

Site Summary: San Carlo alle Quattro Fontane in Rome, designed by Francesco Borromini, reported on by Julia Truten

San Carlo alle Quattro Fontane, also known as San Carlino, has become a crucial point of orientation in defining the Baroque. Its architect, Francesco Borromini, was born in 1599 and committed suicide in 1667. Leo Steinberg described the layout of the church in terms of its geometry:

“1) Two triangles with shared base, [with] perpendiculars erected over their sides. 2) Two tangent circles [are] inscribed, yielding the foci—and the short segments—of an inscribed oval. 3) A double-rail rectangle tangent to the oval. 4) Semi-circular chapels in the long axis articulated by four columns. 5) Chamfered corners reducing the rectangle to an octagon. 6) Completion of the side chapels.”

Described more concisely, the church’s basic plan is a “lobed rhombus-cross.” The earliest surviving plan of the church demonstrates how it “evolved from an elongated Greek cross into its final synthesis of cross, oval, and octagon.” The centrality of the oval has led Borromini to be thought as “neo-medieval,” since he skipped the column-based proportionality of the Renaissance.

Michael Hill’s article, “Practical and Symbolic Geometry in Borromini’s San Carlo alle Quattro Fontane,” focuses on the surviving plans of the church and how the apparent process displayed on them reveals the thought process and intentions behind the design. Borromini received many requests to reveal the “long-held secret of the church’s morphology,” and some of these plans, especially the ones with erased constructional lines, are thought to be a response to those requests. In analyzing these plans, the article inspects individual geometrical elements, looking at every triangle, rhombus, and construction line, and comes to conclusions like this one: “The concentric triangles are not arbitrary; rather they demonstrate that the governing ratio remains constant as the spatial envelope expands.” The article also identifies relationships between form and content that the plans reveal, such as the fact that “Borromini triangulated the plan because he wanted to demonstrate that Trinitarian symbolism permeated the whole convent;

the geometry did not create the architecture, rather the architecture created the geometry.”

Apparently highlighting one particular constructional element, the *biangoli*, helps solve such enduring mysteries as the church’s lateral arcs. The other notable mathematical point Hill makes is that Borromini uses his signature ratio, $1:\sqrt{3}$, in the church and its plans; Hill enumerates the many other sites in which Borromini has used this ratio.

After discussing the geometry of the church, Hill explains in a more detailed scope how the geometry reflects the symbolism. The presence in the church of *biangoli*, a creation of Euclid to prove the construction of an equilateral triangle, supports San. Carlino’s status as a trine instantiation of the Trinity; confirming this, Borromini inscribed the Trinitarian cross at the center of some of his plans. Further trinitarian evidence exists in the geometry of the “stucco relief on the lavabo niche, in the wrought iron portalumi installed at the base of the dome, [and] the trefoil cusps in ironwork on the chapel doors.” Similar symbolism is also found in the mandorla, directly related in shape to the *biangolo*, which (through geometry) relates to the dualism of Christ and the four-ness of his world and realm(s). The article goes on to examine the high altar piece and other decorations, looking at every possible manifestation of symbolism.

Huemer’s article begins by giving some biographical information on Borromini, discussing his apprenticeship with Bernini and therefore his proximity to St. Peter’s and the work of Michelangelo. It even quote Borromini’s writings in which he makes his Michelangelo hero worship abundantly clear. In detail the article enumerates what St. Peter’s baldacchino would have looked like under Borromini’s gaze, and which Michelangelic elements would have most commanded it. The article then traces the connections betwixt Michelangelo’s baldacchino and the facade of San Carlino, starting with “the combination of giant and small orders.” Huemer acknowledges the universal adjective of the church, “undulating,” but states that the double level of nearly equal in height, smooth-shafted columns are equally striking to him as they give the impression of a Hellenistic tomb or gateway. The facade is unique in its use of columns since they “stand as sculptural elements arbitrarily dividing the bays”; apparently the only other instance of columns designed in this way is in the designs of Michelangelo. The twisting of the column capitals and bases is also the only indication of movement, since the columns are

smooth-shafted, and this is the only place where Borromini gives that level of motion influence to the columns, influenced by Michelangelo's Capella Sforza.

Huemer pays some attention to the relationship between architecture and sculpture; apparently Borromini continues the work in that area begun by Michelangelo, advancing it with Baroque touches such as wind-blown everything. He then discusses the controversy surrounding the oval crowning the facade, citing several naysayers who believe that it wasn't even Borromini's design, but Huemer argues that it is quite characteristic of him. He often designed "top-heavy" facades, and the tilting of the oval panel down to better showcase its artwork is also done in Michelangelo's designs.

"Practical and Symbolic Geometry in Borromini's San Carlo alle Quattro Fontane" by Michael Hill: <https://goo.gl/7MrV97>

"Borromini and Michelangelo: Some Preliminary Observations on the Facade of San Carlino" by Frances Huemer: <https://goo.gl/N2yeHn>