

Paper Abstracts

Practices of Copying & Imitation in Early Modern Architecture (1400-1700)

List of participants	2
Author's abstracts	3
Alina Aggujaro – <i>Architecture's Code. Construction Techniques, Architectural Details and Imitation in the Palace of Adriano Castellesi</i>	3
Gregorio Astengo – <i>Composing a Model for Real Estate Development: Building Guides in Early Modern London</i>	5
Anna Bortolozzi – <i>Transparent Paper as Medium of Copying in the Early Modern Architectural Workshop</i>	7
Costantino Ceccanti – <i>Sur les cinq manieres d'edifices: Serlian Architecture in Sixteenth Century Tuscany</i>	9
Alexis Culotta – <i>The Many Faces of Architecture: The Circle of Raphael and the Roman Frescoed Façade</i>	10
Nele De Raedt – <i>Designing a Residence for the Ideal Prince and Citizen: Practices of Copying and Imitation in Platina's De Optimo Principe and De Optimo Cive</i>	11
Dario Donetti – <i>Critical Copies: The Codex Mellon and Collective Design in Raphael's Rome</i>	12
Jessica Gritti – <i>Terracotta Architectures. Serial Production and the Diffusion of all'antica Models in Fifteenth Century Lombard Architecture</i>	13
David Hemsoll – <i>Imitation and its Changing Means and Ends in the Architecture of Andrea Palladio</i>	14
Peter Heinrich Jahn – <i>ars combinatoria. Practices of the Early Modern Pattern-based Architectural Draft</i>	16
Merlijn Hurx – <i>"Ikea-architecture" in the Middle Ages: the Emergence of a Commodity Market for Building Components in the Low Countries</i>	17
Elizabeth Merrill – <i>Architectural Tracings and the Fragility of Design Authorship</i>	18
Maria Teresa Sambin de Norcen – <i>Donatello and Ancient Models, Donatello as a Model. His work in the Basilica of Saint Anthony, Padua (1443-1454)</i>	19
Carolyn Yerkes – <i>Monument as Matrix: Architectural Inscriptions, Squeezes, and the History of Printed Words</i>	21

List of participants

Alina Aggujaro

Lecturer in History of Architecture, IED Istituto Europeo di Design, Rome

Gregorio Astengo

Assistant, ETH Zurich

Anna Bortolozzi

Associate Professor in Art History, Department of Culture and Aesthetics, Stockholm University

Costantino Ceccanti

Official Architect at the Bargello Museum, Florence

Alexis Culotta

Professor of Practice, Tulane University

Nele De Raedt

Assistant Professor, Faculty of Architecture, Architectural Engineering and Urbanism (LOCI), Université Catholique de Louvain

Dario Donetti

Assistant Professor, Department of Humanities, University of Verona

Jessica Gritti

Assistant Professor in the History of Architecture, Department of Architecture and Urban Studies, Politecnico di Milano

David Hemsoll

Reader in Architectural History and Theory, University of Birmingham

Peter Heinrich Jahn

Researcher, Institute for Art and Music Studies, Technical University of Dresden

Merlijn Hurx

Professor of Architectural History, Department of Architecture, KU Leuven

Elizabeth Merrill

Assistant Professor, Faculty of Architecture and Engineering, Ghent University

Maria Teresa Sambin De Norcen

Associate Professor in History of Architecture, Università IUAV di Venezia

Carolyn Yerkes

Associate Professor of Art and Archaeology, Princeton University

Author's abstracts

Alina Aggujaro – *Architecture's Code. Construction Techniques, Architectural Details and Imitation in the Palace of Adriano Castellesi*

This contribution offers an analysis of the construction techniques of architectural details in the Palazzo of Adriano Castellesi in Rome, which repeatedly appear in coeval or older buildings. New photogrammetric surveys and reconstruction drawings of the palace's façade and its details are compared with earlier surveys (nineteenth-twentieth century), offering new insights on parts of the structure that are not directly measurable. These digital reconstructions are systematically compared with the structure of the Palazzo della Cancelleria, which is widely considered the prototypically *all'antica* palace of sixteenth-century Rome, revealing the two structures' reliance on a common architectural 'code.'

From Leon Battista Alberti onwards, imitation has been linked to literary comparison. According to Massimo Bulgarelli's interpretation of a passage from *Profugiorum ab aerumna libri*, Alberti considered the practice of imitation not only useful but even recommended. But imitation was not interpreted as slavish copying. According to Alberti, once a model was identified, its parts should be selectively imitated through careful reassembly, as if creating a mosaic. Referring to this humanistic framework of imitation, architectural historians have examined the Palazzo della Cancelleria (begun 1484-1489) as the prototype of Roman palaces adorned with ashlar and architectural orders, the stone surface of which is said to emulate the antique *opus isodomum* or *quadratum*. A few drawings from the Codex Coner (fol. 51) and Codex Barberini (fols. 35r-37v) testify the importance given to the imitation of literary and antique models. The most blatant imitation, however, is the façade of Palazzo Castellesi (begun 1500-1503). If both the Palazzo Castellesi and Palazzo della Cancelleria have been linked to Bramante, the architect's contribution in Palazzo Castellesi is most evident in the structure's overall design and internal court; by contrast, the façade was probably completed after 1513, following Castellesi's purchase of 300 'chariots of stone' (Bruschi 1989).

The Palazzo Castellesi was already considered an exemplum among contemporaries. It is cited in Francesco Albertini's *Opusculum* and Paolo Cortesi's *De Cardinalatu* (c. 1510) and the plan drawing in the Codex Coner (fol. 8r), dated around 1512-15 (Pagliara 1989), is the building's oldest known representation. The stone employed in a number of elements of the palace, including the atrium and the courtyard's arcades and *columnae quadrangulae*, is of uncertain date and origin. The stone blocks used in the façade are different in size from those of the ashlar, which were later engraved, as in the Palazzo della Cancelleria. This solution was employed in the ancient Mausoleum of Cecilia Metella and the Palazzo Rucellai, and speaks to the palace's imitation of both ancient and contemporary models. The 'Tuscan' pillars of the court are similar to the substructures of the Agonal Circus, of the Theater of Marcellus, and of the Colosseum. The court's angular solutions and the cornice of the façade recall the Cancelleria and the Cloister of Santa Maria della Pace, as well as elements of the Palazzo Doria Pamphilj. But how and why were these particular forms transferred from one building to another? How were they practically adapted to different proportions and translated into stone? And what does this tell us about their common source?

As Christof Thoenes and others have noted, within the circle of Bramante the development of distinct architectural details was likely part of a larger design process for the entirety of a

specific building (Thoenes 2016; see also d'Ossat 1966, Brothers 2000). At the same time, specific architectural components, employed at differing proportions and adapted to the conditions of given building sites, appear to have been implemented in executed constructions such as in Palazzo Castellesi and other coeval Roman buildings. This finding evidences how the use of a common canon of architectural elements may be linked to the transmission of practical knowledge within the network of artisans employed in coeval building sites. Specific choices may be explained by the availability of finding certain materials and craftsmen, and possibly reflect the methods of copy-assemblage suggested by Alberti. 'Model' therefore indicates the sources from which the architectural elements were derived, as well as their combination, which later became an archetype in itself.

Gregorio Astengo – *Composing a Model for Real Estate Development: Building Guides in Early Modern London*

As demonstrated by Elisabeth McKellar, William Baer and Patrice Derrington among others, seventeenth-century London saw the formation of the real estate development as a formalised paradigm in the building world (McKellar 1999; Baer 2002; Derrington 2021). Through a complex convergence of cultural, social, political and economic transitions—some of which traceable to the previous centuries—the city’s intense growth was negotiated by a novel group of actors, known today as building developers, and a specific set of practices, such as land survey, valuation, contracting, and building management. These procedures were collected and disseminated by an intense production of pattern books, compendiums and manuals which, already from the early seventeenth century onwards, synthesised and codified operative tools for the control and marketisation of housing construction.

With a prospective audience of landowners and speculators, these publications were meant to facilitate the complex system of economic and professional relationships between landowners, developers, contractors and tenants, by normalising the instruments necessary to successfully carry out housing development projects. For example, Thomas Clay’s *Tables on Leases and Annuities* (1622) introduced arithmetical instruments useful to calculate the present value of leases at different interest rates; Henry Phillips’ *Purchaser’s Pattern* (1654) attempted at synthesising statutory, economic and geometric principles for building management; George Meriton’s *Land-Lord’s Law* (1665) was a portable legal compendium for the rentier; Stephen Primatt’s *City and Country Purchaser and Builder* (1667) collected financial and construction knowledge specific to housing; Nicholas Barbon’s *Apology to the Builder* (1689) discursively painted the building developer as the protagonist of urban modernisation. In formalising these and other aspects of speculative building, these books mobilised the paradigms of real estate development through the public dissemination of its economic and cultural ideals.

With several re-editions, reprintings and abridgments throughout the seventeenth and early eighteenth centuries, these building guides constitute a significant yet overlooked genealogy of printed knowledge, synthetising early instruments for housing speculation. Indeed, these publications rarely presented entirely original content. Instead, they were almost always the result of compilative practices of copying and collecting of established and available publications on arithmetic, geometry, economics, surveying and construction, some of which had been circulating since the previous century (McRae 1993). Despite the rapid reconfiguration of the construction sector in seventeenth-century London, successive editions of these books consistently kept and expanded the same subject matter. At the same time, different titles often featured the same content, for examples by copying models of housing plans or unitary costs of building materials. For instance the schematic housing plan published by Venterus Mandey in *Mellificium Mensionis* (1682) were copied 20 years later by Joseph Moxon in his *Mechanick Exercises* (1703), while François Le Muet’s housing schemes (Paris, 1623) were translated by Robert Pricke in *The Art of Fair Building* (1670).

As a result, building guides provided a vision of London as a controlled construction world, made of consistent building forms and straightforward economic transactions between clearly identifiable actors. Stable rates, wages and prices projected the image of a steady market, despite a highly fluctuating purchasing power during the century (Wennerlind 2011). Similarly, recurring models of the same building plans disseminated the image of a regulated urban landscape of persistent housing typologies, against a much more varied and uncodified

reality (Guillery 2004). The significance of the building guide therefore lays in the synthetic nature in which such knowledge was presented, with the novel purpose of configuring real estate development as an identifiable domain of city-making. Importantly, these books remained references in later, more well-known building manuals of the eighteenth century, like those of William Salmon, Batty Langley and William Halfpenny, perpetuating the same model of a coherent building market (Yeomans 1986; Campbell and Saint 2001).

By examining the contextual origins, content and authorship of these and other English seventeenth-century publications of this kind, this paper discusses the practice of copying as an instrument to codify the monetisation of private property and the opportunities around its success. The production of these publications was entangled with a complex system of public expectations on what London could look like and how it should be made. Through the repetition and repurposing of their content, these books project a foundational image of London, made of a normalised landscape of houses built through variations on consistent and well-defined design themes and construction methods, but also through clear-cut relationships between the actors involved.

Anna Bortolozzi – *Transparent Paper as Medium of Copying in the Early Modern Architectural Workshop*

In the early modern period, the common method to copy architectural drawings was the technique of pricking holes. This process, used by architects to copy their own drawings and to make copies of the drawings of other architects, was highly labour-intensive and inconveniently resulted in the damaging of the original. Another method of transferring drawings, possibly even more destructive, consisted in the incision of the original with a stylus (in the Italian tradition called '*calco*'), having previously rubbed the back of the sheet (or an intermediate one) with chalk. The *calco* technique seems to have been practised widely by renaissance artists and engravers, but there is little evidence of its use in the architectural workshop. At the end of the seventeenth century, French architectural theory (D'Aviler 1691) advises the draughtsman to trace a drawing that is to be copied with the aid of a pane of glass (drawing '*à la vitre*'). Yet, this technique was suitable for drawings of small to medium size only, given the limited dimensions of the glass pane. An alternative method for copying drawings known since the Renaissance was to use a paper made transparent by means of vegetable oils (in Italian '*lucido*'). The original was laid under the transparent paper, and a tracing could be made with great precision and ease, with no loss of the original. After having traced the desired image onto the transparent sheet, the copyist could either prick and pounce, or trace it with a stylus onto a new working surface.

Albeit a number of sources describe the *lucido* practice (Cennini, c. 1400; Le Begue, c. 1432; Borghini, 1584; Bouchotte 1722; *Encyclopédie* 1765), it has proved difficult in international research (Baudez 2015 and 2020; Colonnese 2021) to identify architectural drawings that appear to exemplify it before the end of the eighteenth century. Drawings made on transparent paper are indeed very fragile, and it can be assumed that the overwhelming majority of once-existing drawings have been destroyed by time and lack of care. Another reason for the lack of tracings in drawing collections is possibly their chiefly functional character and the traditional conception about the value of copies. Quite an exception, the Nationalmuseum of Stockholm preserves around 190 tracings made in the workshop of the Royal architect and Superintendent of public works, Carl Hårleman (1700-1753), and around 400 tracings drawn by Hårleman's pupil and successor, Carl Johan Cronstedt (1709-1777). They represent a large variety of subjects such as plans, elevations and sections of residential and religious buildings, garden layouts, infrastructures, architectural elements, sculptural decorations, theatrical sceneries and costumes, furniture, interior decoration, coaches, and other categories. Hårleman and Cronstedt employed different media to draw their tracings: black and red chalk and graphite occur, but most frequently the medium is pen and ink, used with straightedge, free hand or both. It seems probable that Hårleman began to use transparent paper already during his first Parisian sojourn in the 1720s in order to copy drawings by some of the leading French masters of interior decoration, such as de Cotte, Vassé and Oppenord. Hårleman's tracings are all stamped with the architect's collection mark, suggesting that copies on transparent paper had a comparable status to other drawings in his collection. In the Cronstedt Collection, tracings are not only twice as numerous, but also mounted on larger sheets of paper to preserve them from tear.

The scope of the suggested research paper is to widen my on-going research on copies and tracings in the eighteenth-century architectural workshop to encompass the period between 1500 and 1700. The postulate is that—contrary to the general assumption—transparent paper was used by architects as copying medium since the Renaissance and particularly in association with copies after antiquity (see for example the Houfe Album). A survey of the

databases of major public collections of early modern drawings will hopefully help identify architectural drawings made on transparent paper not acknowledged before and consequently provide information on the spread of the *lucido* technique among architects. A major question the investigation aims to answer is whether the practice of copying by the means of transparent paper can be understood as a transfer of technique from the artist's to the architect's workshop. By comparing copies executed with the aid of transparent paper and copies executed with other methods, this contribution also aims at highlighting the specific advantages and disadvantages of the *lucido* technique in the architects' practice.

Costantino Ceccanti – Sur les cinq manieres d’edifices: *Serlian Architecture in Sixteenth Century Tuscany*

From an architectural point of view, Tuscany in the second half of the sixteenth century lived in a veritable cult of Michelangelo Buonarroti, and was especially enamoured with his Florentine works. Two entire generations of architects, beginning with Giorgio Vasari and ending with the Flemish-born Jean de Boulogne, known by his Italianized name of Giambologna, constructed numerous buildings based on the great master’s teachings. Compared to other parts of Italy, the influence of the great sixteenth-century treatise writers appears, at first glance, rather secondary in Tuscany in this period. Yet in fact, it is possible to discern in the work of several architects, including Giambologna himself, and the lesser-known Agostino Lupi from Lucca, a significant application of Sebastiano Serlio’s treatise. In Giambologna’s case, the Serlian influence is particularly marked in the first of his great works, the nymphaeum of the Villa Vecchietti near Grassano, built for Bernardo Vecchietti. The entrance portal to the building is a repurposing of assembled elements derived from the portals of Serlio’s *Libro Extraordinario*, published in Lyon and widespread in the southern Netherlands. The desire here to refer to a language that is certainly classical but, at the same time, certainly not Florentine, is not easily explained. It is conceivable that the choice was determined by Giambologna’s very first and limited architectural interventions in the 1540s, in the southern Netherlands, alongside his master, Jacques Dubroeuq. Giambologna had taken part in some of Dubroeuq’s construction sites, including the castle of Boussu for Jean de Hennin-Lietard and that of Mariemont, for Mary of Hungary, sister of Charles V. These works were carried out by Dubroeuq according to designs that adhered to a strict Serlian language, revised in a Nordic manner.

Indeed, for Dubroeuq, the Serlian reference had been almost obligatory. Flanders was an area in which the architectural language of the Renaissance had not yet appeared, and the treatise of the Bolognese architect, also published in Antwerp, constituted a valuable starting point for conceiving new architecture, much more so than the French Renaissance building sites, which were located in another, politically hostile state, hundreds of kilometres away. The diffusion of the Serlian language in Tuscany, carried out not only by Giambologna but by numerous of his pupils including Jacopo Piccardi and Jacopo Lafri, is one of the most significant yet least investigated aspects of the architecture of the Grand Duchy and the Republic of Lucca in the second half of the sixteenth century. As demonstrated in this paper, the prevalence of Serlian architecture in Tuscany was not the result of Italian cultural transfer, but can be traced to a chain of imitative design practices, which originated in northern Europe.

Alexis Culotta – *The Many Faces of Architecture: The Circle of Raphael and the Roman Frescoed Façade*

One of the more unique—yet understudied—traditions that rested at the intersections of art and architectural theory in Renaissance Rome was that of the frescoed façade. These painted faces extended the revival of *all'antica* architectural language through faux finishes and stucco embellishments that relayed a remarkable array of motifs often designed to root the structure, and its owner, in the rich fabric of Roman antiquity. Making these façades even more compelling for further study, however, is that the core network of practitioners of the tradition in the Eternal City emerged from the workshop of Raphael, a figure who straddled the realms of both art and architecture and who cultivated a web of associates united by a shared visual language of forms and motifs that served as springboards for invention. As a result, the sixteenth-century tradition of the Roman frescoed façade presents a fascinating nexus in which one can explore the actual practices of imitation as espoused within the workshop and as a vehicle for innovation in its extensions to the Renaissance façade.

Placing the quotidian practices of imitation and replication at its crux, this paper seeks to illuminate how this workshop thrived on a unique model of copying derived from this shared language of visual quotes or phrases. Building on past scholarship (including my own) that has explored this element from the perspective of Raphael's artistic oeuvre, this paper will extend this practice to the architectural projects associated with Raphael and his associates, such as Baldassare Peruzzi and Antonio da Sangallo the Younger, to assess how a similar language of architectural form became a point of conversation between envisioned and realized architectural projects.

At the same time, this paper will consider how this practical language of imitation evolved in the years after Raphael's death to form the foundations for this frescoed façade tradition. Building on the *all'antica* explorations woven throughout Raphael's Roman period, this paper will examine how this circle—including figures like Peruzzi, Polidoro da Caravaggio—employed a similar process post-Raphael of replicating and recycling motifs copied from or inspired by antiquity. Essential to this discussion will be the review of the documented frescoed facades executed by this circle in Rome via surviving fragments and drawings to establish a visual repertoire and to assess how replication and recombination of *all'antica* components revolutionized façade designs.

The frescoed façade was not isolated to Rome; rather, it was a tradition shared across the main centres of the Italian peninsula and European continent. Accordingly, investigating this facet of architectural adornment bears implications for the understanding of the larger field of European architectural practice as a whole. The case of the Roman frescoed façade, though, can shed new light on the architectural production of the era in that it was a practice driven by workshop imitation, both in its borrowing of the ideas of colleagues and in its revival of classical tropes. Thus, beyond highlighting a visual tradition now nearly vanished from the city, this paper aims to address the mechanics of the frescoed façade, from its shared motifs to its roots in workshop practice and identity, as a means to shape the face of sixteenth-century architecture in Rome.

Nele De Raedt – *Designing a Residence for the Ideal Prince and Citizen: Practices of Copying and Imitation in Platina’s De Optimo Principe and De Optimo Cive*

In 1474, Bartolomeo Sacchi (1421-1481), also better known as Platina, dedicated a manual on the qualities of the ideal citizen (*de optimo cive*) to Lorenzo de’Medici (1449-1492). The text takes the form of a fictional dialogue that took place between Platina, Lorenzo and the latter’s grandfather, Cosimo the Elder (1389-1464) at the family’s villa at Careggi. In the dialogue, the revered Cosimo instructs his grandson on what it means to be a good citizen. He addresses the origin of authority, how a citizen should behave towards others, and what virtues he should pursue, among other subjects. In one part of the dialogue, Cosimo also talks about architectural patronage. He explains his grandson how to build a residence for himself and his family.

Platina’s *De optimo cive* is strongly modelled on a work he previously wrote on the ideal prince. In 1471, Platina presented his *De optimo principe* to Federico Gonzaga, then the future marquis of Mantova. Written in prose rather than as a dialogue, the work consists of three books, discussing the prince as an individual, the practice of ruling, and the art of warfare. When composing *De optimo cive*, Platina strongly adapted the form and content of his mirror-for-princes to make the text suitable for Lorenzo and the citizens of Florence. This contribution discusses the design prescriptions for the residence of the ideal citizen and prince as they were written down in Platina’s two works. In the *De optimo cive*, the author changed and added sentences of *De optimo principe* to make the design prescriptions suitable for a citizen. However, these modifications remained rather limited. They often involved adjusting a few words as well as changing or adding one or two sentences. This practice of direct copying, in combination with modifications, creates difficulties in interpreting the text.

Ultimately, Platina’s prescriptions for the design of the ideal residence for a citizen seem to be contradictory. The research questions how these ambiguities should be understood. It also explores more largely how practices of direct copying and imitation of textual fragments, common in early modern humanistic (and also scholastic) writing, challenge our contemporary understanding of ‘theory’ as something that seeks to provide a conclusive and coherent body of prescriptions and knowledge. Among early modern audiences, hybridity in intellectual thought may have been readily accepted as in written texts, reflecting a respect of codified authorities while leaving room for interpretation by the reader.

Dario Donetti – *Critical Copies: The Codex Mellon and Collective Design in Raphael's Rome*

The Codex Mellon of New York's Morgan Library is a unique document from the construction site of New St. Peter's in Rome: an unaltered copybook produced by a keen observer of the work of Bramante, Raphael, and Peruzzi, it speaks to the importance of shared collective characters in early modern architecture, against the persistent myth of artistic individualities. This hybridity is the result of a practice of critical copying, which relied on drawing on paper as the primary technology for the recording of architectural exchanges. Close analysis of its making can thus contribute to expanding the very definition of architectural authorship through a re-examination of draftsmanship in Renaissance Italy.

Due to unaltered material conditions since it was first bound together, the Codex Mellon offers an exceptional record of the debate taking place at the time. Since its discovery in post-war New York (Nachod 1955), it has been largely recognized as a testament to the developments of architectural classicism that took place in High Renaissance Rome. Early historiography focused especially on the documentation of Bramante's work (Wittkower 1978), although the codex was undoubtedly compiled in the close circle of Raphael and Peruzzi, by a draftsman who had direct access to the graphic archive gathered at the Fabbrica di San Pietro. Recent research has given new strength to his identification with Domenico da Varignana (Frommel 1994; Calogero 2021): an ambitious sculptor, active between Bologna and Rome, and also an aspiring architect, who voraciously observed the work of his contemporaries. What he detected and illustrated in his drawings were shared characters and collaborative strategies of design, which contradict the narrative of oppositions and solitary authorship most often proposed by literature. Ultimately—and despite the identification of its author—the Codex Mellon shows distinct characters of anonymity and prosopography, which are crucial to understanding the productive mechanisms of imitation that shaped the architecture of early modern Italy, as highlighted by the scholarly discourse on copies and seriality developed in recent years (for instance: Yerkes 2016; Brothers 2017).

A transformative character was already detected within the strategies or representation adopted in the Codex Mellon (Rachele 2015). Indeed, this sketchbook shows some idiosyncratic replicas of widely copied prototypes, which reveal the historical gaze embedded in Varignana's practice of imitation: one that freely interpreted, implemented, and varied its sources. My paper, in particular, will anticipate a chapter devoted to the concept of 'critical copies' from a publication project devoted entirely to the Codex Mellon, currently under preparation. It will focus on a selection of copies of modern projects and drawings after the antique to unravel the visual tools employed by their author to appropriate and organize the contents of the codex: carefully planned sequences reconstructing the relationship between ancient models and their derivations; the graphic replication of first-hand experience, or the instrumental manipulation of representational conventions; hybridizations of prototypes, linguistic contaminations, and architectural pastiches.

My research will thus reveal an example of an extremely personal, although revelatory, approach to copying and imitation, nourished by formal associations between different stylistic options or different moments in the history of architecture. In so doing, it will provide further understanding of the productive mechanisms of emulation that were in place in Renaissance Rome and, overall, of the dynamics of architectural authorship in the early modern age.

Jessica Gritti – *Terracotta Architectures. Serial Production and the Diffusion of all’antica Models in Fifteenth Century Lombard Architecture*

The Lombard architectural culture of the fifteenth century is well known as an example of the creation of a peculiar *all’antica* local style based on the use of antiquarian models derived from small-scale objects like medals, coins and jewels. This practice—referred by scholars as ‘Amadeo’s system’, in reference to Giovanni Antonio Amadeo, one of the most prominent sculptor-architects to employ this method—helps to explain the lack of ancient sources in the area. As practiced by Amadeo and others, it was common to insert, sometimes to literally cover, the surfaces of the buildings with large-scale stone copies of ancient objects, creating works that evoked a general antiquity and gave an impression of rare value. The topic has been studied primarily in relation to the activity of sculptors, namely, Amadeo, who is famous for his contributions to the Colleoni Chapel in Bergamo and the Certosa di Pavia. Scholars have focused attention on the realisation of well-known stone portals (for example, the so-called Porta Stanga now at the Musée du Louvre) and the production of tombs and funerary monuments in private chapels. In these studies, the activities of Lombard masters, including Giovan Pietro da Rho (Cremona) and the Rodari brothers (Como) has been brought to light.

One of the principal techniques employed by Lombard designers in the production of *all’antica* models was the production of terracotta models. The serial production of terracotta architectural decorations produced two connected effects: (1) it helped to diffuse copies and antiquarian models, including those originally realised in stone, and (2), it allowed models and moulds, which had been replicated multiple times, to be easily transported between workshops, furnaces and building sites. At the same time, terracotta workshops had at their disposal a great variety of other models, including drawings from the antique and prints, and designers were able to select from this repertoire, and to copy or imitate the most famous works of art of the time. Here, one might cite the prints realised by Andrea Mantegna and the famous Prevedari print by Donato Bramante.

An analysis of terracotta production in late-fifteenth-century Lombardy reveals a substantial period of change. Where in the mid-Quattrocento figurative models were used to simply enrich the decorations of architectural mouldings, by the end of the century, these models had multiplied to constitute a sort of proper terracotta architecture, in which single architectural elements, notable details, architectural orders, and sometimes entire architectural compositions were replicated. Highlighting specific types of terracotta decorations that were employed in distinct cases, this paper will illustrate the role of this technique in the creation of the Lombard architectural culture of the late-fifteenth century. The study examines not only the diffusion of forms and the selection of models, but also looks at their production in related networks of furnaces, which can be associated with known terracotta sculptors, architects and designers.

David Hemsoll – *Imitation and its Changing Means and Ends in the Architecture of Andrea Palladio*

The argument underpinning this paper breaks with previous accounts of the work of Andrea Palladio (1508–80) by explaining it not simply as a manifestation of a wish to devise schemes that were indebted to the ancient past, even if they are also characterised by their ‘youthfulness’ or ‘maturity’, or as the outcomes of contingent factors. Such factors, which can often be highly pertinent, would include Palladio’s debts to particular individuals he knew, or his careful attention to the environments in which he worked, or the changing natures of the commissions he received; but they do not, in themselves, explain the highly individual character of Palladio’s buildings—especially as time progressed—or account for differences between works from different periods or, sometimes, even from the same period. The argument, instead, is that Palladio’s schemes were deeply rooted in consensual, or theoretically grounded, conceptions of architectural imitation, and that these imitative frameworks were in flux throughout his career, and were eventually augmented by alternative approaches, so that by the time of his final works he was able to draw upon the strategy best suited to a particular commission, while retaining a remarkable degree of constancy over his selected architectural vocabulary and his preferred compositional formulations.

The paper will chart and explain how Palladio conceived—and also responded to—imitative practices over a career that lasted almost half a century. It will, first, consider his early works and the various conceptual approaches he adopted in successive schemes. This period saw him completing a step-by-step transition from his early training as a stonemason and initial architectural education to his emergence as an architectural practitioner of exceptional judgment and resourcefulness; and it was when he gained familiarity not just with benefits accruing from basing new works on earlier schemes of accepted merit, but also with the distinctive imitative methods inaugurated previously by Raphael and his circle, which eventually saw him come to develop a *modus operandi* that was even more sophisticated and elaborate. The paper, subsequently, will examine Palladio’s output after c.1550, when he abruptly abandoned his earlier approach and replaced it with an imitative methodology that was particularly well-suited to villa schemes, which was simpler but also capable of evoking antiquity directly in new and especially potent ways; and it will examine other imitative strategies he adopted as well, seen for example in his designs for churches, assessing how exactly these could have been seen to correspond with, and also depart from, prominent ancient and modern prototypes.

The paper, in addition, will entail some broader evaluation of the diversity of Palladio’s imitative approaches within the purview of his late architectural vision more generally. What will be covered in all this, however, will not be confined to a simple account of Palladio’s evolving thought and practice, since it will also highlight some of the principal reasons for his changes of course. It will consider these changes, for example, in relation to how well his schemes would have been understood by his audiences, and to his aspiration to attract patrons of new kinds. It will also explore how far his changes in approach facilitated, or were even required by, his ever-expanding professional activity and the need to oversee several projects, often in diverse and far-flung locations, all at once. The paper will then devote at least some space to a re-appraisal of Palladio’s treatise, the *Quattro libri dell’architettura* (1570), a work itself founded on a concept of imitation which offered his own schemes from all periods as exemplars, and his versions of the five architectural orders as architecture’s fundamentals. It was via the treatise that Palladio presented himself as the figure who had re-established the ‘rules’ of ancient architecture, thereby enabling this ‘good’

architecture to be imitated, and it was through the treatise that he must have reckoned that his future legacy would be assured.

Peter Heinrich Jahn – ars combinatoria. *Practices of the Early Modern Pattern-based Architectural Draft*

There has long been a consensus in architectural research that the early modern architectural draft is generally based on the imitation of models. And in most cases more than one model is combined together to complex synthesis, so that we might regard this practice as a very *ars combinatoria*.

However, when uncovering model and derivative relations in the course of draft analyses, the epistemic methods and operative practices used in such a model-based draft process are rarely or not at all considered and therefore the media used in particular are disregarded in their operativity. For that reason, a genetic analysis of the model-based early modern architectural draft must include not only the draft visualizations but also those media that preparatorily convey the models to be incorporated into the design.

Such media were epistemically available to the early modern architect as a reservoir of possibilities in the form of sketchbooks as well as own drawing collections compiled by copying and/or collecting, furthermore by buying treatises and pattern books. Copying could be done by consulting workshops, plan archives, graphic collections and libraries. Operatively activated in the processual context of an architectural draft the model-conveying media should be described as draft patterns. With their help the design process is set in motion as a pattern-based draft, the latter in a conceptual narrowing of the model-based draft in accordance with its mediality.

The operativity of draft patterns follows the operative chain of searching, finding and selecting (*selection*), then combining the selection made into the design idea (*combination*) and finally transferring it from the draft patterns to the design drawing (*transformation*) what leads simultaneously to a *synthesis*. Traces of this three-steps-strategy can be found in contemporary rhetoric as well as eclectic philosophy and science.

The *selection* of patterns could be intended either by only formal typological interest or by the conceptional need for transporting semantic content by means of allusions and citations. In the sense of mediality, the preparatory materialization of the draft idea in the temporary arrangement of draft patterns on the architect's desk should not be disregarded. The *combination* of the models conveyed by the draft patterns could be done additively, correlatively, or even amalgamating. The combination process seems to be often determined by the mediality of the conventional orthogonal drawing set, because this provides the decomposition of a building into the diagrammatic two-dimensional figurations of ground plan, façade elevation, and section. Each drawing of such a set can function separately as a pattern, and can be combined with set parts borrowed as patterns from other origins. Further objects of the combination process were units of the drafted building like pavilions, storeys, portals & windows, towers, or domes. For the *transformation* process again copying plays an eminent role, because of a very similar practice when the architect is transferring the patterns selected into his design drawings. During the latter process scaling is necessary if the scales of the used patterns as well as the draft are differing.

Illustrative examples for all these operative aspects of the imitative pattern-based draft will be taken from ambitious Central European court architecture during the time span from about 1600 up to 1730 (Munich: Hans Krumpfer, Asam-Brothers; Vienna: Johann Lucas von Hildebrandt; Dresden: Matthäus Daniel Pöppelmann).

Merlijn Hurx – *“Ikea-architecture” in the Middle Ages: the Emergence of a Commodity Market for Building Components in the Low Countries*

In this paper I would like to explore the emergence of a commodity market for ready-made stone in the Low Countries for the construction of houses on the basis of new archival data. Furthermore, I will consider the factors that contributed to the standardisation of building components. In historiography, standardisation is mainly believed to have been a means to save on production costs, something which became more important in the fifteenth century due to competitive market conditions. Simple standardised blocks for door and window frames could be easily cut and processed in high numbers. The documents that concern the shipping of stone from Vilvoorde indicate that stone merchants indeed produced wares for an export market of anonymous buyers. This concerned so-called ‘general house work’ could be sold at disparate markets. Due to the booming cities in the sixteenth century this was probably an important and growing market. However, as we shall see, increasingly strict regulations by municipal authorities played an important role in the standardisation of products as well. Not all stone merchants were reliable, and to protect its citizens from fraudulent practices, civic authorities provided for quality standards. They specified the exact shape and dimensions of each component, thus contributing to the development of a commodity market for building components in the Low Countries.

Elizabeth Merrill – *Architectural Tracings and the Fragility of Design Authorship*

The history of early modern architecture is replete with discussions of artistic genius, invention, and inimitable creation. This is reflected in the predominant focus given to *disegno* and more specifically Vasarian *disegno*, which has ‘its origin in the intellect’, the visual manifestation of its author’s ingenuity. Even in the study of model books and copy drawings, scholars are eager to name names, to identify hands, to attribute collections to certain workshops. This has good reason: knowledge of the author, provenance and date of a drawing offers insight into the function and subject of the drawing, the reason for its creation, how it was used, and why it was preserved. How then do we proceed when considering traces: drawings produced by direct, manual transfer to create a facsimile of an existing design?

This paper centres on a remarkable set of sixteenth-century tracings conserved in the Drawing Matter Collection in Somerset, UK. The surviving paper folios were originally treated with oil so as to make them transparent, and in time have assumed a brownish hue as the result of aging. It appears that the loose pages were originally contained in a parchment binding lined with recycled folios of a religious text, a striking dichotomy of media, and a telling reminder of the value of writing material in the early modern period.

Preliminary study of the Drawing Matter folios, characteristically, has sought to establish their provenance in the workshop of Giovanni Antonio Dosio. The association allows the folios to be securely situated in relation to the so-called ‘Accademia della Virtù’, and with Dosio’s prolific production of drawings of Roman monuments. Yet, one of the most striking characteristics of the Drawing Matter set is the salient presence of distinctive manners of graphic representation, a fact that clearly resonated with the compiler/draughtsman, who on multiple folios made explicit annotations to link a given study with the ‘hand’ of an authorial designer, including Alberti, Michelangelo, and Bramante. Indeed, the anonymity of the Drawing Matter folios—as traces—is accentuated, almost in a self-conscious and contradictory way, by the overt acknowledgement of signature designers.

This paper considers the Drawing Matter tracings and the methodological issues they present in regard to architectural authorship, outlining a preliminary framework for understanding such drawings. The study pursues the hypothesis that tracing was a common technique employed by practicing architects, and drawings produced by direct tracing constituted a foundational component of design education. In this, the importance of authorship is at once refuted and confirmed. The canonical authors of Renaissance architecture were as celebrated then as they are today. At the same time, within porous worksites and close artisan communities, there was remarkable fluidity and transmission of ideas and design, which enabled the anonymous practitioner to appropriate different ‘hands’, in effect diluting the potency of the original.

Maria Teresa Sambin de Norcen – *Donatello and Ancient Models, Donatello as a Model. His work in the Basilica of Saint Anthony, Padua (1443-1454)*

Donatello is well studied as a sculptor, his primary mode of artistic production. However, Donatello was also an architect. Let us not forget that the boundaries between the arts in the fifteenth century were weak and would remain so through the pre-industrial period. As an architect, Donatello collaborated in the construction of the large brick model of the dome of Santa Maria del Fiore in Florence, which one could enter into. He devised a complex arrangement for the choir and presbytery of the Basilica of Saint Anthony in Padua, and designed chapels for churches in the Veneto. None of these works have come down to us intact, and it is likely for this reason that Donatello's architectural contributions have been historically overlooked. While few authors have dedicated themselves to Donatello's architecture, it is a subject that merits considerably more attention (Bruschi 1998; Morolli 1987; Sambin de Norcen 2021). This contribution examines Donatello's activity in Padua, considering how the models he developed in the *cantiere* of Saint Anthony came to be directly copied in the development of architecture in the Veneto and elsewhere in Italy.

Donatello's approach to antiquity was distinct from that of his friend Brunelleschi, who drew fundamental conceptual indications from Roman architecture. Brunelleschi's architecture is characterized by its systematic, serial and proportional nature. Donatello, in turn, looked to Roman architecture and sculpture for the immense formal repertoire it offered, and for compositional schema. From the antique, he recreated and reinterpreted motifs, repurposing the intimate 'Dionysian' essence of Roman art as found in a wealth of formal and material models, including vases, eroti, flowers, shells, bronzes, coloured marble slabs, volutes. The architectonic spatiality of his bas-reliefs, as well as the architecture of the choir-presbytery complex of Saint Anthony (known from documents and the pieces of the structure that were reused in the church) reflects ancient models. The composition in Saint Anthony was possibly inspired by the remains of late antique buildings in Rome. Decorative elements come from ancient objects and works of *Kleinarchitektur* such as altars and sepulchral monuments, which were transported throughout Europe.

In terms of copying, the decorative component of Donatello's architecture was readily appropriated by contemporary stonemasons. There are records of the numerous stonemasons who flocked to the worksite of Saint Anthony to either work alongside Donatello, or to simply take note of his art and the antiquarian details he used. It is clear that the famous sculptor and architect Pietro Lombardo, who later opened his flourishing workshop in Venice, adopted and reinterpreted models from Donatello. Indeed, there was a constant coming and going of masters from the *cantiere* of Saint Anthony while Donatello was employed there (Venturi 1908). It is evident that when Donatello left Padua many stonemasons returned to their hometowns or embarked on new adventures, while the work on the church, which remained in progress for over forty years, slowed down.

It was thanks to the decoration copied from Donatello that the facades of the Paduan palaces were renovated in an *all'antica* style. The lost iconostasis of the cathedral of Ferrara, created by Nicolò Baroncelli who was in Padua at the same time as Donatello, was copied from that of the choir of Saint Anthony. The artist who perhaps best managed to reinterpret the spatial aspect of Donatello's architecture was the Paduan painter Andrea Mantegna, even though he was only twelve years old when the Florentine artist arrived in Padua. The frame of Mantegna's altarpiece of San Zeno in Verona (1456-1459) recalls the altar of Saint Anthony not only in its shape, but also in the continuity of the painted scene located behind the

colonnade screen of the frame. A few years earlier in the *Stories of Saint James* of the Ovetari chapel in Padua, Mantegna also repurposed the more markedly tectonic aspect of buildings represented by Donatello in some of his bas-reliefs, such as the *Miracle of the mule*. In Mantegna's painting massive buildings serve as a backdrop to the scenes: the only precedents for this composition in the Veneto are found in the reliefs of Donatello for the altar of Saint Anthony.

Carolyn Yerkes – *Monument as Matrix: Architectural Inscriptions, Squeezes, and the History of Printed Words*

Ubiquitous in archaeology and nearly unknown in the history of prints, the squeeze awaits its art historical moment. Called an *estampage* in French and an *Abklatsch* in German, a squeeze is a paper impression of an inscription. Today, archaeologists commonly use squeezes as a form of epigraphical documentation, because these thin, lightweight surface casts can provide detailed and relatively portable facsimiles of inscribed monuments. To make a squeeze, paper is placed on top of an inscription, wetted, and pressed into the inscription's recesses using a stiff brush to beat out the air bubbles that remain between paper and surface. Once the paper has dried, it is removed from the surface, leaving a raised impression of the inscription on its reverse. A photograph taken during an archaeological expedition to Northern Syria, led by Moritz Sobernheim and Ernst Herzfeld between 1908 and 1914, shows a squeeze drying on an inscription carved in Mameluk *naskhi* script on a mosque wall.¹ As sunlight rakes across the building, illuminating an adjacent inscription, the dried paper has begun to peel away from the stone, as if the impression itself is preparing to take flight. The photograph reveals how in this form of printmaking, monuments become matrices.

'Monument as Matrix: Architectural Inscriptions, Squeezes, and the History of Printed Words' focuses on sixteenth- and seventeenth-century attempts to print inscriptions directly from monuments, especially architectural ones. Specific examples include Antoine Lafreri and Jean Matal's effort to print directly from ancient Roman bronze plaques in the 1550s, creating inked impressions that still exist today in the Vatican Library and in Berlin; Nicolas-Claude Fabri de Peiresc's requests for squeezes and impressions of monumental inscriptions and other objects; and the squeezes that Raffaello Fabretti made of the Roman aqueducts in the last decade of the seventeenth century, now in Denmark. In the first published history of printmaking, entitled *Sculptura, or, The History, and Art of Chalcography and Engraving in Copper* (London, 1662), John Evelyn prefaces his discussion of the book's purported subject—impressions pulled from copper plates—with a veritable primordial ooze of inscribing practices, a compilation of references to material surfaces and the tools humans have used to work them since the beginning of time. Evelyn provides a prehistory of the matrix: an origin story as overture. He explores the various ways that people have made permanent marks on matter, and in so doing, he gestures toward many types of inscribed surfaces that could have been used to make prints, in theory if not in practice. In *Sculptura*, Evelyn lists the very things that archaeologists would one day squeeze—including, especially, the forms of writing that appear on walls. This paper uses Evelyn as a prompt to imagine an alternative prehistory for printing from buildings.

Classics and archaeology students today are still taught to make squeezes; the *Oxford Handbook of Roman Epigraphy* asserts that 'Taking a squeeze represents the most faithful means of recording an epigraphic text' (8). A video in which Charalambos Kritzas, former director of the Epigraphical Museum in Athens, makes a squeeze demonstrates both how an archaeologist employs the technique and also why: the monumental inscriptions themselves cannot be moved, even when fragmentary, and photography cannot capture all their details.² Thus despite the damage squeezes can cause to the surfaces of monuments, especially fragile or polychromed ones, their outsized role in the history of archaeology is completely

¹ <https://www.si.edu/object/archives/components/sova-fsa-a-06-ref28685>

² <https://www.youtube.com/watch?v=JNV-uLUjvY>. I learned about this video from Aaron Hershkowitz and much about squeezes in general from the Krateros Project at the Institute for Advanced Study in Princeton: the <https://www.ias.edu/krateros>.

explicable. Their total omission from the history of printing in the west—Ad Stijnman’s *Engraving and Etching, 1400–2000* and Antony Griffith’s *The Print before Photography: An Introduction to European Printmaking 1550–1820*—is more difficult to understand. Squeezes certainly have a place in this history: experimental efforts to print inscriptions directly from monuments exist throughout the period and are intertwined with the history of art in all its forms and in all places. ‘Monument as Matrix’ recuperates one aspect of this missing history by examining the earliest known experiments with squeezes: a series of art historical episodes that illuminate the entanglement of decipherment, printing, and monumentality.