center of the cistern and rests on the top of the circular wall of the surrounding structure. Transverse beams running east-west, supported on this beam, form the northern and southern supports for a rectangular "Tuscan-style" compluvium, which would be off-

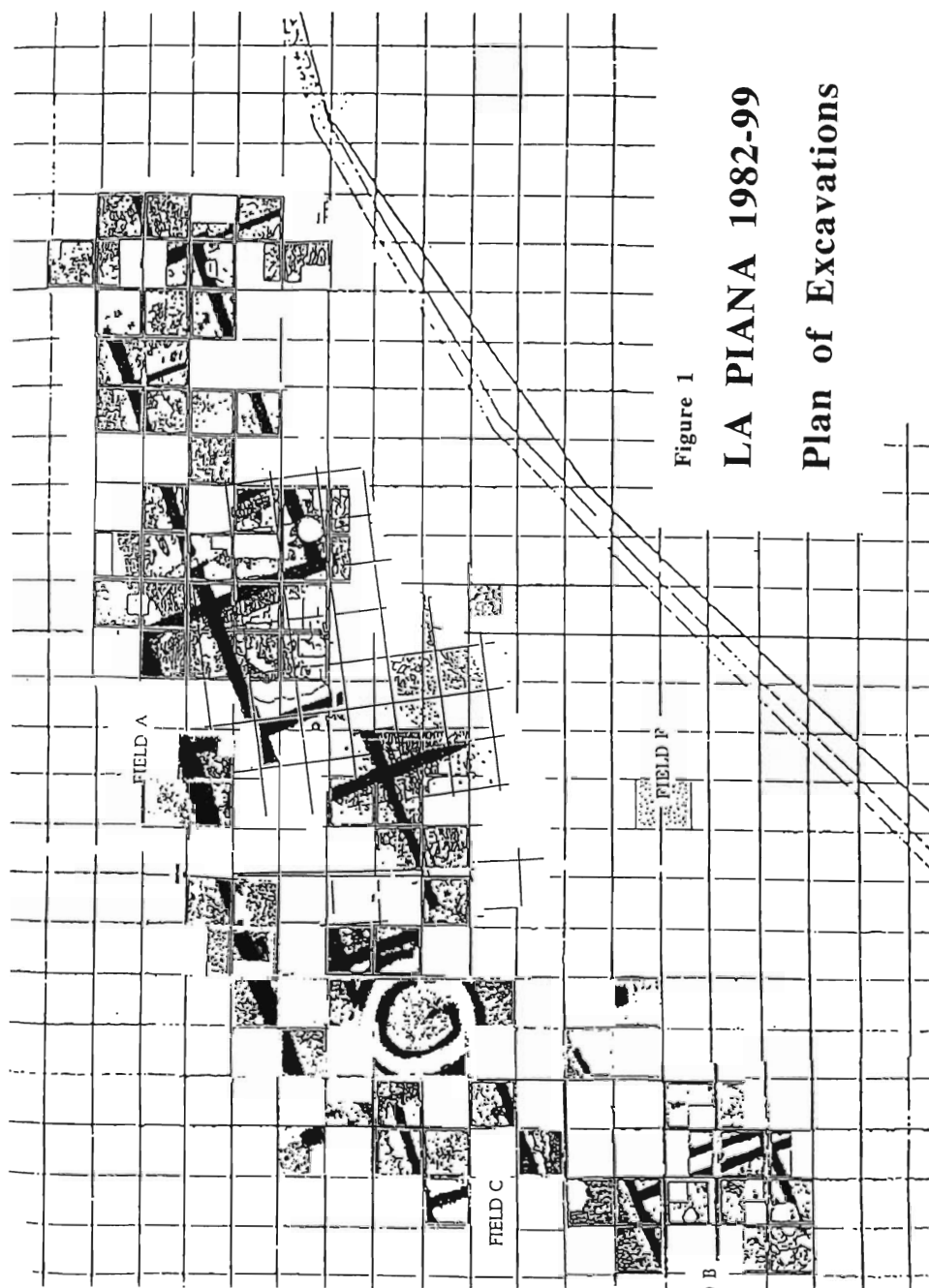


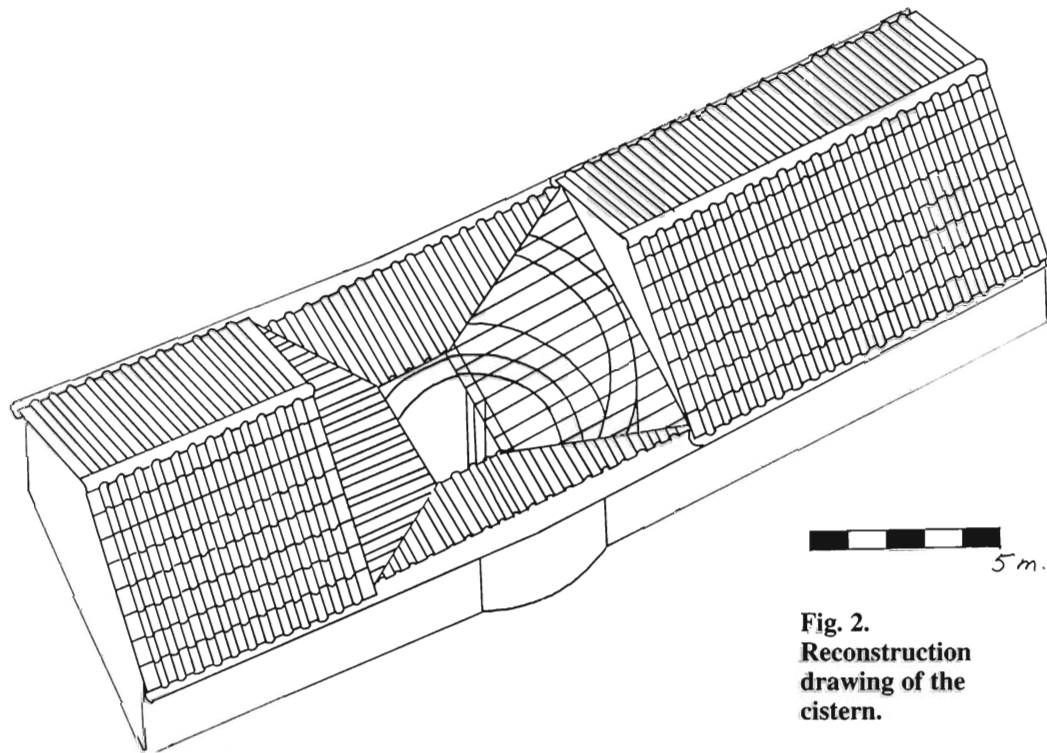
Figure 1

**LA PIANA 1982-99**

**Plan of Excavations**

center with respect to the cistern plan. A parallel for an off-center compluvium that is not supported by, and its presence not signaled by, the masonry walls is found in the Casa dell'Impluvium, a sixth-century B.C. Etruscan house at Roselle.<sup>2</sup>

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La Piana



**Fig. 2.**  
**Reconstruction**  
**drawing of the**  
**cistern.**

This paper also explores the cistern's subterranean structure (fig. 3). The inner face of the basin now appears to angle outward as it goes down, and suggests that the destroyed part of the face originally curved slightly upward toward the center in a corbeled fashion. This corbeling, even if it offered only a partial covering, would have cut down the area of exposed water and thus have reduced both evaporation and pollution. The closest parallel in subsurface form, but without the angled walls, appears to be a roughly contemporary cistern at Monte Bibeale, an Etrusco-Celtic site near Bologna.<sup>3</sup> The method of construction of La Piana's basin roughly fits Bizzarri's Type I in his typology of cisterns established for Orvieto.<sup>4</sup>

Drains would have been necessary for controlling overflow and for cleaning the basin in case the water became contaminated. Two channel-like features, filled with loose stone and debris, seem

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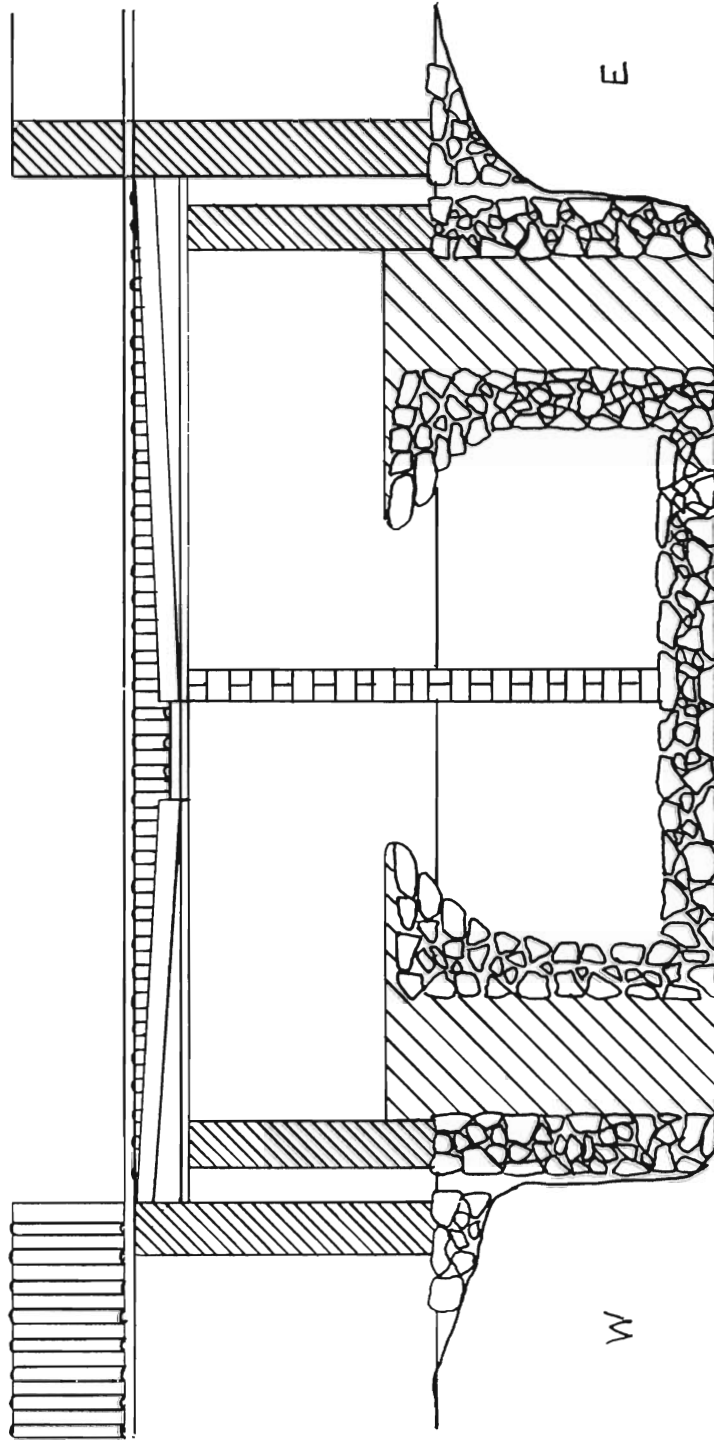


Fig. 3. Reconstructed elevation of the cistern.

to lead away from the cistern, but we have not yet found where or whether they tap into the basin.

The cistern, like the rest of the site, was destroyed deliberately. The southeast face of the inner basin wall was pried away from its arc and forced into the center of the basin. Someone clearly did not want the cistern to be used again or the site to be reinhabited.

Here, then, is a technology for which the Etruscans were well known, water management, employed on a scale and in a context for which there are few excavated parallels.

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## NOTES

1. This was published in J. Whitehead, "Grape Pips, Dog Bones, and Acorn Missiles: Who Destroyed the Site of La Piana?" *Archaeology Odyssey* (Summer 1998) 36–43.
2. L. Donati, *La Casa dell'Impluvium. Architettura etrusca a Roselle* (Rome 1994); *ibid.*, "Collina nord: la casa dell'Impluvium," in F. Nicosia and G. Poggesi eds., *Roselle: Guida al parco archeologico* (Siena 1998) 64–68.
3. See M. T. Grassi, *I Celti in Italia* (Milan 1991) fig. 22; and V. Morrone, *Guida al Museo "L. Fantini" di Monterenzio e all'area archeologica di Monte Bibele* (Bologna 1998) figs. 18 and 20.
4. C. Bizzari, "Orvieto Ipogea: primo inquadramento tipologico delle principali emergenze storico-archeologiche," in B. Cavallo, ed., *Orvieto ipogea ovvero della proprietà del sottosuolo* (Regione dell'Umbria Giunta Regionale: Assessorato dell'Area Ambiente e Infrastrutture, 1990) 49–61; and for the shape, cavità 779.