PHILIBERT DE L'ORME AND THE FRENCH TRADITION OF VAULTING

Philibert de L'Orme repeatedly described himself as the person who had brought the style of the Renaissance from Italy to France.[1] He lived in Rome for three years (1533–1536), where he was part of the vanguard circle around Marcello Cervini, from which the Accademia della Virtù emerged shortly thereafter, and was introduced by Cervini to the study of ancient architecture.[2] But de L'Orme also adhered deliberately to the French tradition. The architectural treatise that he published in 1567, the *Premier tome de l'architecture*, combines the old and the new so perfectly that it became a classic of French architectural theory.

The *Premier tome* is clearly influenced by Italian architectural treatises and, inevitably, by Vitruvius. Its layout resembles Sebastiano Serlio's books on architecture (de L'Orme adopts the form of a picture book combining small text passages with large pictures which had been introduced into the architectural literature by Serlio), and the theoretical discourses in the first book about planning and the architectural profession owe much to Leon Battista Alberti. Essentially, de L'Orme took over the doctrine of the orders from the Italians, as the part of the new architectural theory that was crucial for construction practice. He relied, as usual, on Serlio,

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1   Philibert de L'Orme, *Le premier tome de l'architecture*, Paris, Federic Morel, 1567, f° 142v°. Anthony Blunt, *Philibert de l'Orme*, London, Zwemmer, 1958, p. 148 (Instructions). On de L'Orme, see Antony Blunt, op. cit.; Henri Zerner, *L'art de la Renaissance en France. L'invention du classicisme*, Paris, Flammarion, 1996, p. 402-420; Jean-Marie Pérouse de Montclos, *Philibert de l'Orme. Architecte du roi (1514/1570)*, Paris, Mengès, 2000; Frédérique Lemerle, Yves Pauwels, eds, *Philibert De l'Orme (1514/1570). Un architecte dans l'histoire*, Turnhout, Brepols, 2016. For the historical classification see also Paul Frankl, *The Gothic. Literary Sources and Interpretations through eight Centuries*, Princeton, Princeton University Press, 1960, p. 295-298; Michael Hesse, *Von der Nachgotik zur Neugotik. Die Auseinandersetzung mit der Gotik in der französischen Sakralarchitektur des 16ten, 17ten und 18ten Jahrhunderts*, Frankfurt am Main/Bern/New York, Peter Lang, 1984, p. 33-36.

2   Philibert de L'Orme, op. cit., f° 131r°-v°.

who, de L'Orme says, had brought the knowledge of ancient architecture to France (f° 202v°).[3] From Serlio he borrowed the whole conception of the canon of columns as a uniform scheme, in contrast with the unsystematic rules of Vitruvius, as well as many particular forms or comments. He did, however, upgrade the doctrine of the columns, just as Jean Bullant had done three years before in his *Reigle generalle d'architecture*.

In the context of the doctrine of the orders, de L'Orme writes that his countrymen had built in the traditional French style, but abandoned this "*façon barbare*" after he, de L'Orme, had returned from Rome and introduced the new style into France (f° 142v°). This apodictic judgement is clearly excessive: it flatly extends the verdict on the Gothic which was widespread in Italy at his time, to the early Renaissance buildings in France, including even those instigated by Francis I, although some of them already had a lot in common with de L'Orme's own works.

But on the whole the *Premier tome* is conceived differently to the typical Italian treatises: it is intended for architects as well as for artisans. De L'Orme presents the architect as someone who combines theory with practice. This corresponds quite well with Vitruvius's view, but less well with the Italian architectural theory of the Renaissance.[4] The Italian theorists focused more on distinguishing architects, on account of their broad education and specific artistic capacity, from the lower social class of building craftsmen. Most prominent Italian architects – such as Brunelleschi and Bramante – were not trained in construction practice, but began as visual artists. Accordingly, Italian architectural theory often assumes that architecture depends, to a significant degree, on painting. In France, where architects were trained in masons' lodges, the difference between architects and construction workers was not so categorical. De L'Orme holds that architects do not need to be able to paint well; it is sufficient that they can draw to a mediocre degree (f° 25v°).

In addition, in comparison with the Italian treatises from Alberti up to Serlio and later authors, the *Premier tome* is much more orientated towards building practice. De L'Orme avoids discourses that have only

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3   This relates to Serlio's *Quarto libro* (1537) and *Terzo libro* (1540).

4   Hubertus Günther, "Der Beruf des Architekten zu Beginn der Neuzeit," in Ralph Johannes, ed., *Entwerfen. Architektenausbildung in Europa von Vitruv bis Mitte des 20. Jahrhunderts. Geschichte, Theorie, Praxis*, Hamburg, Junius, 2009, p. 215-275. Id., "Der Architekt in der Renaissance," in Winfried Nerdinger, ed., *Der Architekt – Geschichte und Gegenwart eines Berufsstandes*, München, Prestel, 2012, p. 80-103.

theoretical value, such as the historical superstructure on the origins of architecture, or the stereotypical repetition of Vitruvian recommendations of certain building materials (which Alvise Cornaro had characterised as superfluous as natural resources were different in each region).[5] De L'Orme takes the particular natural resources of France into account. He points out that France has a great deal of good limestone (f⁰ 26v⁰-27v⁰). He recognized this peculiarity as a decisive factor for the national building practice, and oriented his *Premier tome* towards it. De L'Orme even includes this factor in his theory of the orders: he invents a national variant of the classical orders, characterised by the use of limestone, and inserted columns of this French national order in the Tuileries.[6] In antiquity and in the Italian Renaissance columns usually had either monolithic shafts made of hard stone such as granite or else the shafts were built with bricks. The shaft of de L'Orme's French national order is composed of several blocks of cut stone *en délit* (i.e. with the natural grain oriented vertically), with the joints clearly marked so as to emphasise the French peculiarity.

In addition to the orders, the *Premier tome* focuses on a second area: stereotomy – a factor emerging from the use of France's exuberant reserves of limestone.[7] De L'Orme treats stone carving in connection with geometry. He demonstrates in detail the complicated geometrical operations necessary to shape the individual stones to the spherical surfaces of vaults or arches in which they are to be used. His approach was inspired more by the methods that had emerged from the experience of craftsmen than by the kind of mathematical logic we find in Luca Pacioli's *Divina proportione*, even though the construction modes generated by de L'Orme are considerably more sophisticated and often difficult to understand. Stereotomy dominates the *Premier tome*. The title page of the *Premier tome* shows geometric constructions on which

5   Alvise Cornaro, *Trattato di architettura*, in Paola Barocchi, ed., *Scritti d'arte del Cinquecento*, Milano, Ricciardi, 1971–77, III, p. 3136-3137.

6   Philibert de L'Orme, op. cit., f⁰ 218v⁰-221r⁰. Yves Pauwels, "Les Français à la recherche d'un langage. Les ordres hétérodoxes de Philibert de L'Orme et Pierre Lescot," *Revue de l'Art*, 112, 1996, p. 9-15. Jean-Marie Pérouse de Montclos, "Le sixième ordre d'architecture ou la pratique des ordres suivant les nations," *Journal of the Society of Architectural Historians*, 36, 1977, p. 223-240. Id., *Philibert de l'Orme*, op. cit., p. 198-199.

7   See Jean-Marie Pérouse de Montclos, *L'architecture à la Française du milieu du* xv* siècle à la fin du* xviii* siècle, Paris, Picard, 2001; and the illustrations in Philippe Potié, *Philibert De l'Orme. Figures de la pensée constructive*, Marseille, Parenthèses, 1996.

lithotomy is based – and not columns or antique buildings, as do the
title pages of Serlio's third and fourth book (fig. 1).

FIG. 1 – Philibert de L'Orme, *Le Premier tome de l'architecture*,
1567, Title page.

For stone carving and vaulting, de L'Orme does not teach the new
Italian style. In Italian architectural theory vaults and stone carving
play only a very minor role. Serlio does not take them into account
at all. Alberti dedicates only two chapters of his voluminous archi-
tectural treatise to vaults and passed over stereotomy altogether; he
limits his discourse to the different types of brickwork, which were
all quite simple when compared to the bonds that were common in
French vaults.[8] The negligence of stereotomy in the Italian architectural
theory corresponds to contemporary Italian construction practice and
to Vitruvius. Limestone was much rarer in Italy than in France, and
stone carving as complicated as in France was very exceptional. In
Italy vaults were usually built of bricks, in antiquity as well as in the

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8   Leon Battista Alberti, *De re aedificatoria*, Strassburg, Jakob Cammerlander, 1541, liber 3,
     cap. 14 and liber 7, cap. 11.

Renaissance.[9] Moreover, Vitruvius does not consider the whole field. De L'Orme expresses his surprise at the fact that thus far no architectural theorist, ancient or modern, had treated stone carving (f° 87v°). After de L'Orme French architectural theory frequently treats stone carving and vaulting, and later authors emphasise that de L'Orme had indeed been the first to treat the subject.[10]

In Italy, by contrast, architectural theorists largely followed Vitruvius's example of neglecting vaults, even if this fitted poorly with Renaissance architecture. In reality, walls and vaults constituted the noblest way of buildings in Italy, especially for sanctuaries. This is largely also true in antiquity: the most famous ancient Roman monuments, such as the Pantheon, the Basilica of Constantine (during the Renaissance thought to be the Temple of Peace founded by Vespasian), the Baths of Diocletian, or the ambulatories of amphitheatres and theatres, were all vaulted with bricks.

In his treatment of stone carving, de L'Orme corrects an inconsistency of Italian architectural theory which, in accordance with Vitruvius, presents straight entablatures (usually associated with flat ceilings) as an ideal. He recalls that normal entablatures require excessively narrow intercolumniations because only a monolithic block of stone could be placed between two columns. Although such intercolumniations are the rule in Vitruvius, they were of little use in the Renaissance before Palladio. De L'Orme therefore presents a kind of entablature which is composed of several intricately interconnected cut stones as a means that permits to extend the intercolumniations (fig. 2); or he recommends to replace the relieving arches, which are hidden inside the masonry over the entablatures, with open arcades (f° 225v°-226r°). He thus transfers stereotomy to this area, too. Moreover, the open arcades correspond better than the hidden relieving arches to the classical maxim that architecture should imitate nature, because they display the actual tectonic conditions.

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9   Jean Pierre Adam, *La construction Romaine*, Paris, Picard, 1989, p. 173-211.

10   See the forewords of Mathurin Jousse, *Le secret d'architecture decouvrant fidelment les traits geometriques, couppes et derobemens necessaires dans les bastiments*, La Flèche, George Griveau, 1642 and François Derand, *L'architecture des voûtes, ou l'art des traits et coupes des voûtes*, Paris, Sebastien Cramoisy, 1643.
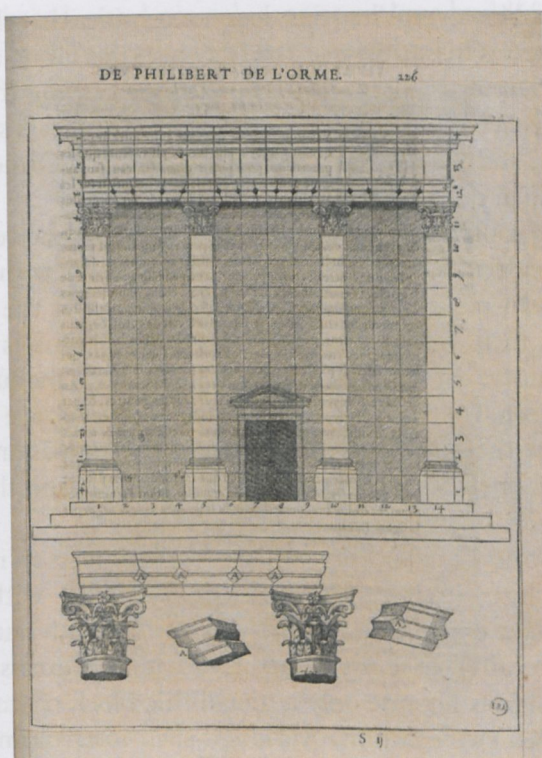
DE PHILIBERT DE L'ORME.   126

FIG. 2 – Philibert de L'Orme, *Le Premier tome de l'architecture*,
1567, wide intercolumniations.

In antiquity vaults of cut stone were more widespread in France
than in Italy, and some were quite sophisticated. Famous examples can
be seen in the so-called Temple of Diana in Nîmes and in the upper
story arcades of the amphitheatres of Nîmes and Arles.[11] The stones
of the barrel vaults of the amphitheatres must have been carved each
in an individual form, because the vaults are bent in two directions:
firstly according to the circumference of the arcades in front of them,
and secondly according to the geometry of the ground plan of the
arena, in which each bay is directed to one of the two centres of the
oval (fig. 3).

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11   For the reception of antique buildings, see Frédérique Lemerle, *La Renaissance et les
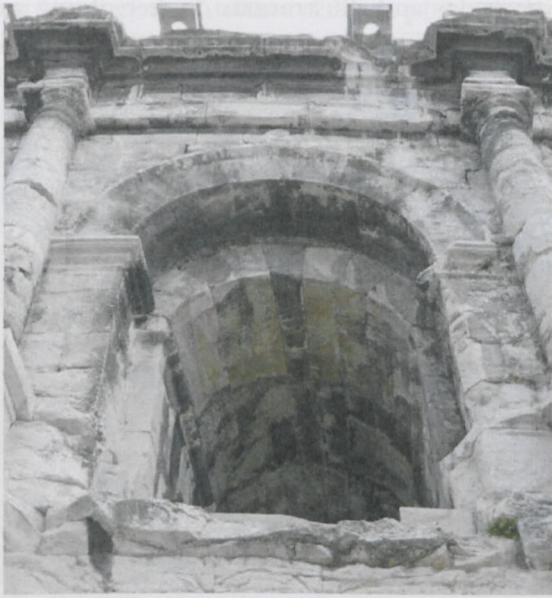   antiquités de la Gaule*, Turnhout, Brepols, 2005.

FIG. 3 – Amphitheatre of Arles, vault in one of the arcades.

De L'Orme does not mention these antique examples, nor does he reveal which ancient buildings in Rome inspired him. Instead he points to the great medieval tradition of stone cutting in France. How stone carving in the Middle Ages was prepared by design, is nowadays only known in a very fragmented way, mainly from the manual of Villard de Honnecourt, the pinnacle booklets of Matthäus Roritzer and Hans Schmuttermeyer, and Lorenz Lechler's *Instructions.*[12] How exactly de

12 Claude Lalba, Gilbert Martueritte, Jean Martin, "De la stéréotomie médiévale: La coupe des pierres chez Villard de Honnecourt," *Bulletin Monumental*, 145, 1987, p. 387-406. Ulrich Coenen, *Die spätgotischen Werkmeisterbücher in Deutschland*, München, Scaneg, 1990. Konrad Hecht, *Maß und Zahl in der gotischen Baukunst*, Hildesheim, Olms, 1979. Werner Müller, *Grundlagen gotischer Bautechnik, Grundlagen gotischer Bautechnik*, München, Deutscher Kunstverlag, 1990, p. 36-39, 121-139. Lon R. Shelby, "The geometrical knowledge of mediaeval master masons," in Lynn T. Courtenay, ed., *The engineering of medieval cathedrals*, Aldershot, Ashgate, 1997, p. 27-61. Jean-Marie Pérouse de Montclos, *L'architecture à la Française...*, op. cit., p. 79-102. Werner Müller, *Steinmetzgeometrie zwischen Spätgotik und Barock: eine Bautechnik auf dem Wege vom Handwerk zur Ingenieurwissenschaft*, Petersberg, Imhof, 2002. Joel Sakarovitch, *Épures d'architecture. De la coupe des pierres à la géométrie descriptive XVIe-XIXe siècles*, Basel/Boston/Berlin, Birkhäuser 1998, p. 97-183. Philippe Potié, "Le tracé d'épure, des carnets médiévaux aux traités de stéréotomie,"

L'Orme's instructions and illustrations on stereotomy were based on medieval models remains an open question. Most striking are the similarities with sixteenth-century sample books that follow the late Gothic tradition in central Europe, such as the book by Jacob Facht von Andernach (fig. 4), where quite similar geometrical designs for the construction of stereotomy are inserted, though they regard only the ribs of vaults instead of the de L'Orme's *employ of panneaux* (1593).
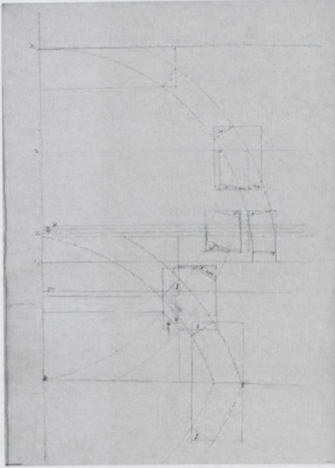

FIG. 4 – Jakob Facht von Andernach, sample booklet, Historisches Archiv der Stadt Köln.

FIG. 6 – Philibert de L'Orme, squinche of the Hôtel Bullioud in Lyon.

De L'Orme has to some extent imitated the stone carving that can be seen on countless Romanesque buildings, as is especially obvious in the cryptoportique of the Château d'Anet (fig. 5). That he was often oriented more toward the Romanesque than toward ancient architecture is shown by his interest in squinches; squinches are rare in antique buildings but common in Romanesque ones. A famous example of the use of squinches (or similar structures) built by de L'Orme is part of the Hôtel Bullioud in Lyon (fig. 6), which he created at the beginning of his career (from 1536). In the *Premier tome*, de L'Orme treats different kinds of squinches, including, in great detail, the squinch under the

oriel (now destroyed) of the Château d'Anet, which is obviously closer to the late Gothic than to the Romanesque style (f° 88-89).

FIG. 5 – Philibert de L'Orme, cryptoportique of the Château d'Anet.

The highest perfection of stereotomy is perhaps to be found in the spiral staircases with barrel vaults in cut stone, since each stone in the vault had to be individually twisted in three directions, in accordance with its position in the masonry bond: according to the helical turn, the sloping rise, and the arch of the barrel.[13] De L'Orme treats various forms of such spiral staircases; as a highlight of stereotomy he presents the Romanesque spiral staircase at the choir of the abbey church of

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13   Jean-Marie Pérouse de Montclos, *L'architecture à la Française...*, p. 143-146. Id., "La vis de Saint-Gilles et l'escalier suspendu dans l'architecture française du XVI° siècle," in André Chastel, Jean Guillaume, eds., *L'escalier dans l'architecture de la Renaissance*, Paris, Picard, 1985, p. 83-89. Andreas Hartmann-Virnich, "L'escalier en vis voûté et la construction romane: exemples rhodainiens," *Bulletin Monumental*, 154, n° 2, 1996, p. 113-128. Id., "La vis de Saint-Gilles," *Gard. Session / Congrès Archéologique de France. Société Française d'Archéologie*, 157, 1999, p. 293-299. Friedrich Mielke, *Handbuch der Treppenkunde*, Hannover, Schäfer, 1993, p. 230-232.

St. Gilles, which originated in the twelfth century (fig. 7–9).[14] It sur-
passes all other spiral staircases in the quality of the stone carving. It
is indeed a true marvel of stereotomy. The stones were particularly
difficult to carve here, because they are unusually large. The staircase
was damaged during the Wars of Religion and is preserved only up
to a height of about four meters. At the upper end of the preserved
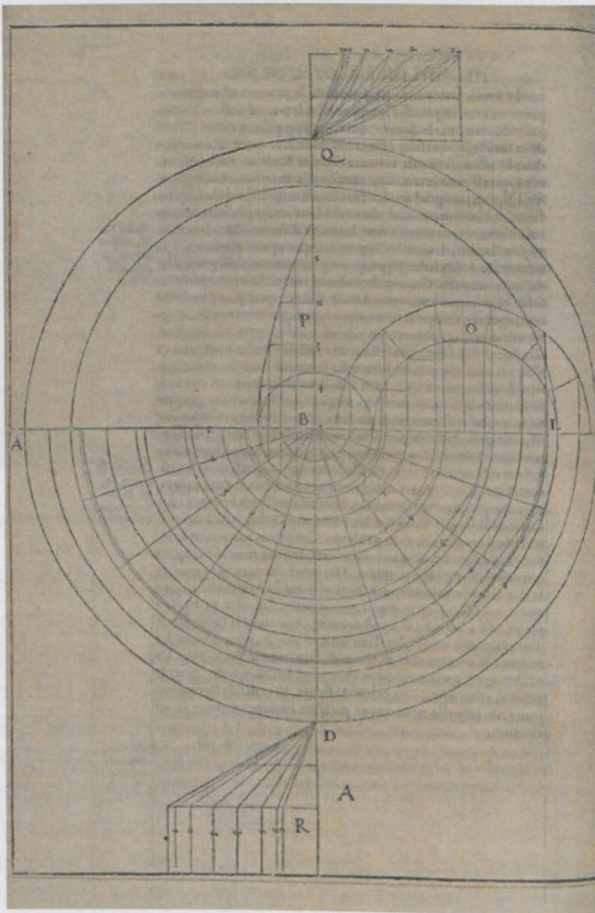structure, the shape of the stones is most clearly visible.

FIG. 7 – Philibert de L'Orme, *Le Premier tome de l'architecture*,
1567, spiral stair of the abbey church of St. Gilles.

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14   Andreas Hartmann-Virnich, *La vis de Saint-Gilles*, op. cit.

FIG. 8 – Spiral stair of the abbey church of St. Gilles, vault.
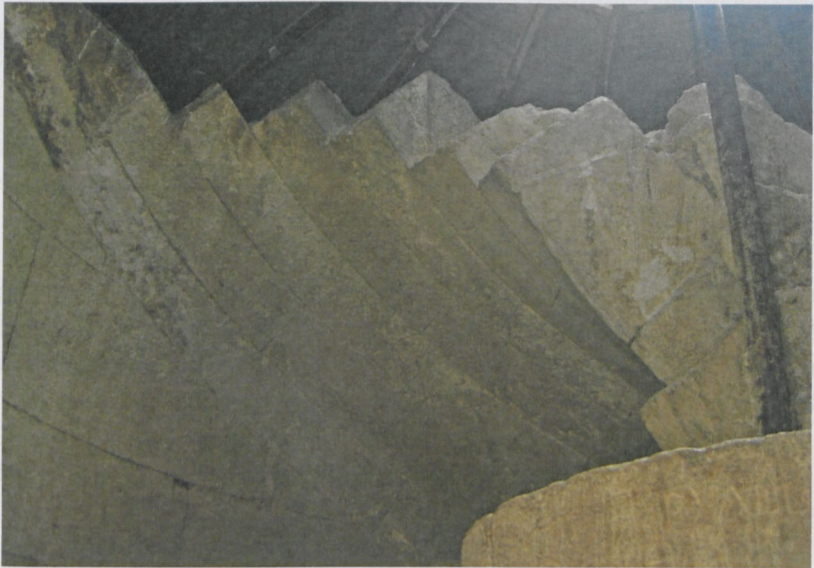

FIG. 9 – Spiral stair of the abbey church of St. Gilles, upper end.

The complicated art of stone carving in the spiral staircase of St. Gilles apparently already aroused admiration in the Middle Ages. Evidence of this can, in my opinion, be seen in the life size stone figure of a foreman (i.e. an architect in the modern sense) at Mainz Cathedral, which was created in the middle of the thirteenth century (fig. 10).[15] From today's perspective it may seem almost like the signature of an architect, but it was hardly meant so. Rather, it seems a metaphor for carrying a burden, perhaps to be seen in parallel with Christ, because he took up the sins of mankind. It is also conceivable that it represents one of those saints who built special buildings, such as the Apostle James. Either way, it is as inventive as the figure of the Vitruvian man which formerly stretched its limbs out on the vault edges in the west jube of Mainz Cathedral (before 1239), or as the figures of the founders in the west choir of Naumburg Minster with their lively exposure of individual characters. All these figures are related to each other in style and are stylistically similar to the sculptures of Reims Cathedral.

The figure of the foreman stood at the entrance to the east choir, on the south pillar of the triumphal arch, where a wooden rood screen seems to have been located. The figure had no counterpart on the opposite side of the triumphal arch. There may have been only a crucifixion group in the middle of the choir screen as was usual at that time. As the only decor in this prominent position, the figure of the foreman was obviously a prominent eye catcher. As signs of his position as designer of a construction and overseer of work, the foreman bears on his head the leather cap that is typical of his guild, fine clothes and a noble cape. He is deeply bent under the weight of his responsibilities and relies on a support that at first sight looks like a rod, but on a close inspection it is clearly recognisable as an elongated cut stone as a sign of his art. A spectator standing in the middle of the east choir would view the figure at an angle, with the stone he holds in the foreground (similar to the view shown in fig. 10). The stone is carefully elaborated and accurately displays the typical treatment of a curved stone, especially at the side that is directed towards the viewer in front of the middle

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15   Annegret Peschlow-Kondermann, *Rekonstruktion des Westlettners und der Ostchoranlage des 13. Jahrhunderts im Mainzer Dom*, Wiesbaden, Steiner, 1972, p. 10-15. Hartmut Krohm, ed., *Der Naumburger Meister. Bildhauer und Architekt im Europa der Kathedralen*, 2 vols., Petersberg, Imhof, 2011: I, p. 106-107, n° I.3.

of the choir. This side of the carved stone also reveals quite well that it is twisted in a manner similar to a stone in the vault of the spiral staircase of St. Gilles, even if its shape is somewhat more stretched in order to serve as a support for the foreman. The similarity is obvious in a demonstration drawing of a stone of the spiral staircase that was made by Andreas Hartmann-Virnich, independently of my comparison (fig. 11).[16] It is hard to think of another type of construction in which a stone of this shape could be used other than the vault of a spiral staircase.

FIG. 10 – Stone figure of a foreman from the triumphal arch of the east choir of Mainz Cathedral.
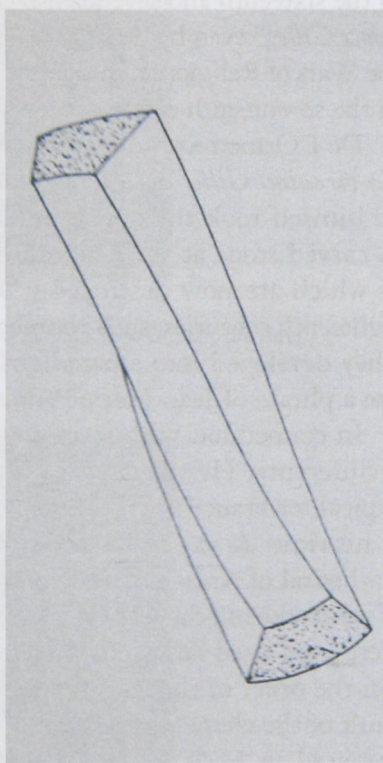
FIG. 11 – "Schéma d'un claveau". Demonstration drawing of a stone of the spiral stair of the abbey church of St. Gilles, made by Andreas Hartmann-Virnich, *"L'escalier en vis..."*, p. 119, fig. 6.

16   See the schematic illustration of the stones in the vault of the spiral of St. Gilles by Andreas Hartmann-Virnich, *La vis de Saint-Gilles*, op. cit., p. 119, fig. 6.

De L'Orme notes that this kind of stone cutting was still mastered in his time and was valued as a sign of the highest artistry (f° 123v°). The continued existence of this tradition in France is demonstrated by the spiral staircases in the Château of Montclus (thirteenth century), in the north transept of Beauvais Cathedral (1510–1530), and in the Hôtel d'Escoville in Caen, which was begun two years before de L'Orme returned from Italy to France (1534–1537). But the spiral staircase of St. Gilles became the paradigm of the genus of stone carving. Similar spiral staircases were in the sixteenth and seventeenth centuries generally referred to as "*la vis sainct Gilles*," even by de L'Orme.[17] Despite its partial destruction during the Wars of Religion, the staircase was still an attraction for stonemasons in the seventeenth century (their graffiti are visible on its wall today).

De L'Orme recommends the Romanesque vaults in the manner of "*la vis sainct Gilles*" as a model for contemporaneous stonemasons, and he himself took the opportunity to realise similarly complex vaults in carved stone at the Château de Madrid and at the Tuileries, both of which are now destroyed (f° 123v°). During the seventeenth and eighteenth centuries, such complex vaults became widespread in France. They developed into a paradigm for the "*architecture à la française*," to use a phrase of Jean-Marie Pérouse de Montclos.

In connection with stereotomy, de L'Orme even refers to Gothic architecture. He treats stellar vaults because they were particularly typical for France (f° 107r°-108v°) (fig. 12). As he says, they were called at his time "*la mode Françoise*." They had been invented already at the Cathedral of Amiens (from about 1264) and remained the usual kind of vaults during the late Gothic period up to the sixteenth century, and were even used later to complete unfinished Gothic vaults (fig. 13).[18] On the order of the king, de L'Orme himself closed (1548–1552) the vault of the chapel in the royal Château of Vincennes which had been initiated in 1379. In the context of stellar vaults de L'Orme judges sympathetisly on the Gothic. He admits that this kind of vaulting called "*la mode Françoise*" was no longer in use, but adds that it should not be denigrated, and even confesses that it possessed very good aspects (f° 107r°).

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17   Philibert de L'Orme, op. cit., f° 123v°–125r° (4.19).
18   Norbert Nussbaum, Sabine Lepsky, *Das gotische Gewölbe. Eine Geschichte seiner Form und Konstruktion*, Darmstadt, Wissenschaftliche Buchgesellschaft, 1999, p. 274-282.
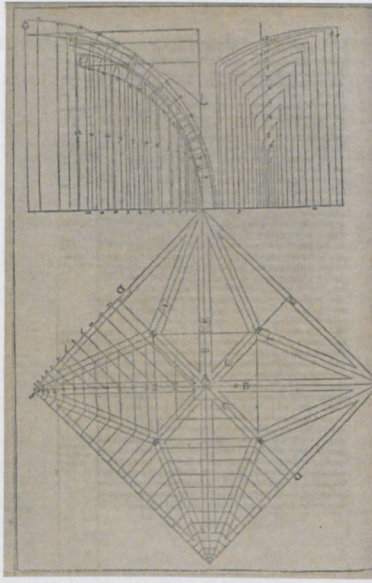
FIG. 12 – Philibert de L'Orme, *Le Premier tome de l'architecture*, 1567, stellar vault.
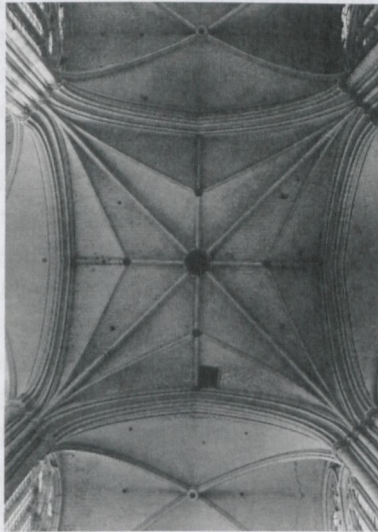

FIG. 13 – Cathedral of Amiens, stellar vault in the crossing.

De L'Orme expressly permits to integrate in the new kind of vaults an element that was typical of Gothic and medieval vaults ever since S. Ambrogio in Milan, namely the ribs (f° 112r° etc.). Ribs were furthermore also used in French architecture. This violates an iron rule of the Italian Renaissance: ribs normally are excluded there. Like so many practical guidelines, this rule is not included in the theoretical writings of the Italian Renaissance; however, building practice demonstrates its application most clearly. Like the Italians, de L'Orme refuses only the pointed arch categorically. Modern vaults should be formed by round arches and by spherical caps. At the turn of the sixteenth century the aversion to pointed arches had already spread in France. Since that time Gothic forms were often combined with round arches. Jean Pélerin (known as Viator), for instance, illustrates in his treatise on perspective (1505/1509) Notre-Dame in Paris and the Sainte-Chapelle with round arches instead of their actual pointed arches.

In the case of the spiral staircase of St. Gilles, the overall verdict of the Italian Renaissance vanguard on the Gothic or on the whole of medieval architecture is obviously beside the point. De L'Orme does not say that expressly, but treating the masterpiece of French masonry, he takes the opportunity to oppose the constant Italian polemic against the traditional French architecture with a clear critique of an Italian classic from the perspective of a French avant-gardist. In a downright schoolmasterly manner he criticises the spiral ramp of the Cortile del Belvedere (fig. 14) and its architect Bramante (f° 124v°). The Italians celebrated Bramante as "light and innovator of architecture" (Sebastiano Serlio). The spiral ramp of the Cortile del Belvedere was famous because it demonstrated Bramante's groundbreaking theoretical achievement to identify the orders of columns in a concise manner. It was even made out to be a renewal of antiquity. The spiral staircases in the alleged Porticus Pompeii were then considered its model.[19] However, these staircases are a fiction, an example of how the Italians during the Renaissance adapted antiquity to their own imagination. In reality, regardless of the preserved ruins, around 1520–1530 the spiral staircases were inserted in

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19   Jacopo Barozzi da Vignola, *Le due regole della prospettiva prattica con i comentarii del R. P. M. Egnatio Danti*, Roma, Francesco Zannetti, 1583, p. 143. Andrea Palladio, *I quattro libri dell'architettura*, Venetia, Dominico de' Franceschi, 1570, Libro I, p. 64.

the reconstruction drawings of the alleged Porticus Pompeii following the model of Bramante's spiral ramp.[20]
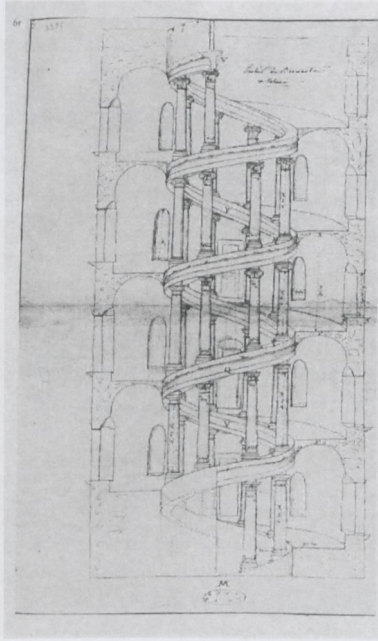

FIG. 14 – Spiral ramp of the Cortile del Belvedere, Vatican, Cod. Destailleur A, 74r, Berlin, Kunstbibliothek, OZ 109.

Firstly, de L'Orme praises Bramante's spiral ramp as "*fort belle & bien faict*". But then he goes on in a less favourable manner: if the architect had understood the rules of geometry, which he, de L'Orme, treats, he would have made the vault in cut stone instead of brick, and in case that he did not want to use cut stone, then at least he should have inserted transversal arches in cut stone at regular intervals under the bricks. This would have made it clear that Bramante understood the art of architecture. Then de L'Orme goes on to contrast the poor performance of Bramante with the vast extent of indigenous stone works in France and admonishes the masons once more to continue their native tradition.

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20   Hubertus Günther, "Porticus Pompeji. Zur archäologischen Erforschung eines antiken Baus in der Renaissance," *Zeitschrift für Kunstgeschichte*, 44, 1981, p. 358-398.

Fig. 15 – Spiral stair of the jube of St. Etienne-du-Mont in Paris.

In addition, de L'Orme claims that, if the *"artisan"* who made the spiral ramp of the Cortile del Belvedere – so disparagingly is Bramante addressed – would have understood what a real architect is expected to understand, then he would have adapted all the elements to the slope of the ramp: he would have chamfered the members of the columns accordingly, rather than to have made them horizontal as in a portico on level ground, and connected them with the upper-ramp entablature by means of oblique blocks. From the Italian standpoint, adapting the columns to the slope of the ramp would have seemed just the opposite. What de L'Orme is recommending actually has its roots in Gothic architecture, and it is diametrically opposed to the principles of Italian Renaissance architecture: in essence, two paradigmatic standards of design contradict one another. In the French Renaissance, even before the *Premier tome* was published, the columns of spiral staircases were

usually adapted to the ascending slope – for instance, at the jube of the cathedral of Limoges (1533–1534) or that of St. Etienne-du-Mont in Paris (about 1530) (fig. 15).[21] In the Italian Renaissance, by contrast, the columns were not adjusted, not even after de L'Orme's scolding.[22] The reason for this difference becomes obvious when we look at the French spiral staircases from the early Renaissance that still include Gothic reminiscences, such as those at Blois (from 1515) and, more consistently, at Châteaudun (begun before 1513).[23] There the members of the solide columns or half-columns on the perimeter wall surrounding the spiral staircase are aligned horizontally, in accordance with the recently acquired Italian model, while the members of corresponding slim columns in the central spindle are slanted in according with the ascending slope. While the capitals and bases of these slim columns are assimilated to the forms of the Italian Renaissance, their shafts, if one can even call them that, are as thin as tracery. The two spiral stairs demonstrate that the adaptation of the columns to the structure of the building goes together with Gothic forms. In the Italian Renaissance the column with its binding to a specific canon of forms and proportions constitutes an individual organism, which can hardly be adapted completely for a wall. In France, by contrast, the idea of architectural articulation was based – apparently even after the adoption of antique forms – on the Gothic vaulting shafts, which have no autonomy, but are intended to serve the construction by underlining its disposition.

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21 Jean-Marie Pérouse de Montclos, *L'architecture à la Française...*, op. cit., p. 142-143, 240. For the spirals of French late Gothic or early Renaissance, see André Chastel, Jean Guillaume, *L'escalier...*, op. cit.; Monique Chatenet, *Chambord*, Paris, Monum-Éditions du Patrimoine, 2001, p. 89-93.

22 Jean Marie Pérouse de Montclos, *L'architecture à la Française...*, op. cit., p. 70-71; Volker Hofmann, "Philibert Delorme und das Schloß von Anet," *Architectura*, 2, 1973, p. 131-170 (see p. 140, note 14) indicates that exceptionally on an ascending ancient portico occur capitals which are adapted to the slope: the sanctuary of Fortuna in Palestrina. See also Furio Fasolo, Giorgio Gullini, eds., *Il santuario della Fortuna Primigenia a Palestrina*, Roma, L'Erma, 1953; Pietro Romanelli, *Palestrina*, Cava dei Tirreni/Napoli, Di Mauro editore, 1967. Helga von Heintze, "Das Heiligtum der Fortuna Primigenia in Präneste, dem heutigen Palestrina," *Gymnasium*, 63, 1956, p. 529-547: *"eine Lösung, die jedem Gefühl für Statik und einem an griechischer Baukunst geschulten Auge ins Gesicht schlägt"*. Nothing suggests that elements of the ascending portico were known in the Renaissance. In any case, in Italy they would have been ignored because they did not conform to the preconceived ideas of antiquity. The avant-gardists faded out even far more conspicuous elements of antiquity, if they did not fit into their concepts.

23 André Chastel, Jean Guillaume, *L'escalier...*, op. cit., p. 229 (fig. 34), 263 (fig. 142).

Even before de L'Orme, many avant-garde buildings had associated Italian Renaissance elements with the traditional French style. A well-known example for this is the parish church of St. Eustache in Paris, which was begun in 1532 at the instigation of Francis I, shortly before de L'Orme's stay in Rome.[24] Here tradition constitutes not only a factor that influences the reception of the Renaissance, but it remains determinant for the whole structure. The entire disposition, the extremely steep naves, the stellar vaults along the model of Amiens, and the tracery of the windows, the flying buttresses and the steep roof are all Gothic. The elements of the Renaissance are limited to round arches and decorative columns that are still untouched by the strict rules of the High Renaissance: they are only superficially imposed over the Gothic structure, like a coat, and actually take the function of vaulting shafts.

Significantly closer to de L'Orme's fusion of the old with the new, is a French church which was begun some thirty years earlier than St. Eustache (1502) in a centre of the Italian Renaissance: the SS. Trinità dei Monti, on top of the Spanish Steps in Rome. Its construction was largely completed when de L'Orme arrived in Rome. The church belonged to the French branch of the mendicant order of the Minimes, which was particularly widespread in France. The kings of France financed its construction, and their *chargés d'affaires* in Rome guided its construction.

The facade of the church, which was built later, is famous because of its prominent position on the hill, but its interior architecture has hitherto attracted little attention. This is probably due to the fact that key parts of it, namely the choir and the vaults of the nave, were altered in the seventeenth and eighteenth centuries, so that the present interior looks, at first sight, like one of the typical Baroque churches in Rome. However, there is enough evidence to get an idea of the original appearance of the interior, i.e. mainly some remains of the old vaults, and several descriptions of the building that predate the alterations. Based on these testimonies the original state of the interior can be reconstructed.[25] The illustration of this reconstruc-

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24   Michael Hesse, op. cit., p. 25-33. Anne-Marie Sankovitch, "A Reconsideration of French Renaissance Church architecture," in Jean Guillaume, ed., *L'Église dans l'Architecture de la Renaissance*, Paris, Picard, 1995, p. 161-180. Henri Zerner, op. cit., p. 27-28.

25   For the reconstruction and art-historical classification of the original building, see Hubertus Günther, "Demonstration avantgardistischer Architektur 'à la mode françoise' an der SS. Trinità dei Monti in Rom," in Julian Jachmann, Astrid Lang, eds., *Aufmaß und Diskurs*

tion (fig. 16) is meant to give an idea of the original appearance of the interior – it is not precise in all details. The disposition equals that of typical Italian mendicant churches, the nave is aligned with the balanced proportions that are typical for the Italian Renaissance. The walls of the nave and transept are articulated in the style that was, at the time of their planning, leading progress in Italy; the direct model seems to be the Franciscan church of S. Salvatore al Monte in Florence, finished by Cronaca in 1500, two years before the construction of the SS. Trinità begun. On the other hand, the choir and the entire zone of the vaults were designed in the Gothic style: the windows in these areas, in contrast to the round shaped windows of the side chapels, had pointed arches and were filled with tracery. The room was covered with stellar vaults in the way that is typical of the French Gothic. At the turn of 1520–1521, the Abbot of Clairvaux, Dom Edme de Saulieu, visited the SS. Trinità dei Monti. One of his traveling companions noted, "*l'eglise de la Trinite est nouveau edifiée et faicte selon la mode francoise et semée de fleurs de lis, et en plusieurs lieux, les armes de France... La cause estoit quil y avoit ung convent de Minimes tous François*," and he repeats this assessment again somewhat later.[26] As the Cistercian monks were otherwise hardly interested in architecture, it seems likely that they had learned from their hosts that the church was built "*selon la mode francoise*". Apparently, the SS. Trinità dei Monti was intended to display, in the centre of Christendom, the French way of building: in its original state, the interior of the church demonstrated that the most modern version of the new *all'antica* style was adopted, while at the same time the old French tradition of vaulting was continued. In spite of all the differences in detail (mainly the use of pointed arches), this exhibition of the modern French style corresponds to the conjunction of the new and the old as taught by de L'Orme in the *Premier tome*. The awareness that the large deposits

– *Festschrift für Norbert Nußbaum*, Berlin, Lukas Verlag, 2012, p. 187-211; Id., "Rom um 1500: Ausländische Nationen stellen ihre Architektur aus – gotische Lokaltraditionen und Renaissance," in Uwe Kiessler, ed., *Architektur im Museum 1977/2012: Eine Festschrift für Winfried Nerdinger*, München, Detail, 2012, p. 95-107.

26 *Relation d'un voyage a Rome, commencé le XXIII du moi d'aout 1520, et terminé le XIV du mois d'Avril 1521, par Révérend père en Dieu Monseigneur Dom Edme, XLIe abbé de Clairvaux*, Troyes, Harmand (Mémoires de la Société d'Agriculture, des Siences, Arts et Belles-Lettres du Département de l'Aube, Ser. 2, 2, 15), 1849-1850, p. 203, 304.

of limestone formed the basis for the development of the high art of
stone cutting in France also had an impact on the construction of the
SS. Trinità dei Monti. Cardinal Briçonnet, who led the construction
initially, had the Gothic elements of the articulation (the ribs and
tracery) carved in France from French limestone and then transported
all the way to Rome. This unusual circumstance attracted so much
attention that Francesco Albertini specifically referred to it in his
guidebook to Rome published in 1510.[27]

FIG. 16 – SS. Trinità dei Monti, Rome, reconstruction
of the original state by Hubertus Günther, visualised by Benjamin Zuber.

De L'Orme's return to Romanesque stone carving may be placed
within the framework of the *renovatio* of Romanesque instead of antique
architecture during the Renaissance. Prominent examples of this in Italy
include the Baptistery in Florence, which was regarded as a Roman temple
of Mars, or the church of San Giacomo di Rialto, which was considered

27   Francesco Albertini, *Opusculum de mirabilibus novae & veteris urbis Romae*, Roma, Mazochius,
     1510, f° X 2v°.

the oldest building of Venice (founded in 421). More examples can be found in Central Europe and other places.[28]

FIG. 17 – Door of the Vladislav Hall, Prague Hradschin.

Also in Central Europe the typical local vaults were combined with the orders of columns in the modern Italian style, though in this case the local vaults were not conservative cross vaults or stellar vaults as in France, but inventive vault formations which emerged during the late Gothic period and shaped new spatial forms.[29] Early examples are the Vladislav Hall at Prague Castle (Benedikt Ried, 1490/93-1502), the

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28 Gerhard Straehle, *Die Marstempelthese*, München, Straehle, 2001. Hubertus Günther, "Die Vorstellungen vom griechischen Tempel und der Beginn der Renaissance in der Venezianischen Architektur," in Paul von Naredi-Rainer, ed., *Imitatio: Von der Produktivität künstlerischer Anspielungen und Missverständnisse*, Berlin, Reimer, 2001, p. 104-143. Stephan Hoppe, *Die imaginierte Antike. Bild- und Baukonstruktionen architektonischer Vergangenheit im Zeitalter Jan van Eycks und Albrecht Dürers*, Habilitationsschrift, Universität zu Köln, 2009.

29 Hubertus Günther, "Die ersten Schritte in die Neuzeit. Gedanken zum Beginn der Renaissance nördlich der Alpen," in Norbert Nussbaum *et al.*, eds., *Wege zur Renaissance. Beobachtungen zu den Anfängen neuzeitlicher Kunstauffassung im Rheinland und in den Nachbargebieten um 1500*, Köln, SH-Verlag, 2003, p. 30-87.

Fugger Chapel in S. Anna in Augsburg (1509-1511) and, from the time of de L'Orme, the organ tribune in the St. Vitus Cathedral of Prague (Bonifaz Wolmut, 1557-1561). In the case of the Vladislav Hall, with its particularly complex vaulting, it is even obvious from where the elements of the articulation in the Italian Renaissance style were taken: namely from the Ducal Palace of Urbino. The frame in the Renaissance style of a door of the Vladislav Hall is accompanied by attic columns which are rotated diagonally as the helical pillars spread mainly in late gothic architecture, but also similar to the stone held by the foreman in Mainz Cathedral which evokes the memory of the stone carving in the spiral staircase of St. Gilles (fig. 17).

De L'Orme's dissemination of medieval building rules and, perhaps, "secrets from the masons' lodge" in print was preceded by the late Gothic masons' lodge books in Germany. In the *Underweysung der messung* (1525), Albrecht Dürer associates antique elements with Gothic ones on the pragmatic grounds that "not one thing is completely good, but many things are good, when one really knows how to make them. Therefore one has to seek for it, as the famous Vitruvius and others have sought and found good things. But they do not hinder, that others might also find good things, especially in the case of things, where it is not possible to proof that they are made in the best way."[30] De L'Orme adopts this line of argument to justify his national variant of the classical orders: *"Qu'est permis à l'exemple des anciens, d'inventer & fair nouvelles colomnes: ainsi que nous avons en quelques faict Unes, appellées colomnes Françoises"* (f° 218v°).

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30 Albrecht Dürer, *Underweysung der messung…*, Nuremberg, Hyeronimus Andreae, 1525, f° G 4r°.