

## Funding the early gothic churches of the Paris Basin

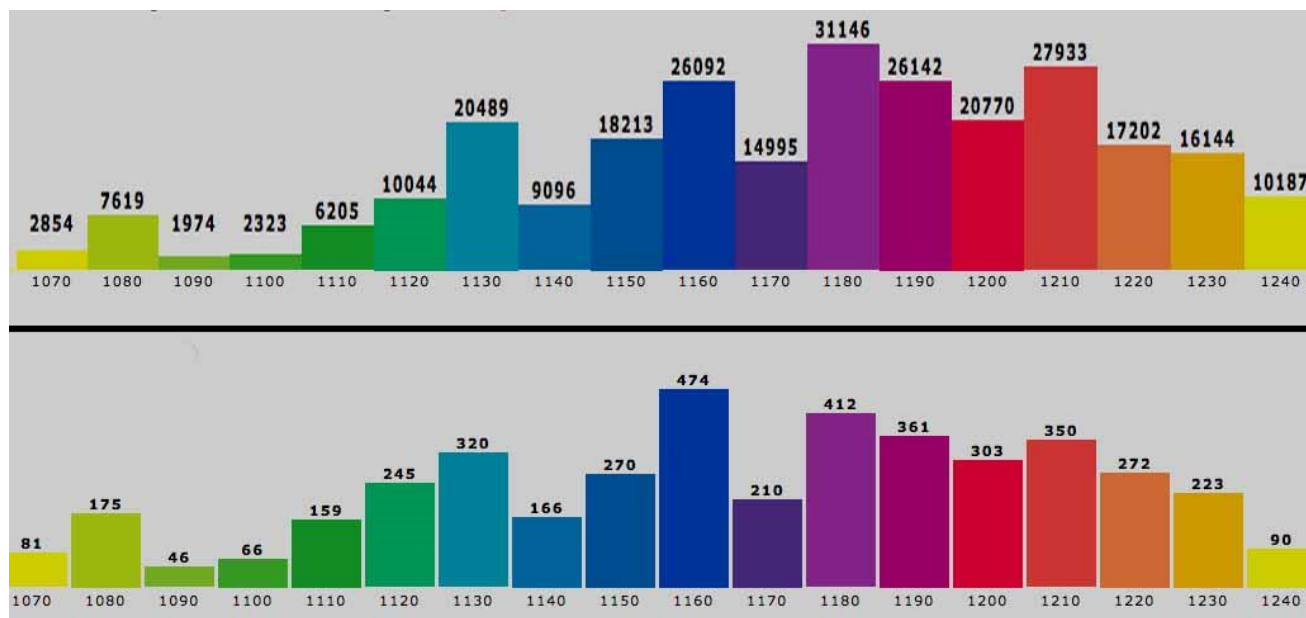
Adapted from *Parergon*, xv 1997, 41-82. Updated 2021

The Gothic style was created in northern France between 1130 and 1240 in the region bounded by Laon and Reims to the northeast and Chartres to the southwest - an area of less than 200 by 140 kilometres with Paris lying in the western half.<sup>1</sup> Ninety percent of these churches lie within the geological formation known as the Paris Basin,<sup>2</sup> consisting of a limestone called *calcaire*.<sup>3</sup> There is excellent building stone beyond the Basin, mainly in hard chalk and sandstone, but few buildings with Gothic motifs were built from other than *calcaire* until the 1220s.<sup>4</sup>

Medieval France was a conservative society that was nevertheless able to transform the classically-based Romanesque into a totally new style of architecture. After thousands of years in which buildings depended on thick walls for stability, masons explored structural possibilities beyond anything that had been conceived before. Though some buildings collapsed, the masons continued to experiment until they discovered how to erect huge areas of glass supported by a thin skeleton of ribs and columns. Without large and thick walls to absorb the lateral thrusts, these loads were shifted outwards onto flying buttresses so that the inner supports could be made thinner until they seemed to disappear. The concept was audacious.

Starting in 1980, I made a survey of all the churches in the Paris Basin to locate those with some work from these years. I did not include other buildings from the period, such as castles and cellars, as churches comprise a relatively well-preserved population and I felt that the evolution of ideas could be best observed by concentrating on one formal type. The outer boundaries of the searched area were defined when I could travel for a day and find virtually nothing from this period.<sup>5</sup> Though there are churches beyond this perimeter, they are scattered and at times great distances from the heartland of the Basin. The results of the survey were published in 1984.<sup>6</sup> It has produced a complete collection of information related to one class of objects for these times - what statisticians would call a homogeneous population of quantifiable data. There is, of course, the Domesday book from the century before, and the royal census from the next century, but nothing from the vital years that produced the Gothic revolution.

This economic analysis is based on 842 churches are the most significant [b]. There is a similar number that I classify as less interesting because they were more roughly built, with minimal decoration, vaults or profiles. My method has been to date every campaign<sup>7</sup> in these churches, abbeys and cathedrals to one of the decades between 1120 and 1250, and to "cost" it with an arbitrary bulk-billing unit.<sup>8</sup> I have then used the variations in expenditure over time and place to define boundaries between regions of similar economic activity, and to consider some of the factors that may have affected church-building.<sup>9</sup>



Cost units for Paris Basin churches and the number of working sites each decade.

### Dating

Every evaluation depends on the dates attributed to each phase of a structure. The dating used here is based on the documents where they exist,<sup>10</sup> on scholarly opinion and on the foliate style of the capitals. In the latter there is a clear and regular evolution of foliate style between the later 1160s and the 1240s. This process begins with spring-like buds and freshly-tight foliage and evolves, decade by decade, into

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boisterous and energetic summer-like leaves and flowers. Working from those few groups of capitals that can be dated with certainty, I have found that the style of carving can be defined for each decade.<sup>11</sup> Scholars still do not agree that individual hands can be identified, nor whether capitals may have been carved years in advance and stored before being erected. There is also no agreement on the possible reuse of old carvings or the deliberate copying of archaic forms. Though, taken in isolation, these questions are important, they have little bearing on the dating method I have used.

Dating has not been estimated from individual capitals, but by taking **an average** of all those placed in one campaign. There are no exceptions to the fact that in every contemporary group of capitals the morphology spans no more than three decades. For example, there are 42 separate stones with carved capitals in the Oulchy choir. Ten percent of them are like capitals in the Chartres north tower of the later 1130s, two-thirds are similar to the Chartres west front and the Saint-Denis narthex from the early 1140s and the remainder match capitals in the Laon choir aisles which none would want to date before 1150. The weighted average suggests a date for Oulchy in the early 1150s.

To check this method for consistency I found that among almost 3000 campaigns there is not one where the majority of the capitals in an upper story are stylistically earlier than those underneath. If this were not so the definition for the foliate style ascribed to one decade would overlap another. That this does not happen gives some confidence in using foliate style to date campaigns. I have further tested the dates against the introduction of new ideas, the movement of individual master masons and the flow of funds. Overall, I believe they are accurate to better than  $\pm 5$  years, which taken overall it means that this is the best database we possess. Without a method for dating this analysis would not have been possible.

Two-thirds of the total funds were spent on hundreds of smaller buildings for which there is little if any scholarly analysis and virtually no documentation. We cannot date them by design - the choir of Chars looks like but is certainly not contemporary with Notre-Dame at Paris.<sup>12</sup> Nor can we date them by moulding profiles - the water-holding column base was used continuously from the 1140s to well after 1200.<sup>13</sup> Nor by elevational format - for some buildings persevered with the same for over fifty or sixty years, as in the naves of Laon and Sens. **Only the forms of the capitals indicate the actual construction date.**

Concerning much scholarly analysis, it has been common to date a building's design from its commencement. For example, it is often stated that the four-story design for Noyon cathedral was "designed ca. 1160".<sup>14</sup> This presumes that the decision to build a triforium above the gallery had been made when the footings were placed - which does not fit what we know of medieval methods. Most workshops, especially those on the larger sites, kept their designs up-to-date by constantly revising the form of the building. Plans and contracts show this to have been the case at Strasbourg, Reims, Milan and, indeed, at nearly every site for which we have any written evidence. Therefore, a proper conservative approach should be to date any innovative idea to the latest date it could have appeared - in the case of the Noyon triforium, the foliage on the capitals were carved thirty years after the footings, in the mid-1180s.<sup>15</sup>

I have taken into account the many reassessments made during the past forty-five years that have altered the chronology of the period. The dates I gave for Chartres cathedral have been recently confirmed by dendrochronological analysis of the timber ties left in the aisle vaults,<sup>16</sup> though the completion of the nave has been shifted a few years earlier.<sup>17</sup> This made it possible to date some of the finest French sculpture to the reign of Phillippe Auguste rather than Saint Louis, forty years later.<sup>18</sup> Important modifications have been made in dating the apses of the Soissons and Laon cathedrals,<sup>19</sup> the ambulatory walls of Notre-Dame in Paris,<sup>20</sup> and the important abbeys of Braine and Longpont.<sup>21</sup> The cathedral of Senlis is now believed to have been completed very rapidly,<sup>22</sup> the flyers at Sens and Saint-Germain-des-Prés have recently been dated to the 1150s,<sup>23</sup> and the first stones of the tall clerestories of Soissons predate Chartres by some years.<sup>24</sup> As the dates for most of the smaller buildings are, as is the mode with historians, "dependent" on the greater, all this has had a profound affect on the overall chronology. A reconsideration of the architectural history of Gothic is waiting to be written.

## Units of construction

Medieval building records are in many currencies and are extremely difficult to translate into modern equivalents.<sup>25</sup> To circumvent these difficulties I have employed an arbitrary unit of work based on bulk billing techniques used by quantity surveyors.<sup>26</sup> This is widely employed today as an extremely effective method for making initial cost estimates with minimal errors. As some churches were built in small increments over many decades, while others were completed with great rapidity, I needed a unit that would be small enough to provide realistic figures in the former without becoming too huge in the latter. I settled on using a unit, six of which would pay for one small vaulted bay in the aisle, or a small first-floor gallery. Such a bay would consist of an external wall with a small window, half of two columns about 3 meters tall, the floor and footings under them and the vault and roof overhead.

The number of units was increased proportionately in larger or taller bays. Additional units were added for the end walls, for towers and crypts and for greater complexity. In multi-story work I took account of

the additional cost of building upper stories in scaffolding, cranes and the slower movement of men and materials. A fairly complex spreadsheet was used to make the calculations and maintain consistency. The difference between rubble and ashlar construction did not have a great impact on the work-rate, for though rubble is a cheaper construction in walls it makes little difference in vaults or piers. Sculpture and glass are not included in these figures. I have assumed that costs did not change from region to region and have taken no account of the distance of the site from the quarry, though in some cases this would have been a significant factor.

In this way the rebuilding of Chartres cathedral after the fire of 1194 cost 5645 units, and the earlier western bay with its two towers cost 700. In September 1972 Ken Green and I costed the rebuilding at \$38 million Australian dollars, excluding stained glass.<sup>27</sup> Between then and February 2021 the Building Price Index has risen about 22 times. The Index applies to standardized large-scale and repetitive structures like warehouses and shopping malls. Yet over these twenty years cost increases have been minimized with new materials, better fabrication methods and site management, and the mechanization of the trades so that work could be done by relatively unskilled labour. In discussion with professional quantity surveyors we decided to compensate for these technological improvements and for the disappearance of hand-crafting by increasing the current index by 70 percent. The cost of Chartres in 2018 would therefore be about \$830 million. Considering there are no mechanical, lift nor electrical services, no communication gear nor hydraulics, this seems a fair price for a shell of this size and complexity. I therefore estimate that one unit is worth, in 2018 Australian dollars, about \$14,700, and that our one small vaulted bay would cost about \$70,000.

The costing has usually been restricted to those buildings that still stand. The extent of work in the Paris cathedral nave in the 1150s can never be known, nor the original form of Notre-Dame de l'Epine. Though rough estimates might be made of the 1150s ambulatory at Laon or the pre-1918 Mont-Notre-Dame or pre-Revolutionary Royaumont, there would be no end to these guesses and approximations once begun. However, partial ruins such as Longpont that have enough remains to show their size and dates have been costed as if they were still standing. Total ruins such as Mont-Notre-Dame, Vaucelles, Saint-Vincent in Laon, and Vaux-de-Cernay have had only the remaining stones costed as we don't have enough information to make a reasonably accurate estimate of either size or dates of the missing parts. Heavily renovated buildings such as Poissy have been costed in full.<sup>28</sup>

The total number of units expended in the 840 more interesting churches and ruins built between 1070 and 1240 comes to 269,496, or in 2018 money \$au.4.7 billion. This is about 320 units (or 5½ million dollars) per church. Expenditure ranged from 77 units at Cerseuil, a small parish church with four arms and a crossing, to 5,645 units on the cathedral of Chartres. Perhaps twenty construction campaigns were required to complete Cerseuil costing an average of \$70,000 each, while Chartres required forty-six to the completion of the nave high vaults for \$au.83 million, averaging about two million each. Rarely would a campaign at Cerseuil cost more than four units, while one at Chartres would have been enough to build the whole of Cerseuil plus half as much again.<sup>29</sup>

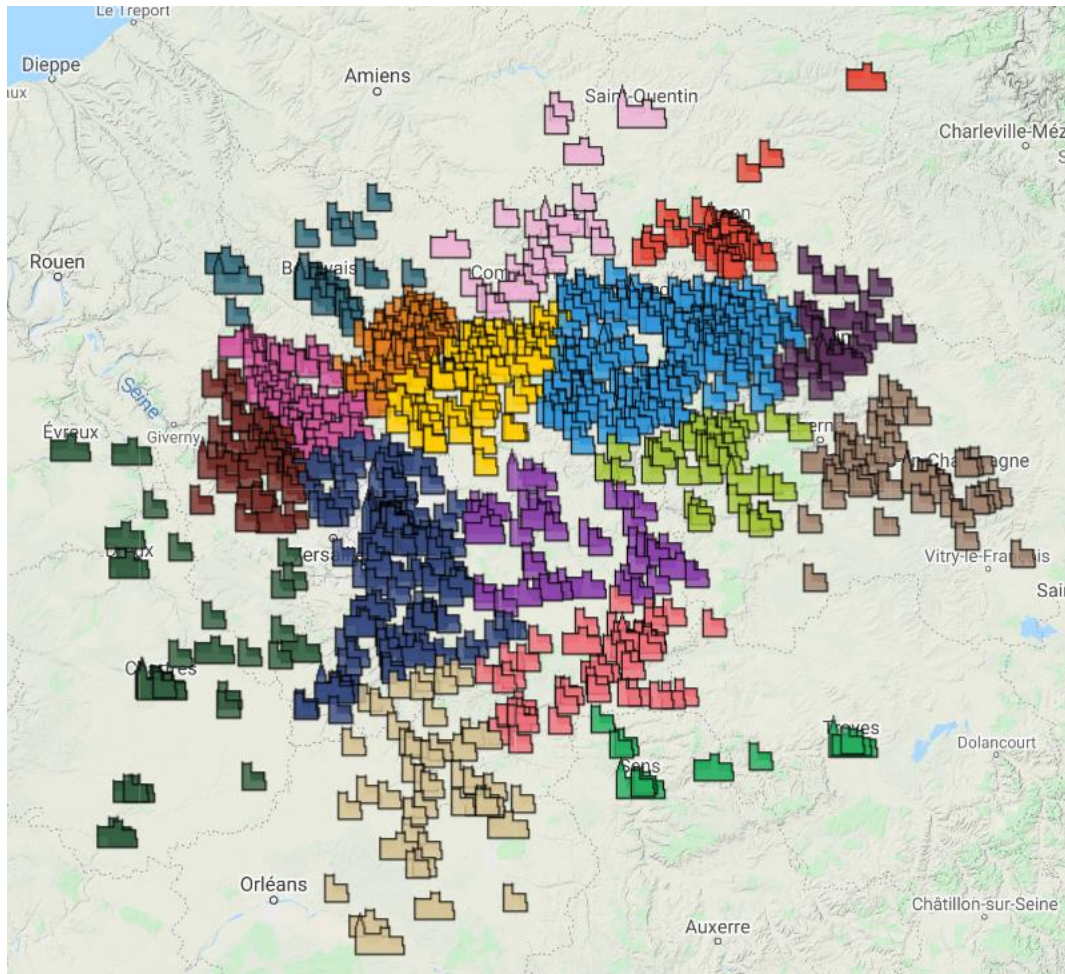
The upper part of the figure in the first page combines these dates and units with approximations for the whole period. The many-fold surge in construction for a hundred years was interrupted only by the crusades. It is flanked by much more modest levels of spending that throw the enormity of this period's activity into relief. Though there is a slight dip in the 1170s, this extraordinary flowering of stonework left northern France crowned with some of the most precious and inspiring architectural creations in all human history.

## The regions

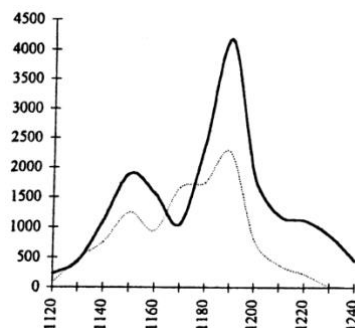
There were differing rates of construction in different areas. Rather than assuming that these areas coincided with political or ecclesiastical boundaries,<sup>30</sup> I reversed the process so that the changing construction rates were used to define the boundaries. This I did by collating the units for clusters of buildings that seemed to be part of a grouping, such as those around Provins, along the Seine near Meulan, those near the town of Paris, the churches close to the Oise river basin, and so on. I then expanded from these clusters with their own distinct patterns into adjacent areas to see which nearby buildings would fit. In this way the outlines of nine regions began to determine themselves. It was a gratifyingly simple process to refine the boundaries until every group of churches within each region displayed matching work-rates. The regions defined in this way are shown on the map and the units spent in each decade and the number of churches involved are shown in COGA. The names used are in common use, but the boundaries do not necessarily coincide with those of the middle ages, because I have defined a region as an area in which the majority of buildings have similar work-rate characteristics throughout this hundred and twenty year period.



Three major patterns stand out - the west that included the royal domain (and to a lesser degree the Champagne to the southeast), the northeast plateau and its rivers, and the northwestern valleys adjoining the Oise, [b].



These three patterns are markedly different, showing that distinct forces were at work in each. There were also marked differences in architectural style between the first two of these areas, described as "a smooth, parchment-like quality" in the west compared to "plastic effects of projection and recession" in the northeast.<sup>31</sup> The northeast [blue], not the Parisis to the west [indigo] is numerically the most important: it is much smaller yet contains almost half the churches.<sup>32</sup> The difference between the Laonnais and Soissonais regions will illustrate how I firmed up these boundaries. Spending in the Laon area, dashed in [b], collapsed very quickly after 1200 compared to the Soissonais where vigorous funding continued for another decade.



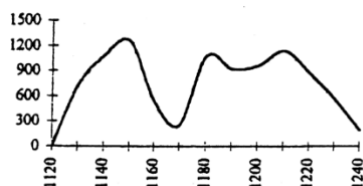
By placing all churches in which little or nothing was being constructed after 1200 in the Laonnais group, and placing the others in the Soissonais a clear-cut boundary emerged. There was none of the intermingling that one would expect if there had been a transitional zone between them. The division between is so well defined that it marks the junction between two separate economic zones.

There are three distinct periods of growth: the 1130s to the crusade, and from the 1150s to 1170 and the 1180s onwards. In the first period the west shows a large increase during the 30s that peaked in the 1140s. This was followed by a 60 percent collapse that lasted over thirty years. In the northeast initial growth lasted longer while the depression was smaller and lasted only half the time. In the Oise masons were

busier earlier than anywhere else - in the 1120s. The area above the dotted line indicates the additional funds spent on the cathedral of Senlis. Except for the sharp depression in the 60s there was, in these valleys, a fairly even tempo of construction for almost a hundred years.

During the second period the west shows rapid growth from the 1180s that peaked after 1210 and then declined at much the same rate as it had grown.<sup>33</sup> In the northeast construction also surged dramatically during the 80s and 90s, but collapsed 70 percent rather than declined, and did so a decade or more earlier. Up to the 1190s, the northeastern zone constructed more than the rest put together. After that, less than a quarter. This remarkable early concentration in the northeast reflects the fact that **more than ninety percent of the villages have churches with work from this hundred-year period compared to only thirty-two percent in the area around Paris.**<sup>34</sup> There was something about this area prior to 1200 that encouraged the enthusiasm so essential to a prolonged building boom, and gave patrons the wherewithal to accomplish their dreams. It includes most of the better-quality churches and the better quarries of *grossier* limestone within the northern stratum of the *calcaire*.<sup>35</sup>

The northwest part of the County of Champagne, which includes Provins and the Senenois, is similar to the royal domain, though they were political opponents, and often at war [b].



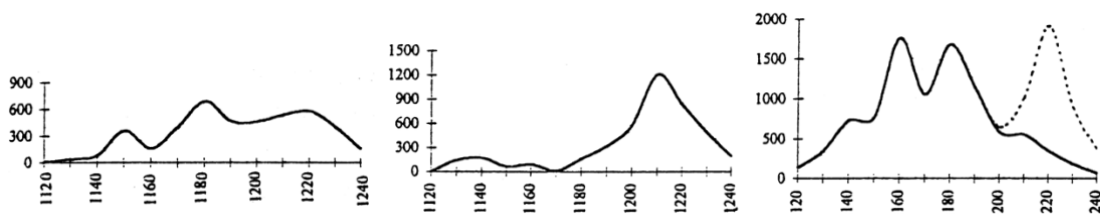
Within the Basin there is an inner core area in which there are eight interesting churches to every six of the simpler sort. Beyond this core there are less than three to six - an enormous difference.<sup>36</sup> The core area is the heartland of Early Gothic where there was the energy to build and raise the enormous funds required.

If we exclude the cathedral of Sens the only major difference is that the depression is less sharp and the boom longer in the Champagne. It has often been written that the towns of the Champagne fairs could have supported church building, for they were at this time more important trade centres than any in Italy or Flanders.<sup>37</sup> Yet little was built in three of the major fair towns of Lagny, Bar-sur-Aube and Troyes. Only in Provins was much constructed in the 1150s and 1170s, probably because it was the seat of the count. This shows that **the fairs were not in themselves capable of supporting construction.**

The Gatinais and the Beauce are included with the Parisis as the construction profile is similar, even though the flow of funds is less. In the former most units were spent on smaller buildings, while in the Beauce parish churches are rough and simple, and the region is dominated by work in a few large towns - Bonneval, Dourdan, Châteaudun and, above all, Chartres.

Four areas do not fit any of these patterns - the Marne, the Brie, the far east and the Meulan along the banks of the Seine. In the Marne there was a long and sustained boom among the many small churches settled along the banks of the river between 1170 and 1230, until it too declined in tune with the other regions [b1]. The boom in the Brie started later, with nearly all construction occurring after 1190 [b2].<sup>38</sup>

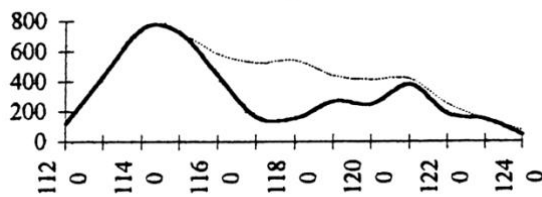
In the Reimois and Châllonnais investment surged between the 50s and 90s and then, as the solid line [b3], declined thereafter. The dashed line indicates the rebuilding of Reims cathedral after the disastrous fire of 1210.



Unlike every other region, the increasing amounts spent on the cathedral were not matched elsewhere, where less and less was being constructed. The funds required were huge, four-fifths of the total funds available. This enormous and apparently draconian demand for money would have placed huge demands on the local guilds and merchants - the only people in the community with significant free funds at their disposal. **The difficulty of raising money in a falling market** combined with the clergy's urgent desire to rebuild their cathedral may explain the intensity of public hatred for the work that drove the townspeople to open revolt in the 1230s.

In the fourth, the Meulan area along the Seine, a great deal was built in the 30s and 50s and declined gradually thereafter at about ten percent per decade.<sup>39</sup> A large part of this expenditure went on the huge collegiale at Mantes-la-Jolie. The dashed line represents the costs on 34 other buildings with Mantes

omitted. This shows that the Meulan failed to prosper while the Parisis to the east and the towns along the Oise to the north were extremely busy. The source of Meulan funding may lie in the narrow littoral of fertile soil between the encasing plateau and the Seine which produced wine that some considered the best in the kingdom<sup>40</sup> - though why that income fell after 1160 is not known [b].



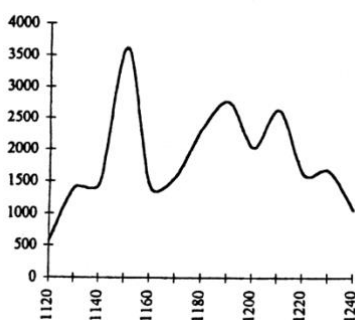
In a rare document we are told that seventeen towers were built by Count Galeran in the 50s and 60s.<sup>41</sup> The graph suggests that his patronage coincided with, and may have been made possible only by the prosperity in the dukedom at that time.

### Growth in the west 1120s to 1145

Relatively few buildings remain from before 1120. Though many were in whole or in part removed for larger and airier structures, I estimate they do not seriously affect the graphs.<sup>42</sup> Indeed, I would say that a steady and even amount had been spent each decade before 1120.

This first boom set the stage for the extraordinary transformation in architecture that was to come. Without the growth of these years the new style was inconceivable. In the west in the 1130s and 40s the bulk of the funding went to a few great buildings - Notre-Dame in Etampes, Saint-Pierre in Montmartre, Saint-Denis, the ambulatory of Notre-Dame-de-Paris, Saint-Martin-des-Champs and Saint-Germain-des-Prés - most with some connections to the Crown. It has been suggested that the funding had a lot to do with Eleanor of Aquitaine's marriage to Louis VII. Her arrival in Paris in 1137 coincides with the start of four of these buildings,<sup>43</sup> and **as long as she resided in Paris spending was quite high** at thirty units per church. But after the divorce spending declined by seventy-five percent, and the average on each church dropped by half to fifteen units - a level that would be maintained for the next eighty years. Fifteen units was just enough to add a couple of aisle bays onto an existing nave or a small apse. In the fifteen years before the divorce in 1152 donations to church building were double that of the 28 that followed. In these later years Louis "favoured the small monastic institutions rather than the orders which required substantial endowments".<sup>44</sup> He followed a minimalist policy which gave him maximum political gain for the smallest total expenditure. This policy may have helped to deepen and lengthen the recession, and it did not begin to turn up until Louis' successor was crowned.

The Capetians usually employed minor counts from the north as advisers - from Beaumont, Clermont, Nesle, Roye, Mello and Senlis. These lords were able to support construction, mainly on a few buildings like Bury and Cambonne, and were at first more generous than their royal master [b].



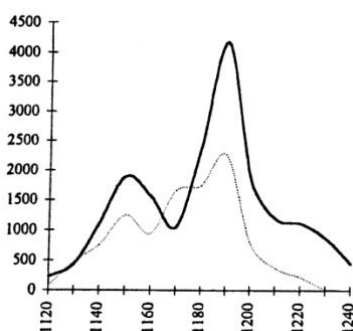
Later, most of the funding in the Oise valleys followed the pattern in the Parisis. Although Senlis was the smallest cathedral of the period it was also one of the most quickly built, and was substantially finished in less than ten years, apart from the towers. After the recession smaller campaigns were promoted in a greater number of buildings, some ten or eleven per decade averaging 12 units each suggesting a more broadly-based source of funding.

The sources of those individual inventions that transformed the Romanesque style into Gothic were all introduced between 1110 and 1220 in the Paris Basin, especially in the northeast and along the Seine and Oise valleys. This happened in two phases: from the 1100 to 1145 in the Oise and west, and from the 60s to 1220 in the east. In the first, wide windows, integrated vaulting, light-weight construction and flying

buttresses were created. During the recession of the 1170s windows became smaller and thick-wall construction that had no need for flyers returned. With the next boom came great height, even wider windows, tracery and the glazed and integrated triforium that became the hallmarks of the High Gothic style of later years. **There was a definite link between inventiveness and quantity of work.** As long as production was high new ideas were being drafted and experimented with, but whenever funds dried up creativity declined with it. Booms were stimulating, recessions traditionalizing. And, of course, new ideas are themselves exciting and could have encouraged even more construction.

### The recession in the 1170s<sup>45</sup>

There are few military reasons for the decline in available funds except for Louis VII's Burgundian campaigns in 1171 and his defeat by Henry II in 1174. As wars were common to every decade and we have no records of extraordinary taxations, it seems unlikely that wars were the cause. We know that Louis and his successor, Philippe Auguste, "kept any charitable instincts firmly subordinated to political reality making only a few grants to secure the well-being of his soul".<sup>46</sup> But in the adjacent Champagne Count Henry was called the Liberal, for he was credited with giving his people "peace, prestige and wealth".<sup>47</sup> Yet [b] shows that the decline was just as drastic as in the royal territories. It was only after his death in 1181 that the County prospered, so was it Thibaut III who should be called "the Liberal"? or does the hint lie in the word "prestige"?



Artistically, in the early 70s, when expenditure had slipped almost fifty percent, there was a profound change in the style of foliate carving.<sup>48</sup> Prior to 1170 foliage was stylized and designs were intricate. Afterwards there was a basic change in direction toward naturalism, with some carvers employing delicate spring buds, and others large leaves and crockets, both simple and rumbustious. This change persevered during the next fifty years as all foliage became more realistic and more energetic. Therefore, the recession years marked a watershed in attitudes and design.

I have the impression that this may be a historically identifiable economic recession, and would have had the same complex social and legislative causes as any since. The way in which it affected the whole Basin, hit some areas worse than others, and the immense changes to carving, sculpture and architecture are all signs of an event that had a major impact on people's hopes and perceptions.

### Great creativity in the northeast from 1150s to 1200

The enormity of this growth is puzzling. As this article proceeds, I will give reasons to suggest that the boom was borne forward by the fervour and funding of the merchants, tradesmen and independent farmers of the many towns and small valleys in the great triangular plateau that has the citadel of Laon at its apex. This was the most prolific area: from 1130 to 1170 nearly every parish church was worked on in a large number of small campaigns. The amount being spent on each church was the lowest in the Basin, yet in sum they gifted more than any other region.

Compare the northeast with the western regions. The Parisis was the home of the king and the royal household, with all his courtiers and the great trading centre of Paris with its manufactories and the huge agrarian farms to the north. Yet it was only just able to surpass the amount constructed in an area only half the size that lacked any significant centres of trade or manufacture.

In the northeast work was executed in over ninety percent of the villages, compared to one village in three elsewhere. Most construction was in tiny campaigns that were among the smallest in the Basin. The numbers and scale suggest that the local farmers were paying. The Soissonais and Laonnais were peaceful lands and not very influential in those affairs that interest historians. They are hardly ever mentioned in the histories. Baldwin's *The Government of Philippe Auguste* is typical in mentioning the bishop of Soissons only once in a small footnote. It was one of the richest grains and agricultural areas, and politically a centre of conservatism and tradition. Soissons "at best played a passive and minor role in the development of the

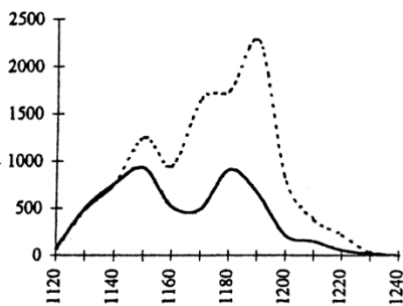


royal domain".<sup>49</sup> Between 1150 and 1250 there was relative peace and prosperity, and the bishop and count maintained a policy of non-involvement with their neighbours, which resulted in being left alone as "a pocket of feudalism which resisted change".<sup>50</sup> Yet it was here that three-quarters of the inventions that created Gothic architecture were made.<sup>51</sup> It may have been a traditional-minded part of the country, but artistic creativity was matched in the west only by the large-scale works of the 1130s and 40s, and after 1200 when the northeast was in decline and many of the builders migrated westwards in search of work.

There is evidence that the Soissonais and Laonais produced the best wine in France, and that these vineyards were sustained by a warm and frost-free climate up to the 90s. Wine was (apart from the agrobusiness wheat fields north of Paris) the only agricultural product that could deliver copious amounts of cash, and vineyards were much sought-after as city investments for this reason.<sup>52</sup> In the fifty parish churches along the Aisne the work-rates showed they were spending an average of twenty-six units per church during the century.<sup>53</sup> As this is the average spent on all the parish churches in the Soissonais, may we conclude that a similar source funded the whole of this region? A modest but continuous source based on small vineyards in which the profits remained with the wealthy farmers and the community? Lopez describes a similar situation in Bordeaux.<sup>54</sup> The independence of these freeholders and burghers is illustrated in the large number of communes that were established in these valleys. In an attempt to establish footholds in the Episcopal enclaves, the kings granted charters of independence to a great many towns in the northeast. Today these towns, like Filain and Dhuizel, have only a few dozen inhabitants and were probably much the same size in the twelfth century. Yet, these charters were eagerly sought for they gave people independence and a champion against their local rulers - but at a price that became increasingly onerous as the Capetians became stronger and needed funds more than influence.

### Decline in the northeast after 1200

The northeast began to decline around 1200. In the Soissonais, the Reimois and Châllonnais the decline was gradual. In the Laonnais it was particularly sudden and disastrous. Nowhere else was the decline so rapid or long-lasting. The numbers of churches being worked on fell from ten each decade before 1180 to less than two in each of the following four decades. Before 1200 they had spent much larger amounts on each church, and a concomitantly huge sum on the cathedral, one of the highest in the area [b]. This suggests they seriously outstripped their resources.<sup>55</sup>



Was the decline triggered by the military incursions of Count Rathel and Enguerran de Coucy after 1200?<sup>56</sup> The Laon situation raises an interesting issue: was ecclesiastical policy to encourage and support parish church-building? Were it so we should expect to find construction all through the bishopric? But it is limited to the limestone hills and valleys to the south of Laon, while the plains to the north are virtually bare of churches from this period.<sup>57</sup>

A primary cause for the decline may have been a significant change to the climate that occurred during the 1190s. Where the previous decades had been perfect for wine production, with hot and moist summers and frost-free winters, the rainfall became less.<sup>58</sup> Dendrochronology and texts indicate that for some fifty years drought settled on the whole of northern France. The grapes shrivelled and the quality and quantity of wine were so reduced that little excess cash would have been available for building. Prior to this, vineyards had been the major source of cash in the farming community. Afterwards drought would have decimated the vineyards and reduced the surplus income of the independent farmers. The decline after 1200 may have been caused by this change to the climate.

Another factor may have been the taxes and fines imposed by the king in return for granting the towns commune status. The Soissons city commune was continuously in debt, being repeatedly taxed to pay for its charter so it was never able to contribute to the rebuilding of the cathedral.

As work declined in the northeast, where did these once-busy northern builders go? With budgets dropping by seventy-five percent in a few years, we can imagine their plight. The masters had little work, and what they had was being done with less decoration and fewer mouldings than before. With perhaps



two-thirds of the labour force out of work, they naturally sought employment elsewhere and gravitated toward the west. Some of the big teams travelled a hundred miles to Chartres to work on its cathedral,<sup>59</sup> but the majority of contractors probably broke up into smaller gangs to work under the masters of the burgeoning construction industry in the Ile-de-France. Ideas like the triple window, the *tas-de-charge* and the continuous triforium that had been popularised along the three river valleys of the Aisne, Vesle and Marne, were abandoned just at the time they were taken up by the builders downstream - a process that must indicate that the men who favoured these ideas had travelled west in search of work.

### Boom in the west after 1190

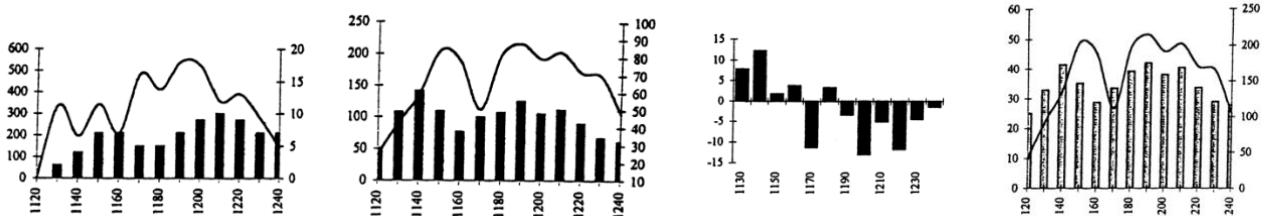
Though the Royal Domain was the same size in 1180 as it had been in 1108, the king had gradually become the undisputed master of that territory. Yet little funding came from the royal coffers. The kings were more interested in maintaining their rights and taxes so they could compete with the great wealth of their foes, especially the English. In the rich limon soils to the north of Paris the growing wealth in grain seems to have done little more than fund the king's wars and crusades.<sup>60</sup> Though it is thought there was a distinct disadvantage in living in the royal demesne (1185 to 1200 was a time of almost continuous warfare and crusades) construction was increasing every year. So, the evidence suggests that war and taxes for war did not on their own limit church funding.

The explanation may lie in royal policy. From the later 1180s Philippe Auguste gave increasing support to the burghers of Paris and increased their prosperity in many small ways that did not affect his income. In return he expected their financial support. In 1190 he took the unprecedented step of including six Paris burghers in the trusteeship of the royal treasure. In 1200 he persuaded the Count of Auxerre to remove a prohibition against unloading salt that was prejudicial to the Parisians and in 1204 all Burgundians having commerce along the Oise were required to have a Parisian partner, not unlike Malaysia today. In 1205 he forced wines from the Loire out of the export market by insisting they be transported by carriage, leaving the much cheaper river traffic to the Parisians. After his conquest of Normandy, he gave Paris control of the tolls along the Seine, instead of Rouen.<sup>61</sup> In return the burghers paid for many things the king would otherwise have had to do, such as the enlarged defensive wall around Paris that protected the city for nearly a hundred years.<sup>62</sup>

### The influence of the cathedrals

Some work on cathedrals did not survive rebuilt nave of Paris in the 1140s, the clerestory at Senlis destroyed by fire in the sixteenth century, and the renovations and extensions at Soissons and Reims. Therefore, some of the figures before 1160 will not be as accurate as later decades [b1]. More was being spent on a few buildings in the 1170s and 1180s, and less on more after 1200. It may be that as the number of cathedrals under construction doubled between 1170 and 1210, much cash was drawn out of the economy which helped to intensify the decline among other projects.<sup>63</sup> Compare with the figures for other churches [b2]. The decline in numbers and funding after 1200 is less than for the cathedrals, suggesting that as funds dried up big endowments were harder to come by than small. The decreasing importance of big donations is suggested in [b3]. It shows that cathedrals were taking proportionately less of the total funds as time went on.

When the largest numbers of buildings were under construction in 1140 the amount being spent on each had already started to decline [b4]. As with the stock exchange, the desire to build was catching and was vigorously pursued even as available funds were drying up. Similarly, an increase in the funds spent on each in the 80s came before the full boom in building.



Cathedrals consumed a quarter of the available funding, with profound effects on the community. Kraus describes the complex and persistent attention required to maintain funding for these major works and that, "the financial needs of a cathedral under construction were so great that coercive methods had repeatedly to be used to keep the flow of contributions focused on this goal".<sup>64</sup> The slow progress at Meaux and the popular opposition at Reims show how hard this may have been.<sup>65</sup> Novel methods were often used, as when

Paris, Beauvais and Noyon followed the abbeys by erecting the apse chapels first so they could be used to attract the donations needed later for the rest of the work.<sup>66</sup>

### Parish work and the smaller churches

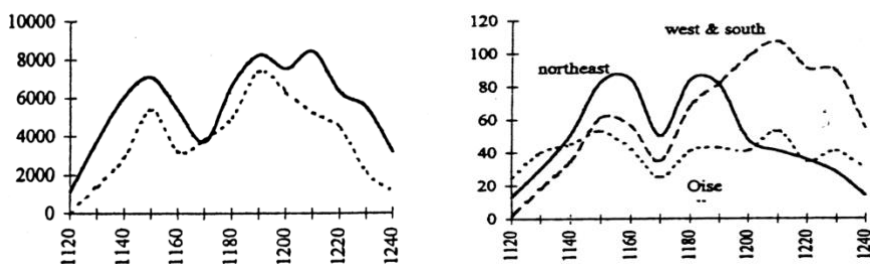
In spite of the many major projects, most money was spent on relatively modest construction spread across hundreds of minor churches and abbeys. Though the big ventures had an enormous impact on medieval society, it would be a pity if historians continue to stress the economic and artistic importance of the cathedral workshops and ignore the smaller buildings. Not only were parish churches and abbeys, even the smallest, often built by the same masters who worked on the cathedrals, but the sums of moneys raised were more important in the local community. Unlike smaller works, the cathedral chapters were often allowed to raise funds from beyond their own diocese, even in distant lands. Considering the relatively limited and, on the whole, local sources of money available for non-episcopal works, it is remarkable that so much was constructed.

There is little documentary explanation for small-scale funding, but the implication of a number of indicators is that parish churches and small monasteries were, on the whole, funded locally and in large part by parishioners both peasant and burgher. Recognizing the complexity and uncertainty of this issue, for simplicity I will refer to this funding as parish or local. There were no bond issues or other ways to raise money - unless you were prepared to pay enormous interest rates, and that was frowned upon. Construction was for cash. When you had funds in hand you were able to build, and when there were no funds you had to stop work and send the men away. Complaints on this matter were common. It is therefore particularly interesting that as time passed the proportion of total funding dedicated to cathedral construction became less and less.

The clergy and their parishioners may have divided the funding so that one contributed more to the choir than the other, and vice versa. If it was customary for local parishioners to raise the funds for "their" end of the church, then new construction may have been instigated more by the clergy in the northeast and Oise and, after 1200, more by farmers and burghers in the west.

There is little direct evidence to prove this, but in one test I assumed that the twenty six bigger buildings on which more than 500 units were spent, being the cathedrals and the larger abbeys such as Saint-Remi and Braine, were in large measure paid for by the richer members of the community - be they noble or merchant - and that the smaller were funded mainly by local parishioners [b1].<sup>67</sup> Twenty-three percent of the total was spent on cathedrals and seventy-seven percent on parish and monastic churches. Only 5 of the 26 buildings costing more than 500 units lie in the north and northeast. The totals spent on each and the surges and dips are similar for both large works and small. But notice that a surge in parish work preceded any surge in larger constructions and, in reverse, continued well into the decades following parsimony by the wealthy. This suggests that enthusiasm by locals triggered the boom until a pull-back by the rich, after presumably drawing off many of the available builders, stifled it.

In the three major regions, the west, the northeast and the Oise, the numbers of churches under construction are in step with the amounts being spent [b2].



The decline in the northeast during the boom in the west is clearly shown, as is the relatively even rate in the Oise, which was in the first decades the most productive area. The recession of the 60s and 70s affected small works in all regions equally, suggesting that the people, and especially the wealthy peasants and merchants, were badly affected. This suggests that the depression was visited on everyone. There were no great wars nor crusades - indeed, the second, third and fourth of 1147, 1190 and 1202 occurred and were paid for without impacting on the moneys flowing to construction. If there was an effect, it was the reverse.

In the west, even allowing for the massive spending on the Paris and Chartres cathedrals, there was a gradual increase in locally funded work between 1180 and the 1220s, as there was in the number of churches under construction (increasing from thirteen to thirty-seven). After 1170 in the Paris small parish buildings have a distinctive character. They are squat dark and cave-like, not "Gothic" in style, as we usually define it. They do not soar to great heights with complex internal spaces and huge windows. They are simple in plan and the clerestories may be windowless or limited to small oculi. They would appear to

be a unique expression of the merchant and middle-class parishioners of an area that was becoming rich on the conquests of their king.<sup>68</sup>

In small buildings costing less than 500 units, more than thirty percent of funding was spent on naves in the 50s and 60s, and again after 1190. Meanwhile, after 1200 the number of regions in which more apses were added declined steadily compared to new naves, perhaps because most choirs had already been rebuilt.<sup>69</sup> The cost of these naves should not be underrated, for though usually simpler and less decorated than apses, and often unvaulted, they are much larger with two stories and aisles. In the core area (excluding only the Marne) thirty-five percent of parish expenditure went on naves, and outside the core area this reduced to twenty-five percent: Is this an indication that more popular wealth or enthusiasm may have been available in the core regions than beyond it? If naves were more likely to be funded by parishioners than choirs the sharp increase in nave construction could suggest a surge in burgher wealth - especially in the Ile-de-France where this happened between 1190 and 1230 - and the reverse a decline in their wealth - as happened in the Laonnais after 1200.

Towers and spires are more than an additional feature. They create an assertive mark on the environment, and may have had an even deeper psychological function. They accounted for one quarter of all expenditure during the century. It was the same almost everywhere, whether in the northeast or the Ile-de-France. Generally, towers are a phenomenon of the earlier decades, sixty percent being constructed in the first thirty years, though these years accounted for less than one third of all expenditure. Twenty-five percent of Soissonais churches built towers in the '40s, and less than one percent during the height of the boom in the '90s. To find they hardly exist after the 80s suggests a profound change in attitude and social views. Many years later tower building returned, but only in the Parisis, the Champagne and the Oise, and mainly in the smaller parish churches that border the important navigable rivers of the Seine and the Oise.

### General decline after 1220

After 1220 there was a steady and pervasive reduction in expenditure, with nearly all areas following the northeast in decline.<sup>70</sup> Only in the Brie, where church building had been slow to begin, was the recession less drastic than elsewhere. Thereafter a widespread change in building forms gradually emerged, as if in step with the reduction of available wealth. This is particularly noticeable in the enrichment of surfaces that would have been left plain and in the extension of tracery beyond the frame of the window. In many of the regions further from Paris it was also reflected in a "retreat from innovation" in which "variety vanished and provincialism held sway".<sup>71</sup> When a similar situation occurred in England during the 1130s and 40s, buildings tended to be "limited in scale and conservative in design".<sup>72</sup> By 1220 few capitals displayed the imagination of the boom times and, with few exceptions like Reims and the Sainte-Chapelle, foliate carving had become more pedestrian and repetitive. A cursory examination of the buildings erected during the rest of the century suggests that this decline continued to worsen and that expenditure was less after 1240 than at any time during the previous century. As Branner noted, "it was surely not a coincidence that among the architects whose names have come down to us, a good many of those working far afield came from the hamlets and small towns lying around the capital."<sup>73</sup>

This may be surprising to some as it has been assumed that the royal conquests at the turn of the century would have added enormously to the general wealth of the region.<sup>74</sup> But in spite of a massive increase in royal revenues, the general wealth of the citizenry seems to have declined sharply after the 20s.<sup>75</sup> The funding of major works became more reliant on donations from rich patrons.<sup>76</sup>

The decline in popular wealth may have been caused by the borrowing of the nobility for wars, crusades and pomp, which compelled them to demand money instead of services from their tenants and to revive the servitude of earlier times as this helped to transfer "the larger part of the profits of small cultivators into other hands."<sup>77</sup> By the middle of the century most of the French demesne was paying in cash. Similarly, after 1200 the large religious estates could no longer rely on lay brethren to work the fields, and had to hire labour. The result was to impoverish the independent husbandman and to transfer his surplus from church building into debt repayments for others.

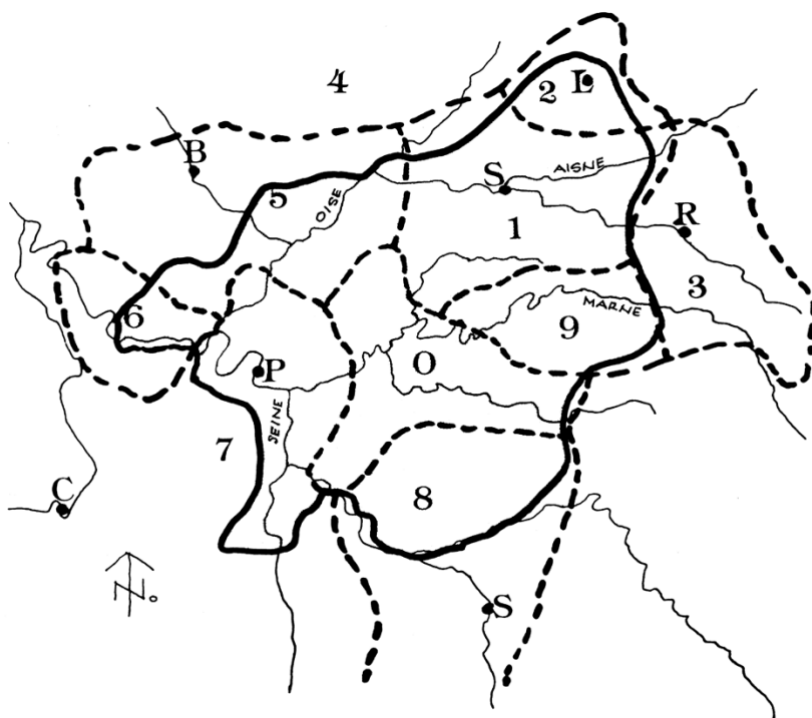
Another reason may be that disputes in the towns were often resolved by the intervention of the king, which placed the town deeper into the king's power, and his tax collectors. Hallam's comment that "Philippe's victory over John was due to sound finances" is another way of saying that he taxed efficiently.<sup>78</sup> Gradually the kings "multiplied the aids which they demanded from the bourgeois until they were ruined and had to beg the government to take over".<sup>79</sup> For tax reasons the granting of municipal freedoms was in decline from the time that the king felt secure, that is from 1220 onwards.

In Paris after 1200 the wealthiest burghers became less attached to their locality and more to the king. In losing their local base they may have given less to their parish. As parish churches made up sixty percent of all construction this had a marked affect on overall spending. It was indicative of the decline that "feudal collectors complained that receipts were diminishing".<sup>80</sup> The Champagne wars of inheritance 1213-1227 were "the most celebrated and most disastrous". Count Thibaut IV was involved in all the intrigues against

Blanche of Castile and the wars of her regency between 1226 and 1236. During the minority of her son, the future Louis IX, seven years out of ten involved costly wars. In earlier war-filled periods the special taxes imposed to pay for these wars seem to have had little impact on building, which suggests that the burghers would only have been hurt in the 20s if their wealth was already in decline.

The wars did not stop Blanche nor her powerful adversary Pierre de Dreux from each paying for one of the gigantic transept rose windows at Chartres at the height of their struggle.<sup>81</sup> Nor, once Louis was crowned, was there any indication that the royal coffers or those of the nobility had been seriously depleted, as evidenced in the costly and bejewelled Sainte-Chapelle in Paris and the "king's own" abbey of Royaumont. The later gothic architecture, that Robert Branner called Court Gothic, stands in somewhat solitary isolation.<sup>82</sup> The few buildings constructed in this manner were almost the only examples of building anywhere in the Basin. Nearly all parish and local church architecture had ceased by 1250, save for occasional small wings, a few added chapels, and such other work as required only modest and occasional funding. The great efflorescence of enthusiasm that had funded a great enterprise and had in the process created a new artistic idiom, was over.

Map of the regions. The solid line represents the approximate limits to *calcaire*.



- 1 "02 An investigation". My analysis follows the direction set out in James, *Pioneers*, 3-10. The figures in tables and charts include only the more significant churches marked with black dots in Map 2-1. See [COGA/map.php](https://www.creationofgothic.org/COGA/map.php)
- 2 The Paris Basin is the area of limestone formed by the Lutétien seas: Blondeau, *Lutétien*, 398.
- 3 The only exception to this is the chalk region along the Chalonais section of the Marne: James, "An investigation", 26-8.
- 4 Some of the biggest Gothic churches such as Amiens and Beauvais were built from local chalk.
- 5 In these notes COGA stands for <https://www.creationofgothic.org/COGA/>
- 6 "02 An investigation".
- 7 I first used the term *campaign* in James, *Contractors*, to describe a band of work executed by one team of men under the control of one master mason. In most buildings many campaigns were needed to complete each phase or project.
- 8 The database for <https://www.creationofgothic.org/COGA/list.php>
- 9 "Chartres was lucky"; James, *Template-makers*, 105-6, and 116, and *Master masons*, 133-38.
- 10 <https://www.creationofgothic.org/COGA/files/articles/DatingProcedures.pdf>
- 11 James, *The Ark of God*, 43-6.
- 12 The capitals in the Chars choir aisles are from 1170/75, whereas Paris was built in the 60s: James, *Ark of God*, 135-37; Cotte, *Eglise de Chars*.
- 13 Some of the earliest are in the Royal Portal at Chartres from 1140. From 1170 it was the standard form until after 1210. James, *Template-makers*, 92.



- 14 Bony, *French gothic*, fig. 106.
- 15 <https://www.creationofgothic.org/COGA/files/articles/Memes-and-assumptions.pdf>
- 16 James, *Contractors*. Dendrochronology in Prache, "Dendrochronologie", 75-80.
- 17 Collette Deramble, "Guillaume Le Breton et la chronologie de Notre-Dame de Chartres", *Notre-Dame de Chartres*, lxxvi, 1988, 11-16.
- 18 James, *Contractors*, 51-2. "The Golden Age of French Palatine sculpture should be dated primarily in the first two decades of the 13<sup>th</sup> century".
- 19 The Soissons ambulatory was begun before Chartres in the 1180s, and the Laon choir was extended in the 80s, not after the gift of the quarry in 1205. For Soissons: James, *Template-makers*, ch. 7; and for Laon *ibid*, 84, n. 6.
- 20 Redated to the 1150s; Clark and Ludden, "Saint-Anne" and Bruzelius, "Notre-Dame".
- 21 Braine was redated to the 1180s, placing it before and not after Chartres: Caviness, "St. Yved of Braine". Longpont was redated to the 1180s: James, "35 Canopy of Paradise".
- 22 Completed rapidly from 1152 to the mid 60s, except for the upper stories of the towers: Vermand, *Notre-Dame de Senlis*; "10 Cathédrale de Senlis"; and Verguet-Ruiz, "Cathédrale", 13-15.
- 23 "18 Flying buttresses"; Plagnieux, "Les arcs-boutants".
- 24 "1 Revised chronology".
- 25 Kraus, *Mortar*.
- 26 Similar methods as "38 What price the cathedrals?". Comments in Kraus, *Mortar*, 194 and 201; and Bucher, "Review of Kraus". Indeed, our understanding of medieval financial affairs shows no meaningful attempt could be made to relate medieval costs to modern ones: Von Simson, *Gothic cathedral*.
- 27 <https://www.creationofgothic.org/COGA/files/articles/What price the cathedrals.pdf>
- 28 I did attempt to assess the cost of replaced and destroyed buildings and concluded they made little difference to the overall conclusions.
- 29 For Cerseuil: James, *Template-makers*, 209-30; and for Chartres: James, *Contractors*. I give the list of campaigns at Cerseuil to illustrate how the number of units was determined. The three columns are for decade, number of units and section worked on.
- |      |    |                      |
|------|----|----------------------|
| 1140 | 6  | west wall, west door |
| 1160 | 5  | nave, arcade walls   |
| 1165 | 8  | nave clerestory      |
| 1155 | 3  | crossing, west side  |
| 1180 | 10 | south arm            |
| 1190 | 11 | apse to sill level   |
| 1200 | 6  | apse to roof         |
| 1210 | 10 | tower                |
| 1220 | 10 | north arm walls      |
| 1230 | 8  | north arm vaults .   |
- 30 "2 An investigation".
- 31 Bony, *French gothic*, 149; and Branner, "Romanesque sources".
- 32 James, *Template-makers*, 96.
- 33 James, *Contractors*, 554-55 and n. 53; Gem, "English architecture".
- 34 James, "An investigation", 18.
- 35 "2 An investigation", map 2-5.
- 36 In the core area there are 334 simpler to 478 interesting ones. Outside the core area there are 370 simpler to 191 interesting. The core area is smaller than the area outlined in James, "An investigation", 17, map I, for it is based on different criteria.
- 37 Miller, *Economic History*, vol. iii, 132.
- 38 "2 An investigation".
- 39 If the collégial of Mantes-la-Jolie is excluded the decline is much sharper into the depression of the 70s, and hardly improves thereafter.
- 40 Dion, *Histoire*, who quotes a contemporary poem on a competition between Parisian and northeastern wines of Laon and Soissons.
- 41 James and Gardner, "Count Galeran".
- 42 Vermand, *Saint-Gervais-Saint-Protais* and other works by Vermand.
- 43 Gardner, "Castle-building".
- 44 Dunbabin, *France in the making*, 295; Pacaut, *Louis VII*; and Hallam, *Capetian France*, 195.
- 45 John James, *The Creation of Gothic Architecture - an Illustrated Thesaurus: The Ark of God*, vols 1-2, Part A: "The Evolution of Foliate Capitals in the Paris Basin 1170 to 1250", London and Hartley Vale, 2002.
- 46 Hallam, *Capetian France*, 198.
- 47 Dunbabin, *France in the making*, 317.
- 48 James, *Template-makers*, 44-8. ARK
- 49 Barnes, *Soissons cathedral*, 2.
- 50 Barnes, *Soissons cathedral*, 37.
- 51 These will be discussed in my forthcoming "Inventing Gothic".
- 52 Dion, *Histoire*, 142-48.
- 53 James, "An investigation", map X, 32 and n. 125.

- 54 Lopez, *Commercial revolution*, 59.
- 55 An average of 44 units were spent on each church (excluding the cathedral) in the Laonnais during the 50s, while only 26 were spent in the Soissonais and 35 elsewhere.
- 56 Luchaire, *Histoire des institutions*, 325.
- 57 The limits to Early Gothic architecture coincides with the boundaries of the Lutetian limestone known as *calcaire*. James, "An investigation", 26-8.
- 58 "2 An investigation", Fig. 2-2.
- 59 "4 Chartres was lucky" with maps.
- 60 "2 An investigation".
- 61 Baldwin, *Philippe Auguste*, 347; and Fawtier, *Capetian kings*.
- 62 Félibien, *Histoire de Paris*, 256 *et seq.*; and Fawtier, *Capetian kings*. Though Baldwin, *Philippe Auguste*, states that the wall was paid for by the king.
- 63 Suggested by Johnson, "Cathedral building".
- 64 Kraus, *Mortar*, 169-71. His comment that "Parish churches were frequently called on to make great sacrifices over lengthy periods" may refer to later times as our figures wont support this. James, "An investigation", 22.
- 65 Kurmann, *Saint-Etienne*; Ravaux, "Cathédrale de Reims".
- 66 Add-a-Chapel method: James, *Template-makers*, 52-4.
- 67 Out of 624: Braine, Chalons-sur-Marne: Notre-Dame-en-Vaux, Chartres cathedral, Donnemarie-en-Montois, Dourdan, Essomes-sur-Marne, Etampes: Saint-Martin, Etampes: Notre-Dame, Ham, Laon cathedral, Laon: Saint-Martin, Larchant, Longpont, Mantes-le-Jolie, Noyon cathedral, Orbais-l'Abbaye, Paris cathedral, Poissy, Reims cathedral, Reims: Saint-Rémi, Saint-Denis-en-France, Saint Germer-de-Fly, Saint Leu-d'Esserent, Senlis cathedral, Sens: cathedral and Soissons cathedral.
- 68 James, *Template-makers*, 112-16.
- 69 Total of new naves to new apses is 306 to 523. On average 30 percent of construction was devoted to naves. Many more apses than naves were being started during the 40s while the proportion of new naves rose dramatically during the 50s, especially in the Reimois, and in the 70s and 1220s new naves accounted for almost half all starts. Considering the number of naves compared to apses, there are 3 naves to every 5 apses north of the Marne, and 2 to 5 in the Brie, Provins, Marne and Reimois areas. Transepts were built in 20% of churches in the northeast zone compared to seldom more than 5% elsewhere.
- 70 Illustrated in the number of burgher-funded chaplaincies in Paris: 335 in the 12<sup>th</sup> century, reduced to 63 in the 13<sup>th</sup> and then rising to 259 in the 14<sup>th</sup>: Kraus, *Mortar*, 219 n. 50.
- 71 Branner, *Saint Louis*, 25-9. Implied in "Gothic sculpture of the 1230s is rare in all parts of France": Branner, *Chartres cathedral*, 86.
- 72 Gem, "English architecture", 40.
- 73 Branner, *Saint Louis*, 6 mentions Robert de Luzarches, Renaud de Montgeron, Pierre d'Angicourt and Etienne de Bonneuil.
- 74 As in "the enormous riches brought into the capital by the French conquests funded a great multitude of parishes, convents and abbeys": Kraus, *Mortar*, 27.
- 75 The capture of Normandy alone doubled the royal revenues: Strayer, "Normandy". Perhaps, as today, the general public gets poorer as the upper classes get richer, or were people investing in other ways rather than in churches, such as hospitals and palaces, or was money being sucked out of the system by war and drought? All these questions lie ahead of us. Kraus, *Mortar*, 27.
- 76 Kraus, *Mortar*, 20-1; Branner, *Saint Louis*, 8 and 32; a dozen royally funded works in the city of Paris are listed David-Roy, "St. Louis".
- 77 Duby, *Rural Economy*, 252.
- 78 Hallam, *Capetian France*, 165.
- 79 Fawtier, *Capetian kings*, 126.
- 80 Luchaire, *Histoire des institutions*, 409.
- 81 Frankl, "Stained glass".
- 82 Branner, *Saint Louis*, 85-111.