

Contested Stones: Monumental Architecture and the Representation of Power in the High Middle Ages

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February 2012

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This work has benefited enormously from the research assistance of Carol Huben, from collaborations with Paul Hohenberg and Caroline Bruzelius on other aspects of the project, and from numerous conversations with colleagues at the EHA, the SSHA, the Dept. of Art, Art History and Visual Studies at Duke University, the University of Amsterdam, Utrecht University, and the Rutgers Economic History Seminar.

Of the many campaigns brought to fruition by the economic prosperity of the High Middle Ages, few have left evidence as perdurable or awe-inspiring as those to build cathedrals, abbeys and important parish churches, not to mention castles and other secular buildings, in the Gothic style. Between the 12th and 15th centuries beginning in the Paris Basin and spreading outwards a massive public and private investment was made in these soaring monuments to both human ingenuity and the glory of God. Europeans had, of course, a long tradition of building in stone, which harkened back to the models of classical antiquity. This tradition manifested itself in the transalpine north, first in the walls and terraces of the agricultural landscape, subsequently in the plethora of monasteries that sprang up in both woods and plains, and eventually in the monumental architecture of the urban church, court, and commune. This paper is part of a larger project to situate the Gothic achievement in its full economic context, both to identify the mechanisms whereby a largely subsistence economy sustained building on the scale that it did, as well as to investigate the financial management strategies of the individuals and institutions responsible for bringing specific building projects to a successful conclusion. To do so, it draws upon the narrative histories, the extant managerial accounts, and the remaining material evidence of numerous ecclesiastical building campaigns.

My focus here, however, is narrower. I want to explore the resource ramifications of elite political struggles particularly as they were manifested in monumental architectural building programs of varying degrees of success. Most obviously I will consider the contested relationships between lay and clerical lords, but of equal interest are the more internecine struggles between so-called 'secular' ecclesiastical rulers (i.e. bishops and the canons of

collegiate churches) and their monastic brethren on one side, and between royal families and their barons on the other. The building movement we know as Gothic was expensive (much more so than building in wood, or even than using the earlier stone techniques broadly associated with the Romanesque style). Gothic structures, on account of their potentially great size and extensive ornamentation, demanded a tremendous quantity of natural resources (high quality limestone and lots of timber, preferably from near-by or only a water route away). The finishing and decoration of these buildings required access to yet more resources, such as lead for roofs, marble or other semi-precious stone for embellishment, and gold and silver for interior furniture, especially for liturgical apparatus and for the shrines of the many saints and their relics. Indeed, it would not be far-fetched to think of relics themselves as a kind of natural resource as they were in limited supply, at least the oldest or best of them, and their ownership was often hotly contested. Control over these various types of resources is thus quite visible in the structures that actually got built, many of which are still standing today (alas, often with very limited remainders from what had once been their elaborate medieval display of decoration and furniture).

The High Medieval Building Boom:

It remains an intriguing question how a medieval building boom in stone, and of unprecedented proportions, flourished in the context of what economic historians have always considered to be a precarious subsistence economy. Where did the resources for such building come from and how were they marshaled for this specific purpose? But these questions jump ahead of our story. We need to be convinced first of the fact of the high medieval building boom. It is not enough to just conjure up the image of a handful of famous Gothic cathedrals or contemporary castles to impress by the most exceptional examples? After all, Babylon had its hanging gardens, Egypt its pyramids, and every ancient agricultural empire worth its salt its magnificent temples. We know that if agricultural surpluses, however miniscule they may be at the individual level, are aggregated over a large enough subject population, they can yield some remarkable feats of cultural production. Indeed, the most common gloss of economic historians on the building of medieval ecclesiastical monuments (that is when they bother to think about them at all) is to dismiss them as just another manifestation of the age-old tendency of a narrow band of elites to exploit the meager livings of the plentiful poor for the nefarious purposes of their own enjoyment.

My project works from the premise that the medieval building boom was too extensive and too pervasive to be explained solely as the aggregated spoils of exploitation. This was, of course, a society without slavery, whatever its gross inequalities may have been. All of the other examples we have of concentrated building programs in the context of ancient agricultural societies have been of empires, worked by slave systems that typically operated on a massive scale. The medieval European case is especially interesting precisely because it emerged in a decidedly non-imperial context. Indeed, Europe of the 10th through the 15th centuries was characterized by a highly fractured political landscape. Even the Catholic Church, so often presumed in retrospect to have been a monolithic institution, was far from it; its internal struggles were every bit as vicious and fractious as those between lay feudatories. At a minimum every church building project had to find its inspiration, and financing, in the immediate community of its functionaries, whether they were ecclesiastic or monastic, just as

every member of the nobility or even the royal household was responsible for building their own castles and palaces.

So what about this alleged building boom? What can we know about it that is not simply impressionistic? I begin with the voice of a contemporary. In the year 1003, Raoul Glaber, a monk from the reform Abbey of Cluny had this to say in his *Historia*:

As the third year that followed the year one thousand drew near, there was to be seen over almost all the earth, but especially in Italy and in Gaul, great renewal of church buildings; each Christian community was driven by a spirit of rivalry to have a more glorious church than the others. It was as if the world had shaken itself, and, casting off its old garments, had dressed itself again in every part in a white robe of churches.

Not surprisingly Brother Raoul expresses his amazement in terms of the great many churches under construction. But this was not the only locus of building effort, and indeed, perhaps not even the most significant. (Unfortunately it is very difficult to assess this with proper perspective as the survival rate of lay and religious buildings was so very different over time, a point to which I will return below.)

Broadly speaking there were four types of building in stone that merit our attention. The first is easy to overlook entirely, and that was the true rural building effort, comprised of walls, hedges, terraced vineyards, minor fortifications, and roads built or lined with stone. For these there is simply no systematic survey that would allow us to document either the absolute amount of such stone-work, nor the increase in the same at the advent of the new millennium. The second type, by contrast, is extremely well documented. Thanks to the painstaking work of countless local historians, and the collating efforts of Eltjo Buringh and Jan Luiten van Zanden, we now have a comprehensive accounting of the establishment of new monastic houses for all of Europe from the inception of the monastic movement in the 6th century until the end of the Middle Ages. What is readily apparent from the numbers presented in Figure 1 is that there was an explosive growth in the number of monasteries at the start of the period under consideration here, more or less doubling in number over the 11th century and then growing by another 63% across the 12th century. While growth ceased by the 13th century, the absolute number of monasteries remained at an astonishingly high level with only modest decreases in the late Middle Ages. Each of these monastic establishments, except for the very poorest among them, would have expected to build at a minimum an abbey church and cloister in stone, and for most of them there would also have been a great many additional buildings including dormitories, kitchen and refectory, chapter house, and in the grander communities separate, sometimes even palatial, accommodations for the Abbot and his household.

The third category of building was occasioned by the rapid expansion in urban life that has been so well documented for this period. Not only did urban governments commission public buildings in which they could meet to conduct business, regulate the economic and political affairs of the community, and put up defense against enemies (so this list must include not just burger halls, but also weigh houses, mints, granaries, gate houses, walls and other fortifications), but private men of wealth and standing did so as well. Cities both large and small participated in this process, but none more so than Paris and London/Westminster where the apparatus of an increasingly focused royal power was manifested in a plethora of buildings ranging from the spectacular to the bureaucratically mundane. Moreover, in keeping with a

status befitting an urban presence, many town dwellers were eager to have their local parish church built of stone and not the more typical wood still found in the small churches that dotted the countryside. In some cases even, the urban parish church came to supersede in either size or grandeur the bishop's church (i.e. the cathedral) that may have resided nearby in the same city.

FOOTNOTE from Kraus

Despite these rare occasions however, of parish preeminence it was diocesan church building, our fourth category of interest, that was typically the most spectacular example of them all. Over the course of the High Middle Ages, bishops gradually became more important than their monastic equivalents, the abbots. More and more the secular clergy assumed the headship of the most important clerical offices and were tapped for the most prestigious royal appointments. In England, where the anomalous situation of Cathedral Sees affiliated with monastic houses persisted from the Anglo-Saxon period, bishops worked increasingly hard at separating their seats of power from monastic entanglements, successfully for example in the case of the transfers of the Bishop of Coventry to Litchfield and from Bath/Glastonbury to Wells (since 1245 the home of the so-called Bishop of Bath and Wells). This effort proved to be spectacularly unsuccessful at Canterbury, where more than one bishop tried in vain to establish a secular chapter of canons just outside the urban limits in Hackington.¹ (This failure was almost certainly a reflection of the peculiar dynamic set in place by the murder of the Archbishop Thomas Becket in 1170 in the cathedral itself, and the subsequent establishment of the most important English shrine on its premises.) Not surprisingly given the broader trend however, the most prominent examples of the new Gothic style (except for the very earliest, the Abbey Church at St. Denis) are all to be found in buildings of the urban secular clergy.

Nonetheless, before turning our attention to Gothic structures specifically, it is worth pausing to consider the total presence of churches of all types on the medieval landscape. Jean Gimpel estimates that by the High Middle Ages in a then almost fully converted Christian Europe there was a church or chapel for every 200 inhabitants. For example, Norwich, Lincoln and York, all cities of less than 10,000 inhabitants, boasted 50, 49 and 41 churches and chapels respectively. The medieval Diocese of Chartres had 911 parish churches, not counting those in the city itself, in addition to the Bishop's seat in the cathedral. Consider that between 1050 and 1350 "several million tons of stone were quarried in France for the building of 80 cathedrals, five hundred large churches and some tens of thousands of parish churches. More stone was excavated in France during these three centuries than at any time in ancient Egypt, although the volume of the Great Pyramid alone is 2.5 million cubic meters." (Gimpel, 1980, p.7).

And France was not so exceptional in this regard as is often assumed. Eric Fernie argues that in the first hundred years after the Norman Conquest, triggering as it did a massive rebuilding of Anglo-Saxon churches and a new (for the English anyway) architectural expression in the form of stone castles and keeps, the level of quarrying in France "was probably approached if not exceeded (Fernie, 2000, p. 19)." He explains this phenomenon as follows:

The sheer volume of construction in the first generation after the Conquest must have turned the country into a vast building site, with almost every city, town, and village affected. The Conquest brought about fundamental changes in the urban landscape, as the castle, large church, and new borough became the signs of a Norman order, disrupting existing street patterns and removing houses on such a

¹ Some scholars speculate that Archbishop Thomas Becket had this as one of his goals, for which he would have incurred the enmity of the monks of Christ Church. See Draper, 2006: pp. 14 and

scale that in some instances castle and church together covered between a quarter and a half of the area of the previous Saxon town, as was the case at Lincoln, Norwich, and Bath (Ferne, 2000: p. 20).

To revert our focus back to the building in the style that came to be known as Gothic we need only look to its earliest manifestations in the first half of the 12th century in the Paris Basin, a region noted for its very particular limestone base of *calcaire*. This region is bounded by Laon and Reims on the northeast, Amiens in the northwest, and Chartres in the southwest with Paris situated towards the west. John James, an Australian architect turned medieval historian, estimates that approximately ninety percent of Early Gothic churches and foundations can be found within this zone of less than 28,000 sq. km. (an area somewhat larger than Vermont), and that the majority of them were built with this high quality locally provisioned stone. Furthermore, in his comprehensive survey of the Paris Basin (conducted over many years on the ground rather than in the historical literature) he identifies nearly 1,400 Gothic structures which date to the 12th and 13th centuries, of which approximately half constitute significant buildings, as indicated by both size and quality of ornamentation. The other half he designates as less interesting on account of either their smaller size or rougher build. All together, however, this represents about three times as many Gothic structures in this region as the number previously identified by art historians (James, 1997, pp. 41-2). Of necessity then, such buildings represented a sizable footprint on the built landscape, and by extension, a formidable claimant on available resources. (See a reproduction of his map of the greater Paris Basin reproduced in Figure 2.)

Beginning sometime around 1000 CE, but more strongly in the 12th century, with invasions from outside pretty much in the past, the revival of commerce and towns began to change the relative importance of the rural (manor and monastery) and the urban (commerce, court and episcopacy) spheres in western Europe (Scott 2003, Chapter 4, reprising arguments made by Georges Duby). Kings gradually gained real authority over their nominally vassal nobles, while bishops exercised religious and sometimes temporal authority more intensively. It was in this context that the cathedral, or bishop's church, acquired both greater importance and potentially greater resources. During this time, many sees witnessed the building of two (or more) cathedrals, successively in the Roman (Romanesque) and the new or Gothic style. It was the rare bishopric that still had a Carolingian (8th or 9th c.) basilica to tear down to make way directly for the Gothic, although Laon and Cologne offer two prominent, but isolated, examples (Wilson, 1990, p. 54). In any event, it is important to remember that the Gothic cathedrals were for the most part reconstructions of existing structures, sometimes already fairly large themselves.

Likewise in England the complete erasure of Anglo-Saxon church architecture in the relatively quick span of roughly fifty years following the Norman Conquest in 1066 was not simply a project to accommodate larger numbers of worshippers. Archeological excavations at the cathedrals of Winchester, Canterbury and what was likely to have been Worcester all reveal that the Anglo-Saxon fabric had been "large by any standard" (Ferne, 2000, p. 24). Rebuilding seems much more likely to have been the result of a determined effort to stamp out all visual memory of the Anglo-Saxon church. For concomitant with the herculean construction effort was the simultaneous diminution in the status of the many Anglo-Saxon saints, few of whom had reputations great enough to withstand the assault. The only prominent examples of older cultish practice that managed to persist across the whole Middle Ages is that of St. Cuthbert of Lindisfarne centered on the Cathedral of Durham in the far north, and that of St. Edward the

Confessor, last Anglo-Saxon King of England, and strongly associated with the royal burial site of Westminster Abbey. However, even in this latter case Edward hardly presented a real challenge to the new Norman overlords as he had spent a quarter of a century during a Viking-induced exile living in Normandy as a boy and young man under the care of his uncle the Duke. Furthermore, his renovation work at Westminster Abbey begun already in the middle decades of the 11th c. adopted the then-current Norman style of Romanesque.

To be sure, the specific moment of reconstruction of a major abbey or cathedral was often dictated by damage from fires (or collapse) of the existing fabric of the older church on the site in question. Likewise, fires and collapse were also among a number of factors that might be responsible for slow progress and interruptions in construction once underway. A list of even just the most prominent cathedral projects precipitated by fire (or in some cases multiple fires) is already quite long: Amiens – 1188 and 1218; Auxerre – 1188 and 1210; Beauvais – 1188 and 1225; Canterbury – 1067 and 1174; Chartres – 1031, 1134, 1188 and 1194; Chichster – 1114; Evreux – 1119; Glouchester – 1102; Laon – 1112; Le Mans – 1134; Lincoln – 1141; Lisieux – 1136; Paris – 1235-40; Provins – 1188; Regensburg – 1273; Reims – 1210; Rochester – 1138 and 1177; Rouen – 1200; Strasbourg – 1176; Tours – 1188; and Troyes – 1188. The astute reader will notice that in the drought afflicted year of 1188 there were fires in multiple cities, a fact which Murray also attributes to suspicion of opportunistic arson (Murray, 1989, p. 33). But even if criminal intent was not involved and true necessity demanded that construction begin anew, fires were often just the immediate excuse to carry out the implementation of designs that seem to have been ready in the wings as it were.

Before tackling the subject of how and why the Gothic cathedrals were built, it is helpful to look at them briefly from the perspective of a modern-day visitor, more often than not a tourist rather than a pilgrim or worshiper, and to contrast this impression with what a contemporary might have apprehended. Both would view these structures as imposing in their size, towering over a cityscape that even today may still have few or no taller structures standing nearby. Almost everyone responds to the major gothic edifices as esthetically remarkable, and spiritually moving. Today's visitor will usually find the building sparse and monochrome, and quiet for much of the time. In medieval times, by contrast, there was much more frequent religious activity, a larger and almost certainly noisier lay presence, and a great deal of ornament and polychrome decoration. Whereas we contemplate these venerable relics of a distant past with awe, contemporaries often experienced them amid the noise and bustle of construction. The persistence of these cathedrals is indeed remarkable when one considers the ravages of time and weather, the dangers of war and fire, and the attacks not only on the urban fabric but specifically on the cathedrals by schismatics or unbelievers, or (sometimes worst of all) by those who wanted to bring the building up to date in the baroque or classical style (Gimpel 1983, pp. 22-23).

Today's onlooker is apt to draw inferences about how this all came to be that are more imagined (and presumably comforting) than historically accurate. With their massive scale and yet lightness, the gothic cathedrals testify to a period, not all that long in duration, of great creativity in Europe. Through periods of famine and plague, war and religious strife, poverty and oppression, and with what we see as only a primitive technology and a fragile economy, these remarkable structures were built. Surely, we may be tempted to think, under such circumstances it must have required a great burst of faith, and the union of all social groups, to bring this about. One can just imagine the cleric, the nobleman, the merchant, and the serf side by side, putting their shoulder to the wheel to lift great blocks of stone and freely bringing their treasures, meager or lavish, so that the work might not stop. Indeed, the miraculous accounts written by some

clerical building sponsors, most notably at St. Denis and Chartres, worked hard to promote just such an image. Yet, that is certainly not how it happened. Philip Ball reminds us to “be wary of the romantic idea that the cathedral ‘belonged’ to the citizens” (Ball, 2008, p. 66); and Scott chronicles the “civic unrest, rioting, violence, and bloodshed” associated with virtually every major historical study of these buildings (Scott, 2003, p. 97). The urban riots at Beauvais, Laon, Reims, and Troyes have all been well documented by Murray and others, while Jane Williams’ study of the windows at Chartres “reveals the deep antagonisms that existed between the various social groups there: “bishop against chapter, bishop and canons against local counts and countesses, and all of these against local tradesmen and peasants” (as cited in Scott, 2003, p. 99).

Careful study of the impact of political struggle on the construction and financing of cathedrals in the medieval West leads to several conclusions, though some of them must remain at this point somewhat speculative. The preponderance of the evidence, however, suggests that access to natural resources, particularly those such as the timbers found only in old-growth forests, precious stones, or highest quality building stone, all of which conferred prestige on those who could command their use in building projects, was contested. As such, we can read the presence or absence of such materials in any given building as evidence of the political successes and failures of those responsible for their construction.

-The cathedral was planned and built as a fitting frame for the ritual and display that formed the core of religious practice, including as sites of pilgrimage where appropriate relics were to be found. The building was not itself of first importance; that is, it was not the decontextualized “work of art” that we understand it to be today.

-The ritual of the cathedral belonged primarily to the bishop in conjunction with the canons. The people, nobles and commoners alike, also participated in ritual display, but theirs was more likely to be centered around a parish church or a monastic endowment, and eventually, for prominent families especially, in chapels located around the periphery of the bishop’s cathedral. This separation was explicitly marked in the cathedral itself by the placement of non-permeable choir screens separating the congregation in the nave from the clergy at the altar. These choir screens were elaborately decorated, and often the more so on the inside that would never be visible to the lay public.

-Actual construction was carried out by people paid to do so, notably by itinerant skilled craftsmen (though the unskilled labor would be local) working in groups under the direction of a master mason. A few of these masons are known by name, and many were likely associated with particular stone quarries. Indeed, the skilled men and their material were more intimately connected than the neo-classical economists’ distinctly separate categories of Labor and Capital would suggest.

-Building a cathedral, even in those periods when there was real impetus behind the work, was never the sole or even the primary concern of the promoters. It competed with building other parts of the holy city next to it (Bishop’s palace, cloister, chapter house, etc.), with building churches and monasteries elsewhere in the city, with other municipal projects (bridges, towers and walls), and with the secular struggles of bishops, chapters, and monasteries among themselves, or against kings, nobles, and communes, for power and advantage. The process was

also impacted by major outside distractions, such as wars, crusades, and outbreaks of epidemic disease.

-Funding was always a difficult issue, often to the point of bringing work to a halt for either shorter or longer periods, and in the worst cases even centuries. Many resources that might have gone toward the building were instead devoted to ornamentation and to ritual, such as elaborate coronations, funerals and processions, or to the ongoing commemoration of the dead in chapels within the structure. Work at Reims was slowed on more than one occasion by the great expense of crowning a new king. For example, Louis VIII was crowned in 1223 in a lavish ceremony paid for in full by the citizens of the city. Following an early death, his young son Louis IX (twelve at the time) was crowned in what was described by the chroniclers as a “modest ceremony” just three short years later. Because of the youth of the new king, and the fact that the city was still recovering from the expense of the previous coronation, a scant 9,053 *livres Parisis* were devoted to the ceremony in 1226. The same chronicler estimated the expenditures for the first decade (beginning some time after the fire of 1210) of rebuilding at Reims Cathedral to have been 10,000 *livres Parisis*, suggesting that even a decidedly scaled back royal celebration was equivalent to a full year of building on a major monument in the latest style (Clark, 2006, p. 99). Similarly, the cathedral at York was severely compromised by the payments which were required to be sent to Rome on the accession of each new Archbishop, a burden magnified by the conflict with Canterbury over primacy in England (Kraus, 1979, p. 135). On the other hand, the idea has been put forward that lavish church ornamentation and the acquisition of particularly efficacious, and therefore rare, saint’s relics tended to attract more donations (Lopez 1952, p. 438, citing C. R. Cheney).

-The secular power and property of churchmen, including bishops, the cathedral chapter, and individual canons had a mixed impact on the process. On the one hand, it provided revenue in the form of rents, feudal dues, tithes, etc. that could fund construction; on the other, it often pitted the clerics against the local population and involved the various actors within the church in potentially costly disputes and conflicts not least amongst themselves. Similarly, the rise of towns greatly increased the potentially available resources for infrastructure projects, but also led to endless conflicts over lordship (with its attendant fiscal returns), involving both who would rule and whether towns and townspeople might free themselves of the constraints imposed by feudal institutions. On this showing, one reason for the chronic financial difficulties of cathedral building projects is that, though an urban institution, cathedrals were overwhelmingly funded within an agrarian system in which both wealth and social rank depended on control over landed estates and those who worked them. By the 13th century, this system, which did not grant full legitimacy to commerce, mobile capital, or rank based on wealth (rather than the other way around), was beginning to move toward obsolescence, however protracted. It is worth noting, however, that when an urban religious institution was able to tap into the profits of urban economic activities it could greatly facilitate building projects on a large scale. So for example, the Abbey of St. Denis on the outskirts of Paris had been granted as early as 1124 the rights to the tax revenue from the royal fair of Lendit that took place in their neighborhood outside of the city proper (Jordan, 2009, p. 28). By the latter decades of the 13th century at the completion of the major reconstruction of the basilica under the direction of Abbot Mathieu de Vendome (1281) the Lendit fair produced an income of 1,035 *livres Parisis* annually. This was presumably

sufficient to cover most building costs without having to tap into any of the other formidable resources of this well-endowed Abbey (Jordan, 2009, p. 201).

-The structure of the cathedral, though highly variable in its details, was based on functional principles. The cathedral was really two churches: one for the people in the nave, the side aisles, and sometimes the transept and the ambulatory around the choir; and one for the clergy centering on the choir and the altar, and demarcated by screens and/or steps. In this way the cathedral joined the holy and the secular city, but without mingling them. The main functional advantage of the Gothic style over the Romanesque, aside from the ability to add height and mass, was to allow more light on the splendor of the ritual and decoration that marked the clergy and their church.

-Even when secular patrons threw considerable energy behind a religious building project, those were rarely their primary concern. An excellent example of this can be seen in the royal administration of Henry III of England for which we have fortuitously comprehensive financial records. His overall building program was prodigious, and the supervision of construction projects occupied much of his time and interest as king, and surely had to have been more pleasant than his endless struggles with recalcitrant barons for political and fiscal authority. Over his long reign, Henry spent £113,000 on the construction of castles and houses, versus a 'mere' £50,000 on Westminster Abbey. Of that larger sum spent on secular buildings, £7,000 was dedicated to the refurbishment of Dover castle alone, a monument which had been built by his grandfather Henry II for £6,000 to 7,000 in the latter 12th c. (Draper, 2006, p. 8.) Another £28,000 was spent on his most important houses located at Westminster, Clarendon, Woodstock, Havering and Guildford. Not one of these houses is still standing, a fact which should caution us to look beyond just our own appreciation of what has survived to contemporary evidence of the kind of buildings that were considered vitally important in the Middle Ages themselves, (Colvin, Vol. 1, 1963, p. 120).

-Access to high quality stone, and the capacity to bring it to the construction site, was one of the most significant hurdles that had to be overcome for any major building project. As the fortuitously complete financial records of the construction at Westminster Abbey for the year 1253 attest, materials constituted a sizeable expense, in this year for example 37% of the total expenditures (see Figure 3). And as the breakdown of the material purchase accounts reveal, stone constituted just over half of that total (see Figure 4). Moreover, unless a quarry was located in very close proximity to a building site, the greatest part of the expense of masonry resulted not from the stone itself, but from the transport of said stone. Even when as much roughing out was done at the quarry as possible to keep the weight no higher than necessary, delivery over a distance of even as short as 12 miles overland would double the cost of the stone (Salzman, 1979, p 119). Obviously water transport mitigated these costs somewhat, hence the use of high quality stone from Caen for a number of important cathedral projects in Anglo-Norman England such as Canterbury in 1174 and Norwich in 1287. But the best solution was the ownership of a quarry nearby (or granted rights to stone from a royal or other patron). Both Chartres and St. Denis were the beneficiaries of closely located quarries (5 miles in the case of the former) to which they had access to stone at no cost other than carting. Not by accident is it that the great miracle story associated with the construction of Chartres highlights the ability of

the local townspeople, including women and children, to carry the heavy stones to the building site as volunteers, allegedly negating the need to pay anything at all for the stone.

-The natural geologic features of the Paris Basin, lying as it did on a tremendous base of calcaire limestone of mostly very high quality, made it ideally suited as the site for the architectural revolution we know as Gothic. As the work of John James has shown, most of the truly spectacular gothic monuments we continue to enjoy today were sited more or less on top of the high quality stone necessary for the execution of the new architectural techniques (James, 1984, p. 27). Yet as the gothic style spread beyond the Paris Basin, appropriately high quality stone was not always right to hand. Nor could it necessarily just be easily purchased in the marketplace (at whatever distance), even if an institution was not short of cash (which they invariably were). The feudal political context meant that land holdings (and by extension control over the natural resources they contained) were overwhelmingly dictated by position in a hierarchy of usufruct rights and their associated obligations, rather than by ownership in fee simple. Thus the use of certain materials and not others was often dictated not simply by what one could afford, but by connections of power and prestige that transcended mere wealth. For example, an indigenous English substitute for the marble that was so strongly associated with classical architecture, that is Purbeck limestone which could be polished to look like marble, was used to great effect in the columns of the Trinity Chapel at Canterbury Cathedral to dignify the shrine of Thomas Becket. This set off a craze for so-called Purbeck marble that insured that for “the next century and a half ... there was hardly a great church, from Durham to Exeter” in which the slender shafts of this fine and distinctive material were not incorporated for symbolic effect (Salzman, 1979, p. 134).

-If a marble substitute could yield such powerful associations then so much more might real marble. St. Thomas’s shrine at Canterbury featured an extravagant pavement of green and purple porphyry marble that was in place by at least 1220 (if not much earlier) for the translation ceremony of St. Thomas into his new shrine. King Henry III (thirteen years old at the time) was present for this ceremony, a fact worth bearing in mind when we consider the so-called Cosmati pavements (the exquisitely colored porphyry tiles brought back from Rome along with a specialist Italian tile layer by Abbot Richard de Ware in 1268) that he commissioned to be installed at Westminster Abbey. As was the case at Canterbury (and indeed a great many other locations as well), the pavements at Westminster were immediately associated with both the High Altar and the shrine of St. Edward the Confessor. The claim that *opus sectile* pavements bore “an implicit connection” with “the relics of saints” seems entirely consistent with the preponderance of the evidence of their use, certainly at least in England (Foster, 2002, p. 54). Of course, their material origins in and around Rome would have called forth powerful associations with the classical past, while their bright colors and jewel-like qualities would have likewise conjured up associations with the heavenly city of Jerusalem (at least the Biblical understanding of it if not the real city then in alien hands.)

-Cathedrals were not the only churches to be symbolically adorned with marble. Great monastic establishments also employed this material when they wanted to make a particular statement about their power and/or prestige. For example, the highest achievement of Cistercian architecture in England was arguably to be found in the Gothic construction at Fountains, despite the powerful rejection of ornamentation and the greater uniformity of architectural style within

that order than any other. At Fountains, the layout of the straight row of chapels at the eastern end is similar to that “in the hemicycle of the late 12th century remodeling of the mother-house, Clairvaux” (Draper, 1980, p. 79). But this building project did not limit itself to following only Cistercian models. As Draper argues, the “grandeur of the spatial effect and the richness of the surface articulation, especially the multiplicity of marble shafts, show the determination of the monastery to rival the great secular cathedrals and only the clarity of the design echoes the traditional austerity of the Order” (Ibid). Here the use of marble was specifically calculated for one type of imitation, namely the grandeur of the secular cathedrals, while other aspects of the design still held the building within the confines of the Cistercian tradition.

- The other material besides stone that had to be secured in sufficient quantities if a major building project was to be successful was timber. Large stands of old, tall, trees were an especially prized resource in the High Middle Ages because they were an absolute prerequisite for hunting game, the most prestigious of all elite pastimes. In a society that increasingly experienced population pressure on food supplies, at least until the epidemiological disaster at the middle of the fourteenth century, the forest was always susceptible to the temptations offered by the plow. Indeed, the best forests were not just held by the nobility but specifically by the crown. So for example, one of the spoils of the conquest of Normandy by the Capetians in 1204 was the transfer of the forest holdings of the previous Plantagenet kings/dukes to the French crown. In 1318 following a major collapse of the Abbey church of St-Ouen in Rouen (the second most important religious establishment in the city) the Abbot Jean Roussel (appropriately nicknamed Marc-d’Argent) raised large sums of money and secured resource grants for a major rebuilding campaign, including permission to take “great cuts of timber...from the king’s Norman forests” (Krauss, p. 186). Yet in 1355 the crown imposed a fine of 10,000 *ecus* for ‘excessive’ use of royal timber during the previous building campaign, at a time when the building effort was already jeopardized by a number of other extraordinary expenses, most importantly the cost of securing papal approval for the election of the next abbot following the death of Roussel. That this fine was the result of political struggle between crown and abbey rather than a fee motivated by actual abuse of the forest is suggested by the fact that it was not long before another French king atoned for the fine with a large gift to the church fabric.

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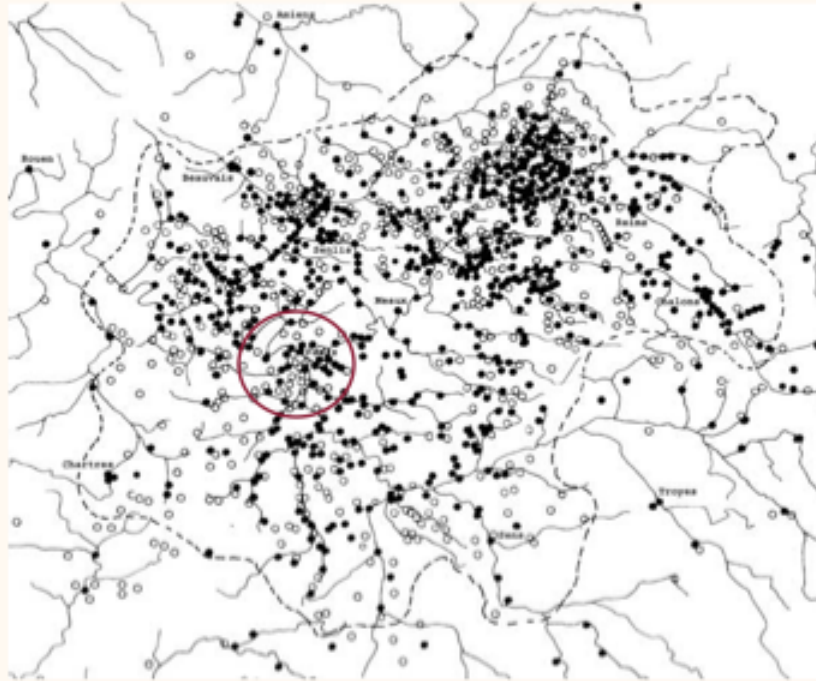
Growth in European Monastic Establishments

	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th
Tot. #	1,193	2,094	3,168	4,385	6,343	12,485	20,125	21,948	21,270	20,369
New est.	1,193	1,021	1,284	1,533	2,397	6,776	8,888	3,836	1,516	1,226
% net inc.		86	51	38	45	97	62	9	-3	-4

Figure 1

Source: E. Buringh and J. L. van Zanden, "Charting the 'Rise of the West'. Manuscript and Printed Books in Europe," *Journal of Economic History*, Vo. 69, 2009: 410-46.

Paris basin - Gothic foundations



Source:
John James

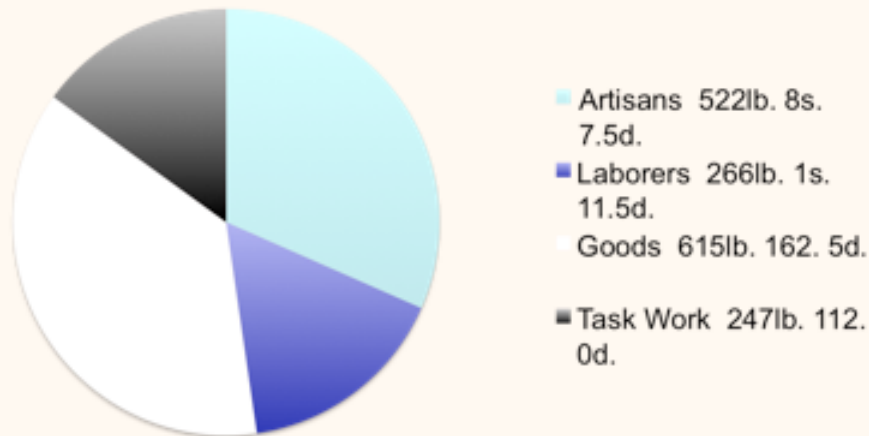
Map of the 1,740 Early Gothic churches (1100-1250) in the Paris Basin. Solid dots indicate all interesting churches, and open dots the architecturally less significant.

Figure 2

Source: John James, "An Investigation into the Uneven Distribution of Early Gothic Churches in the Paris Basin, 1140-1240", *The Art Bulletin*, vol. 66, no. 1, 1984, p. 17.

Accounts of Westminster Abbey 1253

Total Expenditure 1,651lb. 192. 0d.



Figures 3 and 4

Accounts of Westminster Abbey 1253

Purchased Goods 615lb. 16s. 5d.



Relative cost of military expenditures versus cathedral construction

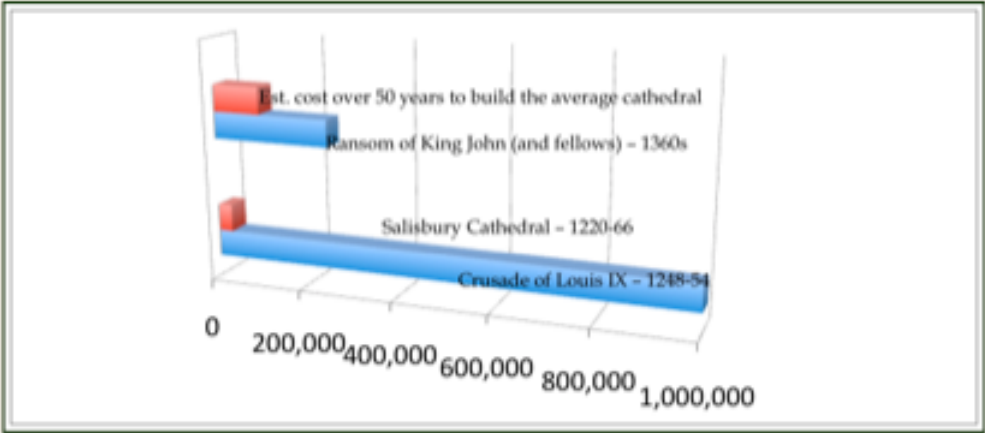


Figure 5