

The “spina-pesce” and the “corda-blanda”: florentine tradition in the (self-supporting) domes rotating

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Abstract This article deals with the construction technique in the realization of self-supporting rotation domes in the “spina pesce” (herringbone) florentine mode. From the start of construction of the dome of Santa Maria del Fiore (1420-1436) the workers of the Opera del Duomo were called to realize many factories in Tuscany, during the Republican era and during the Grand Duchy. These workers, with their many years of experience in various fields of construction (masonry “a sacco”, carpentry, carpenters), when they were facing the realization of domes within the fortifications applied the “spina pesce” (herringbone) system with different systems of brickwork placed in the knife mode (for example: helical, double helical, helical twisted, etc.). They solved the structural problem of structure with a self-supporting dome, without any use of wooden scaffolding in the first three quarters of the building. The use of brick was essential for this technique.

Several examples: the inner dome of the tower of the fortress of Volterra (1478) Francesco di Giovanni di Matteo said “il Francione” (1428-1495), the inner dome of the left polygonal strut of the fortress of Poggio Imperiale in Poggibonsi (1488) by Giuliano da Sangallo (1445-1516), the inner dome of the largest round tower (“rondella”) in the Fort of Sarzanello (1492-1504) made also by Francione, the inner dome of the tower next to the entrance of the fortress of Castrocaro (1499) by Antonio da Sangallo the Elder (1453-1534), the dome of the tower of the Fortress of St. John called “da basso” (1534) by Antonio da Sangallo the Younger (1484-1546); the dome of the front entrance to the Florentine gate in “Terra del Sole - Heliopolis”, the ideal fortified city (1564-1579) by Baldassare Lanci (1510-1571), Francesco Camerini called “il Sammarino” (1525-1570), Bernardo Buontalenti (1536-1608).

Keywords Self-supporting dome; rotation dome;