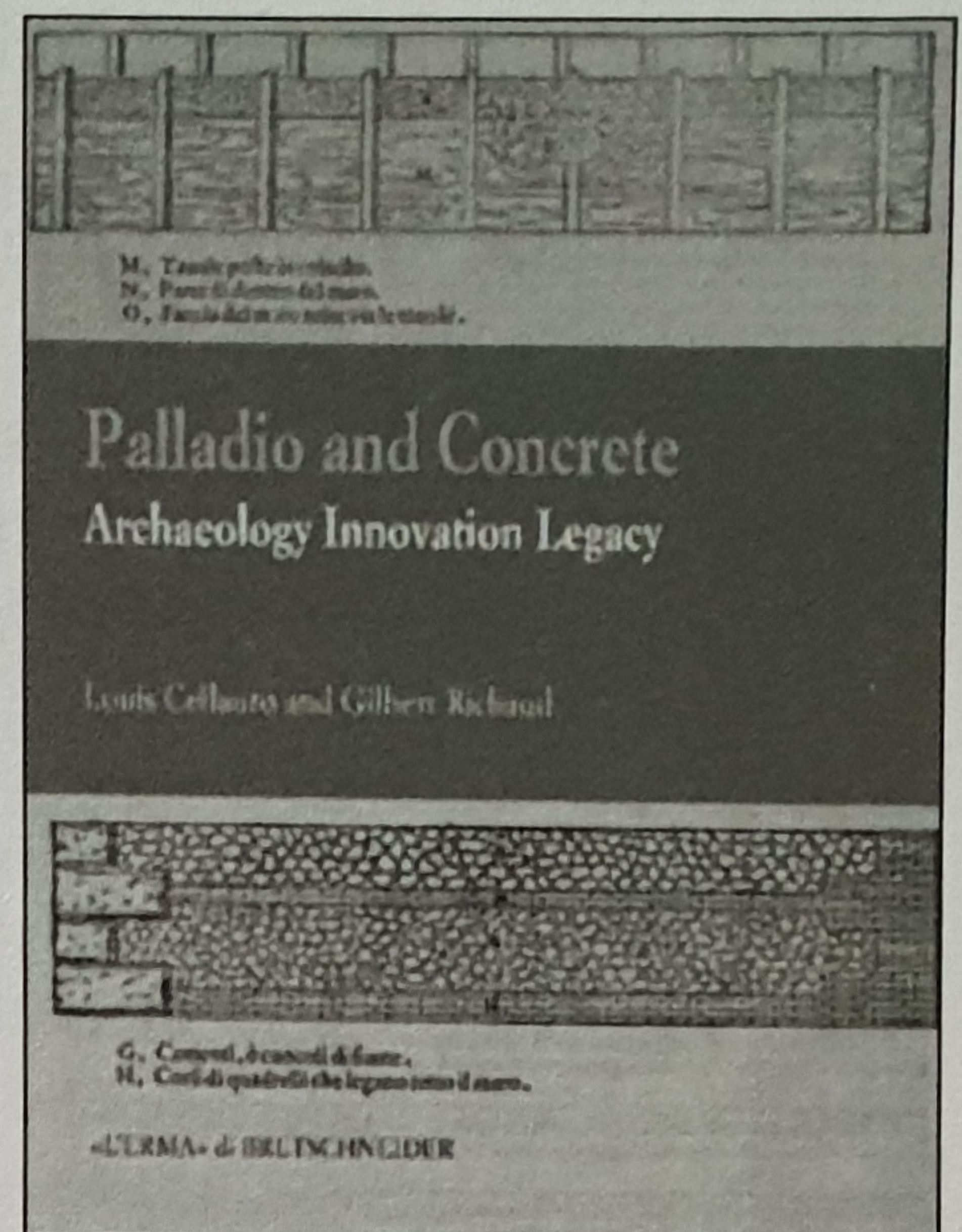


*Palladio and Concrete: Archaeology, Innovation, Legacy.*

Louis Cellauro and Gilbert Richaud (with a foreword by Howard Burns) Rome: L'Erma di Bretschneider, 2020; 116 pp. ISBN 978-88-913-2109-1. € 70,00

This slim but dense volume displays a scholarly robustness and attention to detail we have by now come to expect of the LermArte series, of which it is the twenty-sixth installment. Its subject, broadly defined, is the reception of ancient Roman concrete techniques from the time of their “rediscovery” in early fifteenth-century Italy, to the rise of modern concrete construction in nineteenth-century France.



However, it should be noted at the outset that, of the numerous applications of Roman *opus caementicium* attempted by Renaissance builders from Alberti onwards, only one is addressed in any detail – namely, the “infill walling technique”, variously identified as *emplekton*, *fabrica riempita* and the *maniera riempita* by early modern sources. Given the authors’ overriding preoccupation with *maniera riempita* walling, pursued with few references to concrete vaults and foundations, the book’s ambitious title could be said to be somewhat of a misnomer.

However, within its carefully circumscribed subject matter, the study provides a definitive survey of the reception of Vitruvian *emplekton* in early modern Europe, assessing the contributions of such key figures as Leon Battista Alberti, Fra Giocondo, Cesare Cesariano, Giovanni Battista Caporali, Daniele Barbaro, and finally, Palladio. The first section lays down the sources and definitions of the various terms employed to describe concrete construction from antiquity to the nineteenth century. It is in this area – of close textual and etymological analysis – that the study is at its finest. Section II continues in this vein by looking at the various fifteenth-century interpretations of Vitruvian *emplekton*, together with a brief but essential survey of contemporary archaeological scholarship on Roman concrete construction. After elucidating some key distinctions, such as that between *emplekton* proper and so-called “shortcut *emplekton*”, the authors resume their close textual analysis of Renaissance treatises in Section III.

It is here that the most substantial contributions to existing scholarship are made. Alberti’s writings on the subject are authoritatively related to Pliny the Elder’s description of rammed earth construction in *Naturalis Historia*, and a number of early attempts at illustrating Vitruvian *emplekton* are identified in unpublished fifteenth-century translations such as Francesco di Giorgio’s “Trattato di architettura civile e militare” and the so-called “Vitruvio Ferrarese”. Perhaps most significantly, the authors identified Cesariano’s 1521 translation of Vitruvius as the first to include both a clear illustration of a “concrete pebble wall” and a written description of “shortcut *emplekton*”, which in turn proved key to Caporali’s conflation of the two under the Italian term *fabrica de mura impiti* in his 1536 “Architettura”

Given the richness and scale of the first three sections, the comparatively slender Section IV, entitled “Daniele Barbaro and Palladio on concrete infill walling”, somewhat fails to justify its protagonist’s titular role. As it soon becomes apparent, Palladio’s contribution, as understood by the authors, consisted chiefly in the codification of a recognizably modern board-formed concrete walling method (*maniera riempita*), illustrated in a single woodcut in Book I of the “Quattro libri dell’ architettura”. However, the supposed originality of this method is overshadowed by the conclusions of the preceding two sections, which show how the *maniera riempita* emerged gradually in the treatises of Palladio’s forebears over nearly a century. The authors’ archaeological detours to Sirmione, Verona, and Turin in search of the ancient structures cited as models for the *maniera riempita* by Palladio himself, certainly



add documentary interest, but bring little that is new to the discussion.

However, it is in the study's failure to situate this method on the early modern construction site that its main weakness lies. Thus, while the authors set out to present Palladio as not only "the first to illustrate the process, which has subsequently been used to construct concrete walls in modern and contemporary architecture", but a figure who did more than anyone else "to foster its employment in his own time" (p.13), they quickly contradict the latter by stating that "in his own buildings, Palladio never used concrete, whether for foundations, walls or vaults" (p. 16). This startling claim is never seriously questioned in the book, whose otherwise impressive bibliography contains no references to such potentially revealing sources as conservation reports and building surveys. A good example of what a deeper engagement with the latter may have yielded is provided by a 2017 study of the Tempietto Barbaro at Maser, undertaken by a multidisciplinary team from the Istituto Universitario di Architettura di Venezia (IUAV). Combining a wealth of historical data with information gathered during a recent restoration campaign, the study exposed the mixed brick-and-concrete construction of the dome, including stretches of masonry closely resembling the *maniera riempita* described in the Quattro Libri.

The fifth and final section of the book deals with the legacy of Palladio's *maniera riempita* in late eighteenth-century France. While the question of board-formed infill walling remains central, and some effort is made to chart the reception of Palladio's Quattro Libri in eighteenth-century France (and, to a lesser extent, Germany), the geographical and historical disjuncture between this section and the rest of the book is nonetheless startling. Its inclusion in the present volume seems to have been motivated by a desire to revise the standard twentieth-century account of the origins of modern concrete, first formulated in Peter Collins' "Concrete: A Vision of a New Architecture" (1959). Despite this, the section provides a deeply engaging survey of key eighteenth-century French authors on construction, such as Jacques Raymond Lucotte, Pierre Patte, Francois Cointeraux, and Claude Fleuret, and will no doubt prove especially useful to non-Francophone students of the subject.

In summary, this stimulating study is bound to attract a keen specialist readership, both among students of concrete technology and of Renaissance architectural writing. The authors' meticulous attention to the terminology employed by early modern interpreters of Vitruvius, accompanied by a wealth of illustrations drawn from the treatises they produced, makes it especially useful to the latter. The fact that the book reads more like a compilation of loosely related papers than the ambitious revisionist account of the rise of modern concrete with Palladio at its centre, does in no way diminish its usefulness or importance as a work of scholarship. However, the need to present it as such – that is, a thematically unified monograph of a certain length – might account for some of its more superficial flaws, such as its occasional verbosity, and the inclusion (sometimes across several pages) of figures only tangentially related to the text.

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