

BYZANTINE INNOVATIONS

Frederic Will, Ph.D.

Overview Byzantium, a vast empire like the Roman, understandably built on the basis of its earlier exemplar. In its millennium long history Byzantium prospered from the innovative city building, and amenity-creating, skills of the Romans, while here and there innovating in a manner suitable to the life and security styles of a new Empire exceeding in comfort and sophistication any seen to that date. We look, below, at a few of the major Byzantine innovations.

Architecture

Cross in square construction Devotedly Christian, in their fashion, Byzantine architects managed--starting in the 8th century C.E.--to create an architectural form uniquely expressing the intention behind it. The central area of the church was cruciform, inscribed in a square, and topped with a round dome. The effect is compact: the space of worship is tightly bounded; the long axled nave of the Gothic is a thing of the past. Worship is concentrated, and the altar up close to the liturgical action.

The pendentive dome This architectural innovation, dramatic in Justinian's Hagia Sophia Cathedral, is a brilliant solution to the problem of blending the vast, light-capturing dome, into the sub-domes and arches that carry the energy of the airy ceiling down to the distant floor below.

Warfare

Greek fire Greek fire is our name for the Byzantine version of a projectile fire-spreading device used in naval warfare to assail the prow of an enemy warship. This was not a new device--the Assyrians used it as early as the 9th century B.C.E.--but the Byzantines, from the later seventh century C.E. on, used it to uniquely powerful effect, mastering the deadly art of keeping a wall of fire aggressively burning on the surface of the water.

Ballistic devices Byzantine military engineers were highly skilled at constructing deadly ballistic devices. In addition to Greek fire they excelled in the creation of flamethrowers, incendiary grenades, and stone-throwing catapults.

Arts and Amenities

Icons The art of the adorational icon, created in stone, mosaic, cloth, wood, is not uniquely but is most eloquently developed in Byzantine culture, where not only the artistic but the technical demands of this miniature religious form manifest extreme skill and patience.

Toilets These vessels of evacuation, which for the Greco-Roman world (and infinitely before that) were basically chamber pots to be dumped from the window, became among the Byzantines comfortable seating arrangements from which, for the lucky and well off, excreta could be washed down into drainage systems.

Reading

Demus, O., *Byzantine Mosaic: Decorative Aspects of Monumental Art in Byzantium*, London, 1947.

Mango, Cyril, *Byzantine Architecture*, New York, 1976.

Discussion questions

There were many water sources in the cities of the Byzantine Empire. How was this water supply harnessed? Were there fountains, wells? Were there sewers?

Naval warfare was often decisive for the Byzantines. What kinds of threats from the sea were they anticipating? How did they fare, in warding off attacks?

What military explanations are to be given, for the crumbling of the Byzantine Empire before the Ottoman Turks? What kind of role did naval fighting play in that defeat?