ARCHIMEDES, THE NORTH BATHS AT MORGANTINA, AND EARLY DEVELOPMENTS IN VAULTED CONSTRUCTION

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This essay is a brief preliminary survey of early forms of vaulted construction, all found in contexts of bath architecture, first at the Greek city of Morgantina in the third century B.C., and then at other sites in the western Mediterranean in the second and first centuries B.C. The North Baths complex at Morgantina is presented briefly, before the vaulting from three rooms in these baths is discussed. Then follows consideration of the other early examples. Excavation and study of the thermal complex at Morgantina are still in progress, and most of the other sites have not yet been fully published; therefore, certain observations remain provisional.1

Discussion of the vaulting system found at Morgantina is based on firsthand knowledge. For the remaining instances, however, observations are limited by the information available in the relevant preliminary reports. Yet in spite of the restrictions, these earliest known above ground domes and vaults present an interesting picture of innovative and experimental regional developments before the widespread use of opus caementicium revolutionized Roman architectural design and construction.

1 In 1970 and 1971, excavations at the ancient Greek settlement of Morgantina, directed by Hubert L. Allen of the University of Illinois, revealed the remains of two adjacent bathing complexes in the area of the ancient city known as Contrada Agnese. The preliminary report was published in Hubert L. Allen, “Excavations at Morgantina (Serra Orlando), 1970–1972: Preliminary Report XI,” American Journal of Archaeology 78 (1974), 370–382. Although the two structures were dated by the excavators to the late fourth to early third centuries B.C., current ceramics and numismatics evidence indicates the probability of a mid-third century date for their construction. As a result of various circumstances, excavation of both buildings was never completed, and the site remained published in preliminary form only. In 2003, excavations of the North Baths were resumed by U.S. excavations, directed by the author, with the intention of fully uncovering the complex and producing the final publication on the building. The North Baths are described and discussed in detail in a recent study of western Greek baths; see Sandra K. Lucore, “The Balaneion in Magna Graecia: Tradition and Innovation in Western Greek Baths,” Ph.D. dissertation, Bryn Mawr College, 2007).
The Hellenistic period was one of great originality and creativity, in science, literature, the arts, as well as architectural design and urban planning. Sicily in the third century B.C. was no exception, and it is not surprising that the early vaulted construction at Morgantina was ultimately a result of the city's position within the prosperous kingdom of Syracuse under Hieron II. That all of these early experiments in a new form of roofing took place in bathing establishments, in Greek and Roman contexts, is clear indication of the increasing importance given to the development and enhancement of this particular civic amenity in urban environments.

The North Baths at Morgantina (figure 1) are located at the western edge of the urbanized zone within the walls, at the intersection of plateia B, one of the two major east-west thoroughfares of the ancient city, and Stenopos W 14. Currently available evidence suggests that this part of the city lay at the edge of the residential zone and was given over to public structures. The innovative and experimental nature of the design and construction of particular features of the North Baths is one of the building’s hallmark characteristics. The larger context for the dome and vaults is elucidated by a brief overview of the eleven rooms in this building and the function of the various spaces (see figure 1). Benches are a prominent feature of half of the rooms of the complex. They provide necessary furniture for waiting or storing personal belongings in rooms 1 and 2 before entering the tholos, room 5, where bathing took place in individual portable terracotta bathtubs. Room 7, with a bench installed along the west wall, functioned as an anteroom (apodyterion) to room 8, whose function remains not entirely clear because of the presence of

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2 Allen, “Excavations at Morgantina,” 370–382, believed that the North Baths and the south bath building were parts of one large complex; however, it is now clear that the two formed separate structures. In addition, adjacent to the south baths was located a sanctuary to Demeter and Persephone, deities well represented elsewhere at Morgantina. In 2004 and 2005, excavations revealed the presence of a structure directly opposite the North Baths, on the south side of plateia B. Very little has been excavated, but a plausible argument can be made for the identification of this building as a gymnasium, quite possibly associated with a track facility located further to the south. What the evidence thus far suggests is that especially during the second half of the third century B.C., civic life at Morgantina was significantly enhanced, including the provision of new and innovative facilities for luxury bathing. The larger context of this embellishment of the public sector of the city is Morgantina’s position within the Syracusan kingdom of Hieron II, discussion of which appears below concerning the appearance of the dome and vaults at Morgantina.