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Title: The Common Root of Architectural History and Theory and Their Practical Orientation

Abstract: While the beginning of architectural theory in the Renaissance can undisputably be ascribed to Leon Battista Alberti and its further important steps may be seen in the various editions of Vitruvius' Ten Books on Architecture from the following decades, the most important and influential early modern books on architectural history, theory, and practice are the "Regola delli cinque ordini di architettura" by Jacopo Barozzi da Vignola (c. 1562, reprinted several hundred times!), Andrea Palladio's "I Quattro libri dell'architettura" (1570) and the richly annotated edition and translation of Vitruvius by Daniele Barbaro (italian translation 1556 and 1567, latin edition 1567), created with Palladio's help and still often regarded as one of the best commentaries on the only surviving book on architecture from Antiquity. That Palladio and Barbaro worked together is quite well known, but that their work should be seen as a result of a project in which Vignola also was involved, does not seem to have attracted any wider attention. The paper will demonstrate the hints and evidence(s) leading to the conclusion that these major achievements and 'foundation stones' of architectural history and theory have their common root in the project described in Claudio Tolomei's letter to Agostino de' Landi (mostly, but erroneously regarded as that of the so-called Accademia della Virtù) and that they were – like Tolomei's project – strongly oriented on architectural practice and the future of architectural in general.

Note: This is the text of the paper as hold at the conference. The numbers refer to the slides which are not reproduced here for image copyright restrictions.

1. On two conferences of this series I had the opportunity to present first results from my ongoing research on a forgotten academic project defined in Rome in 1542. My interest in this topic started with a large group of anonymous architectural drawings — in fact, I would say: the largest of its kind at all — documenting ancient and some contemporary Roman buildings with the highest precision and completeness that was available at the time, and which often was not available to later archaeologists and architectural historians. One of these drawings you see in the background. In addition, the aim of the Roman *Accademia*'s project was to identify and document also *all available* theoretical and practical knowledge about ancient Roman architecture and its cultural contexts like history and politics, religious and social functions, and even the urban situation changing over time. Today I want to focus on some of the results of this project developed by the so-called *Accademia de lo Studio de l'architetture* which you won't find in the relevant lexica or databases because it was, as I said, forgotten — even though it's rich output influenced and defined the then future architecture, architectural theory, history and practice and several of the new humanities in an unprecedented and unrivaled way (if I'm correct…). The main reason why it was forgotten seems to lie in the strict workload sharing of this truely interdisciplinary

and international project — maybe even the largest of all times — and the inability of later research to «connect the dots». Some of these dots, that you see here in the line of title pages, belong to the most important books in the history of architecture, which all seem to be related or emerged from this project.

2. But first please allow me to commemorate my teacher Christof Thoenes who more than 20 years ago pointed me to a set of understudied drawings for Antonio da Sangallo the Younger's last project for St. Peter's basilica in the Vatican. These drawings are part of the so-called *Codex Destailleur D* in Berlin which itself is the nucleus of this very large group on anonymous drawings that led to the still ongoing research of which I want present several results today.

3. The program of this Renaissance project was layed out by the Siennese humanist, poet, politician and — later — bishop Claudio Tolomei in a letter to the then papal ambassador in Venice, Agostino de'Landi, in 1542, but it relies on thoughts written down by the then leading Italian architect Antonio da Sangallo the Younger in a manuscript *Proemio* to a new edition of Vitruvius which was planned to be made — for the first time — in close collaboration between architects and philologist. Tolomei published this letter in 1547 in this collection which was reprinted some 20× in the 16th century alone. Tolomei starts with the claim that architecture, more than any other art, consists of theory and practice and that, therefore, the project will consider the only surviving ancient treatise on architectural theory and practice, Vitruvius' *Ten Books on Architecture*, as well as any realised architecture — including its decoration and technical aspects — together with all sources helpful to understand it in its social, cultural, political or religious contexts.

4. This is the list of books which, according to Tolomei's description would be published by the *Accademia* and which, therefore, seem to have been in preparation around 1542.

5. Tolomei's program always has been regarded as far too ambitious to have been realised — except for a few minor parts — and even as not realisable *at all* by modern research. So, no-one seems to have read his letter until the end where Tolomei answers exactly these objections by saying that the work would be divided among *very many* «belli ingegni» and therefore could be accomplished in the same way as hundreds of crafts are executed in a big city at the same time. Therefore, it should be no wonder that the work could be finished «in less than three years». It is remarkable that Tolomei kept this claim written in 1542 still in 1547 and, by doing so, somehow admitted that the realisation of the program was not finished yet. But, on the other hand, his formulation should be taken seriously — and not be regarded as exaggeratory application language as we know and use it today —, we should take him seriously not only because he was a famous person already around the time he published his letters but also because

6. the wide network of almost 170 persons

7. related to him and

8. the large amounts of manuscript sources and drawings they created:

9. To give you a short impression of the material: This is one of more than 12'000 numismatic drawings made by anonymous draftsmen for Jacopo Strada in Rom around 1552. It depicts a coin showing the *Curia Iulia*.

10. After some heavy «restaurations» in the 1930, the medieval church of Sant'Andriano was changed back into its presumed late Roman stage as the *Curia Iulia*. Note the holes in the façade which are obviously medieval: No Roman architect would have left such a shameful trace of incompetence ...

11. But these holes, together with the coin, have used for all modern reconstructions of the Curia showing a porticus in front. But let's look more carefully...

12. There are many problems with this reconstruction: One is, that there is no roof of this supposed porticus in the coin. Another is the number of columns: If you would place only 4 columns in front of the façade in the distances suggested by the coin, then it would have been statically impossible to support a roof. A third problem is, that no traces of these columns or their supports have been found in front of the Curia: neither by modern excavations nor by Jean du Bellay who had excavations made in search of these columns when he was the cardinal priest of Sant'Adriano in 1548. In my humble opinion, the solution is:

13. There *were* no columns directly attached to the building — as the coin shows and the drawing tries to demonstrate —, but they must have been standing in some distance from the façade which, therefore, appears without the columns and the medieval holes in this drawing on the right. The short conclusion here is, that Strada seems to have had access to the knowledge generated by its draftsman in the years immediately before or during his sojourn in Rome where he was a member of the *Accademia*.

14. The architectural drawing shown is part of a large corpus of similar, very detailed drawings based on measurings executed between c. 1535 and 1555. After three years of research, this list gives an overview of those drawings surely or with some very high probability attributable to Tolomei's *Accademia de lo studio de l'architettura*. I am convinced that these 850 sheets with some 3'500 single drawings should be regarded as the largest known such corpus in the history of architecture based on a coordinated systematically executed measuring campaign — not only in Rome, but *at all*. The results are, of course, very remarkable, but almost non of these drawings has been remarked by architectural historians or archaeologists yet...

15. One example for the precisiion with which the drawings were made is this measuring sketch taken from the then still standing last column of the Basilica of Maxentius at the Forum Romanum.

16. There, we find a sketch of the different diameters of the so-called cannelures of the column which today stands in front of Santa Maria Maggiore, but also, on the right, the separate drawing showing the depth of a horizontal cut in the base: measured with a precision of a half *linée* of a French foot, i. e.: 0.7 mm! For the work of a stonemason *not* using modern, laser-supported machines, this precision is simply absurd. But it was needed to recalculate the original proportions based on one of the different ancient Roman feet that could only be regained from the buildings if one knew the real dimensions with the highest precision.

17. Another example comes from the Baths of Diocletian: Though the water reservoire on the right has been measured several times by Renaissance architects — it was destroyed later — no other drawings contain as many measurements and technical information as this one, including the cut of the entire building on the left side of the plan. The highly developed systematics of the measuring campaign is further demonstrated by the sketch on the left reconstructing the water supply system of the baths as far as it was accessable around 1550 and belonged to the Villa of Cardinal Jean du Bellay. (You heard the name just before. . .) No-one ever made such a reconstruction based on the then still accessable findings in place — and no-one later could do so, because of the destruction of large parts of the Baths since then. . .

18. Other drawings, still from the Baths of Diocletian, show the plan of the heating system and a cut of the service corridor beneath it. Everything shown here with precise measurements was still in place around 1550 . . . except for the fire, I guess.

19. I cannot end this part of my paper without my favourite drawing: this plan of one quarter of the Colosseum. Besides all the measurements for almost all of the architectural parts, it preserves a remarkable observation:

20. That of the «crossing *radii*»: In any regular oval or ellipse, as the Colosseum is always reconstructed in drawings and prints, such irregular crossings of the *radii* would be geometrically impossible. The draftsmen around 1550 observed this irregularity and tried to record this information with their means. The only later plan of the Colosseum demonstrating — but not analysing — this very same fact is the one on the right: And it is from a publication of 1999, i.e.: 450 years later!

21. But this irregularity could have been discovered earlier if architects and archaeologists would have measured their object or — in the last 50 years or so — would have studied aerial photographs carefully. Today, everyone can do this with one of the map services on the internet — and, please, be astonished as I am when you compare the precision of the Renaissance *free-hand* drawing with that photograph.

22. Just to remind you: the archaeological drawing from 1999 is not as precise as the older one.

23. Coming back to the *Accademia*'s program, the list of printed books relatable to its members contains several foundation stones of the humanities regarding the study of antiquity:, e. g.:
number 1 & 5: Bartolomeo Marliano's *Topographia Urbis Romae*
numbers 7, 8, 18, 25 presenting one of the most important sources for the Roman history, the *Fasti capitolini* found in 1546 only a few steps from Sant'Adriano

24. or number 46, Strada's edition of Caesar including — as far as I know — the first printed collection of inscriptions from Spain, or number 57, to honour a netherlandish scholar here: Martin Smet's *sylloge* of Latin inscriptions from all over Europe, related to Jean Matal's collection in the Vatican to which Smet was one of the most productive contributors... Ironically, Justus Lipsius published Smet's book after an unbelievable series of disasters — and this publication earned Lipsius the fame of the first scientifically working scholar in the history of epigraphy: Only recently William Stenhouse pointed out that Lipsius does not really deserve this reputation because his contribution here and his own interest in epigraphy can only be described as «limited». With numbers 54, 59 and 60 we have also Antonio Agustín's *Dialogues* on the list, usually regarded as the foundation stone of numismatics. And so on...

25. To come back to my main topic, the historiography of architectural history and theory, their common root (you guessed it already: it is the project of the *Accademia*) and their practical orientation: This is Tolomei's list of the books, with some of those materials and printed books highlighted in blue that can be related it. As you can see, the project was realised almost. The three books still lacking and in black may even have existed in manuscript form but have been lost or could not be identified yet. Among the preserved sources there are some of the largest collections of their kind: Besides the architectural drawings there is the already mentioned collection of Latin inscriptions coordinated by Jean Matal in the Vatican Library: It comprises at least 6 volumes and some 15'000 inscriptions. In a similar way, the Codices *Coburgensis* and *Pighianus* contain several hundred very precise drawings of ancient reliefs and sculptures.

26. Now, I finally want to focus on the books on architecture from Tolomei's list, here in bold typeface.

27. The first one is the *only* printed book regarded as a result of Tolomei's program: The *Annotationes* to the «difficult» passages in Vitruvius's *Ten Books* published by Guillaume Philandrier in 1544 and

28. fitting well into Tolomei's description for the first book in his list, surely not by accident.

29. Besides a combination of the *Annotationes* with the full text printed in 1550, in which Philandrier was not involved, he combined his reworked annotations and an emendated version of the ancient text in 1552

30. exactly as it was planned as book 3 in Tolomei's list.

31. Philandrier was the secretary to the French ambassador cardinal Georges d'Armagnac with whom he travelled to Rome, but he remained several months in Venice to study architecture with Sebastiano Serlio who, on the other hand, stood in contact with several of the members of the *Accademia*. One of them was Antonio Labacco who had been the closest collaborator of Antonio da Sangallo the Younger and printed his *Libro appartenente a l'architettura* in his home in Rome in 1552. The book contains plans, cuts and elevations as well as short descriptions of mostly ancient buildings and resembles quite well

32. the description of book 13 in Tolomei's list. It can be assumed that Labacco planned to extend his book as a set of single plates over the time in the same way as Antoine Lafréry did later starting with the copper and woodcut plates he inherited from Antonio Salamanca with whom Labacco had cooperated himself.

33. The next publication from the *Accademia's* network came out one year after the death of its *spiritus rector*, Marcello Cervini, who died as pope Marcellus II three weeks after his election. (For the musicologists among us: Palestrina's *Missa Papae Marcelli* is dedicated to him and — according to the legend — saved polyphony from being banned by the Council of Trent.) In 1556, the Venetian churchman Daniele Barbaro from a noble family of leading scholars published his richly annotated translation of Vitruvius and, by doing so, fulfilled point 8 in Tolomei's list. But he would have been unable to do this, as he confirms himself, withouth the help of a former stonemason named Andrea di Pietro della Gondola. Andrea had spent at least three times several months in Rome in the 1540s with his mentor Giangiorgio Trissino who gave him the name under which he later became very famous: *Palladio*. Palladio provided Barbaro with all the illustrations needed to understand Vitruvius' text, and Barbaro, of course, reused them in his Latin edition that came out 11 years later. The source for his text and translation of Vitruvius was, you guessed it already: Philandrier's edition of 1552.

34. Barbaro's Latin edition is not, as it may seem, a somewhat redundant repetition after Philandrier's from 1552. Instead, Barbaro's commentary is far more extensive and contains much more illustrations than Philandrier's edition covering only the «dark» passages and printed in Lyon: Therefore, it may not have been easily available in Italy.

35. The chronologically next book on architecture relatable to Tolomei's publishing project is Jacopo Barozzi da Vignola's *Regola delli cinque ordini d'architettura* which was printed in or before 1562 and with on the same press as Labacco's book in the latter's

house. (By the way: Whenever you read the title cited as *Regol-E*, i.e., the plural of *regola*, you may suppose that the author did not understand what he was writing about, because it is *the central point* of Vignola's book that he developed ONE rule for an *entirely new system* of the classical orders of columns.)

36. In fact, Vignola's *Regola* complements Labacco's book very well in so far as it provides a modular system to create classical orders derived from the best ancient examples — which can be found in Labacco's book — but in a systematic approach that did not exist in antiquity. — It was mentioned by Giorgio Vasari, who knew Vignola personally, and by Vignola's biographer Egnatio Danti, whose father worked with Vignola and who published Vignola's treatise on perspective, that Vignola «measured all the antiquities» in Rome *in the service* of the *Accademia* headed by Cervini. But architectural historians have regarded these measured drawings as completely lost, without taking into account that Vignola, like other architect studying ruins, simply could not have done this *alone* but needed helpers who would have to be guided by an experienced architect like Vignola. Therefore, it is no wonder that his own hand *does not* appear among the drawings made for the *Accademia* by anonymous draftsmen of the *Codex Destailleur D* complex.

37. But saying Vignola's *Regola* would fit *well* into Tolomei's program as number 11 would be a slight exaggeration: When the program was formulated in 1542, there still seems to have been some hope to find a common set of rules among Vitruvius and the built architecture which could be summed up in book 11. Therefore, the intention was to compare these preserved rules and examples instead of inventing new ones, like Vignola did in the 1550s.

38. This part of the program, therefore, seems to be better represented by Jean Bullants *Reigle Generalle d'Architecture*. Like Vignola's *Regola* it uses the *singular* in the title, claiming to provide a once-and-for-all solution to the difficult problems posed by the ancient orders of columns, which are, in a certain sense, at the «heart» of classical and Renaissance architecture and architectural theory.

39. While Bullant claims to have been in Rome in his youth during the 1530s and to have studied the ancient buildings there, we still do not know when exactly this could have been. But given the high probability that the circle around Cervini and Tolomei always was aware of such activities in the *eternal city* like Bullants compatriot Philibert de L'Orme reported in his *Premier tome d'architecture* in 1567, and also given the fact that many of the draftsmen recruited for the project were of French origin, we may assume that Bullant was one of them. At least some of his prints illustrating his book or published independently document first-hand knowledge of the ancient monuments, and again, one has to keep in mind that no-one could have taken such measurements alone without a group of helpers.

40. And this leads us back to another young architect who used his Roman experiences later for his very successful book: Besides Vignola's *Regola*, reprinted several hundred times over the following centuries, Andrea Palladio's *Quattro Libri* from 1570 were — and in some regard: still are — a bible for architects. Instead of a «full set» of ten books as Vitruvius and Leon Battista Alberti or — at least — 8 books as Serlio wrote, Palladio limits himself to four books. He starts, like Vignola and Bullant, with a set of rules for the classical orders of columnes in book one, very closely related if not dependent on Vignola's but slightly simplified for practical reasons, I would guess, and then extended this with practical information in book 2, followed by examples from his own building practice as a — then successful — architect in book 3 and, finally, closing with a book of ancient temples and other buildings, quite remarkably resembling book 13 in Tolomei's list and even better than Labacco's did, who had died shortly before 1570:

41. Palladio provides exactly the plans, cuts and details Tolomei lists as the contents of book 13 and annotates them with a historical and an architectural commentary as Tolomei described it. If one takes into account that Palladio wanted to publish another book on the imperial baths and triumphal arches, we may regard his *Libro Quarto* as the attempt to realise at least *that* part of Tolomei's program which he helped to prepare some 25 years earlier while an aspiring stonemason becoming architect in Rome.

42. One may wonder if — and architectural historians may doubt that — all these books and the many sources listed above really may be attributed to Tolomei's description of the project developed by the *Accademia*, and I agree that further research is needed here. In a very strict sense, my presentation still has to be regarded as a set of interrelated working hypotheses. But unfortunately the Swiss national fund decided not to support my research anymore because I did not publish the results of my work already — which I would have had to start some 3–4 years ago to have them available in print today. Unfortunately, this was the time when I just had *started* to work on the architectural drawings and to discover more and more of them, *trying to figure out if and how they belonged all together at all.* This seems to be a typical case of research funding that one only receives when he (or she) *has done* the research already, knows exactly what will be the outcome and published these results *before* receiving for money to *do* the research … But I can firmly say that there are *far too many relations* — among the persons involved in this project and connected to Tolomei, Cervini and many others, the manuscripts and drawings created and the books printed — to regard them as simple coincidences and parallels as it has been done until now. In fact, I do not know of *any* system of hypotheses in architectural or art history, though often presented as *facts*, that is better supported by as many observations as these presented here (and on several other occasions).

43. But what about the practical orientation I promised to talk about in the title of my paper? All the books mentioned above in relation to Tolomei's description of the *Accademia*'s project are less directed to patrons, theoreticians or historians of architecture, but to contemporary architects, building masters, and even stonemasons themselves. They were intended as guides how to design buildings and their details, all based on the presumed solid and best foundations of ancient Roman architecture — be they described by Vitruvius or still standing upright and measured by architects or archaeologists.

44. In fact, *this* was the main purpose of the *entire* program which Tolomei begins not only with the proclaimed union of theory and practice in architecture cited above. He also clearly states that its intention is «to re-awake the noble study of architecture and to lead it out of the darkness in which it has remained, to an even brighter light and to open up the way for many others to add even more clarity and splendour.»

45. If we only take into account the immense influence of the books presented here as results of the *Accademia*'s work, we may safely say that *this* purpose of the *Accademia*'s program was fully accomplished. There is hardly *any* city or castle in Western architecture since the late 16th century that does not reflect the classical orientation set or enforced by these authors, and this holds even true for a lot of architecture built in other parts of the world during colonial times or in any kind of cultural exchange. And even where the classical orders were *not* cited by modern architects following Vitruvius, Vignola and Palladio — the basic thoughts on functions and proportions formulated by Vitruvius, explained by Philandrier and Barbaro, depicted by Palladio and exemplified through their own buildings or the systematic approach of Vignola — all of them influenced even the architects of the *Bauhaus* and other stylistic movements since the 20th century. Without these books, the built world around us would look *quite* different, literally. — I guess that should be reason enough to *rediscover* the *Accademia*'s project and its rich heritage through coordinated, systematic research in quite the same way as the *Academicians* systematically rediscovered, studied and organised the theoretical and practical knowledge on ancient Roman architecture. By doing so we may receive lots of ...

46. News from Ancient Rome. – Thank you!