Five hundred years ago, on 22 May 1511, the architect, engineer, scholar, and Franciscan friar Fra Giovanni Giocondo of Verona published his edition of the Ten Books on Architecture of Vitruvius. Printed in Venice (by Giovanni Tacuino da Tridino), Giocondo’s was the fourth edition of Vitruvius to emerge in this new medium; the first, edited by Giovanni Sulpizio da Veroli, had been published in Rome, probably between 1486 and 1487, followed by a Florentine edition in 1496 and a Venetian edition in 1497; evidently Vitruvius was beginning to command a growing interest, at least in Italy, by the end of the fifteenth century.1 Giocondo, however, took special pains to make his version of Vitruvius more useful to readers than any of its predecessors: he provided woodcut illustrations—136 of them, a glossary of architectural terms, and a key to the curious symbols that Vitruvius uses for units of measure in his tenth book. Furthermore, Giocondo took a much more aggressive approach to what an editor can or should do with an ancient text. Both for the merits of its ancient author and for those of its early modern editor, the Fra Giocondo Vitruvius would turn out to be one of the most influential books of the sixteenth century.1

The book may also have been influential for more subtle reasons. Vitruvius wrote his Ten Books for the emperor Augustus as a demonstration that architecture should be included among the liberal arts. Made broadly accessible by printing, illustration, study, and a more intelligible Latin text in 1511, the ancient architect’s philosophical statements about liberal education, aesthetics, and the status of his profession served early modern artists and architects in their own similar, and ultimately successful, bid to raise their status in contemporary society. If artists like Raphael and Michelangelo enjoyed reputations as “divine” in their own lifetimes, the road to that good fortune was paved to a significant extent by Vitruvius.1

To gauge the importance of Fra Giocondo’s achievement in early modern architectural and cultural history, we might remember what Leon Battista Alberti said about Vitruvius in 1450, when he was writing his own architectural treatise, De Re Aedificatoria, in the heart of papal Rome. An excellent Latin scholar and an experienced designer, Alberti was better equipped than most of his contemporaries to immerse himself in the ancient architect’s world, but he found the task almost impossible: “What [Vitruvius] had passed on was not refined: for he spoke so that to Latins he would have seemed a Greek, and the Greeks would have guessed him to be a Latin. The book itself will attest that it was neither Latin nor Greek; so he might as well never have written it at all, since he wrote in a way that we don’t understand.”3
One look at any of the surviving manuscripts of Vitruvius (about eighty of them) will prove that Alberti's complaints suffer only slightly from rhetorical exaggeration. Any work that has survived fifteen centuries of copying and recopying inevitably accumulates mistakes, and the Ten Books, like the rest of classical literature, had also faced two successive changes of medium: from papyrus scroll to parchment codex in the fourth or fifth century C.E., and then, in the fifteenth, from handwritten codex to book printed on paper. Because of their significance to living religious traditions, manuscripts of the Bible and the Torah printed on paper. Because of their significance to living religious traditions, manuscripts of the Bible and the Torah have remained surprisingly uniform throughout their history, but classical authors did not enjoy the same degree of attention. Hence, as the ancients’ experience grew more and more distant from the experience of their later readers (and the scribes who served those readers), their texts became more and more riddled with errors.

Copying errors are a universal feature of manuscript production; indeed, most mistakes can be classified systematically, and anyone taking down a text by hand will make them all as invariably as any medieval scribe. (We also know by now that electronic scanners have their own imperfections.) In addition to suffering from this normal fallibility, however, the transcription of the text of Vitruvius presented its own peculiar challenges to scribes and readers. In the first place, as Alberti complained, his Latin treatise included a number of Greek words, written in Greek, as well as three complete Greek poems about springs with unusual waters; Vitruvius assumed that his ancient Roman readers would be, as he was, proficient in both languages. Later scribes were not always so knowledgeable, especially once the fall of Rome had broken up the empire's excellent universal system of education. Copyists continued to reproduce Greek lettering as best they could, but in many surviving manuscripts of Vitruvius, the result is almost hopelessly confused: the script often looks more like Cyrillic than Greek, and the words no longer make sense in any language. Rather than confront the challenge posed by several lines of verse, many scribes simply chose to omit the Greek poems in Book 8 altogether.

Secondly, Vitruvius included eleven illustrations in his treatise, all of which had disappeared by the ninth century, the date of the earliest extant manuscript, which was probably written for the court of Charlemagne. (That codex, British Library Harleianus 5727, does have a picture of Jesus, who may be there to encourage the scribe at roughly the halfway point through his job.) Confident that readers would have ready access to his images, Vitruvius refers to them without describing them in detail (and uses them, in fact, to convey what he has trouble communicating in words), with the result that only one of them, a wind rose drawn with compass and straightedge, can be easily reconstructed.

Furthermore, Roman writers, Vitruvius included, used Roman numerals, and Roman numerals turn out to be treacherous when copied; if a final “i” falls out in “viii” it changes the proportion of a column, but unless a scribe is attentive, or mathematically inclined, the omission may not register with him. (Working with these skewed numbers obviously infuriated Alberti; he insists that the people who copied or printed De Re Aedificatoria should use Arabic rather than Roman numerals.)

On a literary level, as an innovative technical writer, Vitruvius introduced subjects that had barely been treated before in Roman literature, and did so successfully enough that no other Roman, to our present knowledge, ever superseded him in those fields. These technical aspects of the Ten Books, however, were only a secondary priority for their author; the work's primary aim was to treat architecture as a liberal art, showing readers how to define and evaluate aesthetic quality as well as good construction. Generations of early modern architects would discover, to their frustration, that Vitruvius did not write a complete builder's manual, and never intended to. Still, his is the only preserved Latin text that discusses pounding down pavement, pouring concrete, pressure valves in water pipes, and masonry construction. When a word in Vitruvius seems strange or confusing, there is often no other ancient text for comparison.

As a result, no manuscript of Vitruvius survives as a perfectly intelligible document; every single one of them answers perfectly to Alberti's frustrating description: they are all “unrefined.” The only way to make Vitruvius more readable, then, is to change what the manuscripts have handed down, which means assuming that we, rather than scribes who lived much nearer to Vitruvius in time and were possibly far closer to him in culture, are better able to grasp what this ancient Roman architect meant to say. Almost by definition, emending a classical text is an act of breathtaking arrogance. For the fifteenth- and sixteenth-century humanists who treasured their manuscripts of classical authors, emendation meant assuming an expert's degree of familiarity with ancient languages and culture at a time when most scholars saw themselves as humble beginners.

It is not surprising, therefore, that the first editor of a printed Vitruvius, Giovanni Sulpizio da Veroli, a professor of grammar and rhetoric at the University of Rome, preferred to interfere as little as possible with the text when he committed it to print ca. 1486. He and his colleagues were only starting to amass enough manuscripts of ancient authors to compare various versions of the Ten Books, and the dissemination of Vitruvius in print was one way to expedite
that process of comparison. (For good measure he included another, related work: the treatise On Aqueducts of Sextus Frontinus, which observes that Vitruvius—or at least someone named Vitruvius—took charge of the water supply for Rome in the early Imperial period.) For Sulzio, as for his contemporaries, classical study, like contemporary art, architecture, and urban planning, was an intensely collaborative activity. Thus a note at the end of Sulzio's Vitruvius specifically asks readers to write him with suggestions for emending subsequent editions. Here, at the beginning of the age of print, Sulzio was already living in a social network connected by a web of ink and paper, a powerful medium that was only beginning to demonstrate its might. His edition was a community effort and a public service as much as an individual enterprise. In his prefatory letter he explained his method:

I look on the task [of editing Vitruvius] so that . . . I could supply a printed text that was correct enough to leave only a small amount of additional work to an interested reader . . . Where the Greek is obscure or clearly corrupt I will do the best I can in the meantime to discover better readings by collating [other texts]; I will not pass them over in silence . . . In the meantime, all the readers into whose hands these volumes come are implored to lend us their help, so that we may have this author in a correct version, perfect in every part.5

In the same spirit, Sulzio decided against printing illustrations; instead, he left wide margins so that readers could supply their own drawings. This was precisely what the Florence-born architect Giovanni Battista da Sangallo did to his copy, now a treasure of Rome's Biblioteca Corsiniana (and a librarian's nightmare: is it a manuscript or a printed book?); the fact that Sangallo added these illustrations (and a bit of translation into Italian) between 1520 and 1548 shows what excellent paper Sulzio's anonymous printer had used for this fifty-year-old volume, and how long both printer and editor must have expected their work to last.5 Parchment codices, after all, were known by then to endure for millennia.

Twenty-five years later, Fra Giocondo, who may have been about the same age as Giovanni Sulzio, addressed a radically different world, one in which printed books were swiftly becoming the norm rather than a novelty. A quarter century of systematic study enabled him to draw on a rapidly expanding body of expertise in Greek, Latin, archaeology, and the study of classical culture. In those years, architects, especially the charismatic Donato Bramante, active in Urbino, Milan, and Rome, had begun to transform both the understanding of ancient architecture and its modern practice; the two activities were seen as intimately related.

Fra Giocondo brought another, unique advantage to his study of Vitruvius; his first-hand knowledge of ancient monuments may well have been unequaled in his time. By 1511, his recorded career—and we know about his activities only from the year 1489, when he may have been over fifty—had already taken him from his native Verona to Venice, Ravenna, Naples, Rome, Paris, and the Venetian forts in Greece: Cephalonia, Corfu, Zante, Nauplia, Monemvasia.6 During his travels, his rare combination of scholarly and technical expertise enabled him both to read and analyze inscriptions and assess the structural qualities of forts and waterworks. Because of his excellent education and his intensive study of manuscripts in Greek, Latin, and the vernacular, he could compare the text of Vitruvius to illustrated Byzantine texts on siegecraft and hydraulics, or to the Corpus Agrimensorum, a collection of short studies by Roman surveyors of the second and third centuries C.E. This eclectic reading would help Giocondo immensely when it came to correcting ward numbers and devising his own illustrations for his edition of Vitruvius. Most impressive of all, perhaps, was the depth of his reading. His scholarly connections enabled him to restore the missing Greek epigrams to Book 8; the Florentine humanist Angelo Poliziano had spotted them in an anthology of Greek poetry in the Laurentian Library. Proudly, Giocondo restored them to his published text.

In the end, any profound study of Vitruvius required almost the same broad program of liberal education that the ancient architect famously sets forth in the first of his Ten Books. Fra Giovanni Giocondo was one of the few people in his time who came close to attaining that level of erudition. Despite the decades that separate them, in a real sense, both the Sulzio editio princeps of Vitruvius and Giocondo's illustrated edition emerged from the same Roman milieu, and served the same purpose: helping to shape Rome's development as a modern Christian capital by making Vitruvius, the authority about the ancient city, available to the widest possible group of readers. Both editions begin with letters of dedication addressed to the powerful men who must have underwritten the sizeable expenses of publication, and it is no coincidence that these sponsors, Cardinal Raffaele Riario (Sulzio), and Pope Julius II (Giocondo), were cousins, privileged nephews of a prominent pope, Sixtus IV.

In his thirteen-year reign (1471–84), Sixtus had devoted unprecedented amounts of money, energy, and intelligence to the project of transforming Rome from a struggling backwater into an impressive capital city. Like most early modern pontiffs, Sixtus had no qualms about enlisting his whole family in the enterprise. He appointed thirty-four-year-old
Giuliano della Rovere (the future Pope Julius) as cardinal immediately after his own election and elevated Raffaele Riario to a cardinal’s position as soon as the younger man reached the legal age of twenty-one. A self-made man from an obscure family, and a first-rate theologian, Sixtus expected his nephews to work as hard as he had in their high positions, participating directly in their uncle’s projects, many of which involved improving the city’s physical infrastructure. The practical world of Vitruvius, then, was a world that both Raffaele Riario and Giuliano Della Rovere had known intimately as patrons. But they also understood the literary side of Rome and Roman literature; from the outset, Cardinal Giuliano seems to have been the chief liaison to one of his uncle’s most cherished projects, the reorganization and expansion of the Vatican Library, and Raffaele Riario underwrote the theatrical productions of ancient drama that Sulpio mounted with his students at the University of Rome. Sulpio da Veroli was certainly present for all this activity; Lucia Ciapponi presents strong evidence that Fra Giocondo was in Rome as well, and in the same company.

Sulpio’s letter of dedication, like his editorial interventions in the text of Vitruvius, was relatively cautious (and rather long-winded): he only pressed Riario, shortly after the death of Pope Sixtus, for a permanent theater in Rome. (Instead Riario built a palazzo, the Cancelleria, that could be used for theatrical productions.) Giocondo, however, had no such inhibitions; he ended his dedication to the reigning pope by soliciting Julius for a pension that would allow him to continue his studies: “only you, most Holy Father, can give me the leisure that scholars most need to keep up their activity.” From a man well into his seventies and clearly in need of money, the pope could have hoped for, including an eventual appointment, if not a pension, in Rome. In the Eternal City, he would strike up close friendships with two younger men: the humanist Angelo Colocci, Rome’s resident expert on ancient measure (and the eventual inheritor of Giocondo’s books on mathematics), and Raphael, the pope’s favorite artist. He must already have known Bramante, another man of broad talents and systematic thinking, and it is tantalizing to imagine their conversations, which must have been overheard by the likes of Raphael and Colocci at the moment when papal Rome was beginning, through their combined efforts, to demonstrate its own grand style in urban planning, language, art, and architecture. Bramante had a sweep of vision that even Giocondo could not match; but Pope Julius, Michelangelo, and Raphael could and did match it—as, in his own way, did the banker Chigi. After 1511, the practice of the arts in sixteenth-century Rome would be based on the profound study of Vitruvius, and it was Fra Giocondo’s text, with its corrections, its illustrations, and its glossaries, that made such profound study possible.

Like any good courtier, moreover, Giocondo knew how to survive changes of regime. The death of Pope Julius brought a new pope to the throne of St. Peter, but Leo X, the former Giovanni de’ Medici, was the son of Lorenzo de’ Medici, one of Giocondo’s first known patrons, to whom the Franciscan had dedicated two collections of ancient inscriptions in the 1480’s. When Bramante died in 1514, his...
position as architect of St. Peter's Basilica fell to a team of two: Raphael and Fra Giocondo—by that time, if we are to believe Raphael's testimony, a man of eighty. In Giocondo's company, Raphael began his own deeper study of Vitruvius, commissioning a vernacular translation from the humanist Marco Fabio Calvo. The manuscripts of that translation, now preserved in Munich, show careful cross-references to both the text and illustrations of Fra Giocondo's printed edition, which Raphael and his associates worked mightily to improve.9

Like Giocondo, Raphael knew how to create an international reputation; his technical skill, his intelligence, and the beauty of his vision shaped taste throughout Europe. So did his intellectual rigor. From Bramante, Raphael, and Fra Giocondo, the next generation of architects associated with the St. Peter's project, like Antonio Sangallo the Younger and his brother Giovanni Battista, absorbed the conviction that understanding Vitruvius was essential to the practice of modern architecture, and that collaborating with scholars was often the best way to understand what continued to be a problematic text. Soon the “orders”—a term that came into use only with Raphael and his circle in the second decade of the sixteenth century—would become the most basic element in architectural education, and maintain that importance up to the beginning of the modern period in the twentieth century.10

Thanks again to Fra Giocondo's international experience, the importance of Vitruvius to the modern practice of architecture was never restricted to Rome. Already in the time of Giocondo, Leonardo, and Budé, François I of France was nurturing similarly imperial ambitions for Paris. It was there, in 1673, that the royal architect Claude Perrault produced his celebrated illustrated and annotated Vitruvius for the Sun King, Louis XIV, which was printed at the Typographie Royale rather than a private shop. For the modern Europe of the seventeenth century, Latin was no longer the language of supreme culture; Perrault's edition, a glorious monument in its own right, was translated into French.


9. The manuscript, Munich, Bayerische Staatsbibliothek Ms It. 37, has been published by Vincenzo Fontana and Paolo Morachiello, *Vitruvio e Raffaello, Il “De Architectura” di Vitruvio nella traduzione inedita di Fabio Calvo Rayonnante* (Rome: Officina Edizioni, 1975), without identifying the scribe and with many inaccuracies in the transcription; Francesco Paolo di Teodoro is the best way to understand what continued to be a problematic text. Soon the “orders”—a term that came into use only with Raphael and his circle in the second decade of the sixteenth century—would become the most basic element in architectural education, and maintain that importance up to the beginning of the modern period in the twentieth century.10

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Notes