Preface

I have written this book to establish the hitherto neglected fact that Italian Renaissance domestic architecture was largely ruled by Pythagorean principles. In recent generations of scholars, from Stegmann and Geymüller in 1885 to Heydenreich and Lotz in 1974, the historiography of Renaissance architecture has been in the hands of positivists—those who believe that knowledge is based only on physical objects empirically studied, and that meanings must be sought within the objects themselves. Their approach goes back to the nineteenth-century work of Auguste Choisy, who treated the history of architecture as an analogue to comparative zoology. From such a viewpoint there is little room for magic; rather, the achievement of this positivist school has been to classify styles of, and to reveal processes of, revival and influence.

However, another movement among contemporary scholars really is more relevant to my topic. This movement is almost solely the creation of one man—Rudolf Wittkower. In his epochal book, *Architectural Principles in the Age of Humanism* (1949), Wittkower established the importance of numerical proportion in the design of buildings, both real and ideal, from Alberti to Palladio. With Wittkower the importance of number in Italian Renaissance architecture began to be perceived.

But number, for Wittkower, was a question of proportion and of proportion only. He ignored dimensions and distributions. He ignored the five orders. And numbers, for Wittkower, were modern numbers; they were abstract quantities and nothing more, as in modern mathematics. Wittkower will say, for example, that an 8:6 proportion is really 4:3, or that a room with dimensions of 7.4, 10, and 15 represents a harmonic ratio. When he has established such facts, perhaps also investigating their analogies with music, Wittkower moves on to his next analysis. And so on to the end of the book.

What he does not at all emphasize, however, is the basic assumption of Pythagorean mathematics—that numbers are *not* mere quantities, and that they are not abstract. To the Pythagoreans, who were essentially number magicians, numbers were not only quantities, they were qualities as well. They had fixed or predictable

geometric, psychological, moral, and even personal natures. The relation of one number to others was perceived according to cultural and social models. There were, as we shall see, temples, cities, worlds, heavens of numbers. In such constructs lay their magic. The proportion 8:6 is therefore *reducible,* in Wittkower's sense, to 4:3. But it is not the same as 4:3, because 8 and 6 have all sorts of characteristics, together and independently, that 4 and 3 do not have. The Pythagorean would say that the expression 8:6::4:3 makes 4 and 3 the "children" of the "marriage" between 8 and 6. The reductive process is conceived as a genealogy, a procreation of social entities.

Not only does this view affect proportion in architecture—the subject that Wittkower and his followers almost exclusively treat—it also affects the dimensions and distributions of a building as well. It affects, that is, the size of a volume in braccia or feet, the number of doors, windows, and columns it possesses, and the decoration of those doors, windows, and columns.

I will show in the following pages that Renaissance architectural "philosophers" from Alberti to Vincenzo Scamozzi understood number, and therefore proportion, dimension, and distribution, in this sense. In other words, the mathematical tradition that was imparted to these writers, whether in shop, *scuola d'abacco,* or university, was Pythagorean. My book therefore applies, to architectural history, material that has been used for the writing of intellectual history by such authors as Eugenio Garin, Frances Yates, and D. P. Walker. More precisely, the book belongs with the work of such art historians as Manfredo Tafuri, Robert Klein, Marco Rosci, Günter Bandmann, and Georg Weise. I have chosen to concentrate on palaces rather than, say, churches, because a palace, much more than a church, constitutes the sort of omnidirectional cubic grid that Pythagorean mathematics implies. But one could— and I hope this will happen—go on to apply the ensuing ideas to other types of buildings besides palaces.