

# Designing the Roman Corinthian order

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## Introduction

One of the most debated issues in the study of ancient architecture concerns the question of how the columnar orders were designed. Opinions on the subject have tended to polarize into two contrasting schools of thought. From one perspective, the design of columns must have depended upon rules of proportion, while, from the other, it must have been largely free from such rules if architects were to exercise productively their individual talents.

The first position is formulated, with certain qualifications, in the only thorough treatise on architecture to survive from antiquity, that of Vitruvius. His account in books 3 and 4 of the four main orders of his day (Doric, Ionic, Corinthian and Tuscan) revolved around recommendations for their ideal proportions. For Vitruvius, the proportions given the most importance were those that regulated slenderness, by defining the height of columns and their component parts in terms of the lower diameter of the shaft. Given their dependence on Vitruvius, Renaissance commentators tended to follow similar patterns. Time and again they produced variations on the famous theme of the five orders (the Composite being added to the other four) displayed in sequence along with recommended ratios and/or modular dimensions (fig.1).

The seeds of dissent, however, were sown even quite early in the Renaissance. Upon the detailed examination of surviving ancient monuments it became apparent to many that the precepts of theory were often flouted in practice, and that comparable elements from different buildings often had different proportions. By the late 17th c., scholars such as Perrault were able to argue convincingly that the evidence was inconsistent with the general acceptance of mathematical rules, whether Vitruvian or otherwise.<sup>1</sup> Since then excavations have brought to light ever-increasing examples of the antique taste for variety and the exotic, so that essentially the same interpretation is a commonplace of modern archaeological studies, as recently summed up by MacDonald: "In fulfilled Roman classicism, so often at variance with Vitruvian principles, the orders were viewed undogmatically and were freely set about: the results resemble neither Vitruvius' putative norms nor the work of his Renaissance interpreters. .... Throughout imperial architecture, one searches for norms largely in vain."<sup>2</sup>

The subject of mathematics and the classical orders is split, then, into two seemingly irreconcilable positions: rule versus variety. It is the chief aim of this paper to demonstrate by means of a comparative study that these aspects of design are not in fact incompatible. The arguments that will be put forward hinge upon the paradox that the Corinthian order, while yet manifesting greater diversity than any of the other orders, was, after all, designed according to a set of mathematical principles that was widely respected.

The Corinthian order developed later than the Doric, Ionic and Tuscan forms, reaching maturity only in the Roman period. A comparative study can best begin with the temples of Rome itself, in which design practices may be expected to have operated in an orthodox manner.<sup>3</sup> The evidence presented in the first part of this paper is based upon the measurements of ten Corinthian orders from the best preserved

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1 J. Guillaume éd., *Les traités d'architecture de la Renaissance. Actes* (Centre d'études supérieures de la Renaissance, Université de Tours, 1981 (Paris 1988); W. Hermann, *The Theory of Claude Perrault* (London 1973) passim.

2 W. L. MacDonald, *The architecture of the Roman empire II* (New Haven 1986) 188ff.

3 Vitr. 3.1.4 states that in transmitting knowledge about good design, ancient architects were "particularly careful to do so in the case of the temples of the gods"; for a similarly hierarchical view of building types, see 5.9.3.