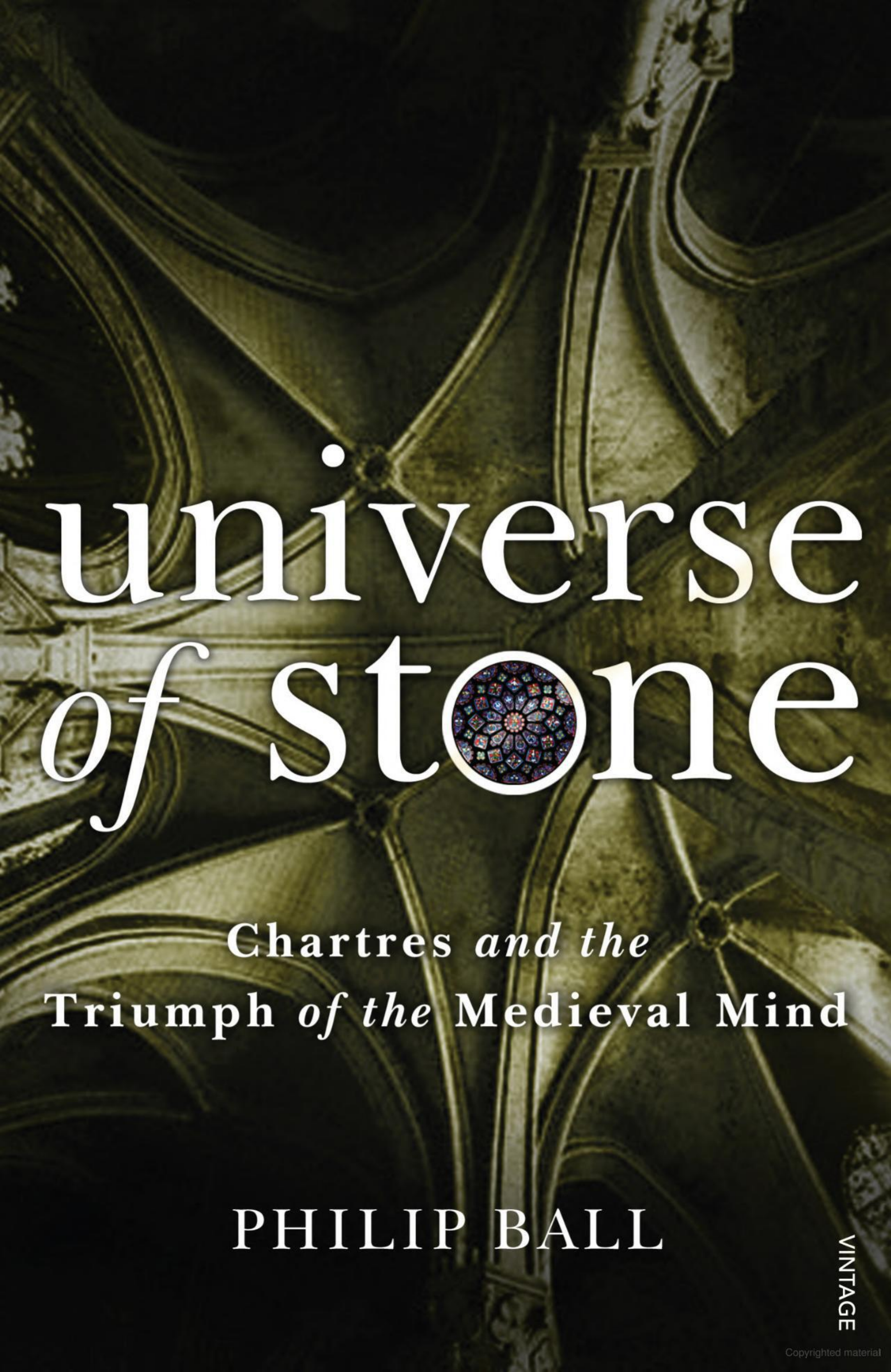

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Chartres *and the* Triumph *of the* Medieval Mind

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PHILIP BALL

Universe of Stone

Chartres Cathedral and the Triumph of the Medieval Mind

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Introduction

In 1204 some of the finest churches in Christendom were ransacked and the precious icons and relics were divided up among the plunderers. They snatched reliquaries from altars, forced open chests filled with holy treasures, stripped gold and silver metalwork from church fixtures. In their haste they spilled the sacramental wine over the marble floor, where it might mingle with the blood of any priest who stood in their way.

But these marauders were not infidels. They were Christian knights of the West, the flower of Europe's chivalry, bearing the sign of the cross that identified them as Crusaders. For this expedition, the Fourth Crusade, went not to the Holy Land and Jerusalem but to Constantinople, the capital of the eastern Holy Roman Empire, where the schismatic Greek rulers refused to recognize the authority of Pope Innocent III.

This was not the only crusade underway at that time. There was another afoot in Europe itself, and it was concerned not with sacking churches but with building them. Just as the knights of France, England and Germany were despoiling the gilded splendour of the Hagia Sophia, builders in their homelands were inventing a new architectural style that would rival the glories of Byzantium. Over some three hundred years, the Europeans engaged on a 'cathedrals crusade', building churches on a scale never again equalled either in size or in quantity. In France alone, eighty cathedrals, five hundred large churches and several thousand small churches were constructed between 1050 and 1350. At the end of this period there was, on average, a church for every two hundred inhabitants of France and England.

And these were not squat and gloomy edifices in the style we now know as Romanesque, but towering monuments of stone and glass, filled with light and seeming to ascend weightlessly towards heaven. They were the Gothic cathedrals. Now considered the finest works of medieval art, these churches are even more than that. They represent a shift in the way the western world thought about God, the universe and humankind's place within it.

The Gothic Myth

Our contemporary view of that transformation is obscured by a lot of rubble. Much of it was deposited in the nineteenth century, whose historians, artists and architects, in the course of rescuing the Gothic style from ill repute, laid down a mythology about what it represents. When we think of a cathedral today, it is a Gothic building that comes to mind, not the heavy Romanesque precursors. And for many of us this vision is embodied in a specific edifice, standing in what has been rightly called 'splendid isolation' on the Île-de-la-Cité: Notre-Dame de Paris, immortalized by Victor Hugo in his eponymous novel of 1831.

Hugo's book wasn't simply a work of fiction – it was a meditation on architecture in general, and on the architecture of the Gothic age in particular, and it defined a vision of these things in the same way that Dickens described a version of London that has now become inseparable from that city's stones. For Hugo, the Gothic cathedral was a social construction, a temple made for and by the people rather than decreed by an ecclesiastical elite. That image chimed very much with the tenor of post-Revolutionary France, and it gave rise to a myth of the cathedral that is still pervasive today. 'The greatest works of architecture', said Hugo,

> are not so much individual as social creations; they are better seen as the giving birth of peoples in labour than as the gushing stream of genius. Such works should be regarded as the deposit left by a nation, as the accumulations of the centuries, as the residue of successive evaporations of human society, briefly, as a kind of geological formation.

It's not just Hugo's exquisite prose that makes the idea seductive. We can feel a little less overwhelmed by the stupendous scale and structure of the cathedrals of Notre-Dame de Paris, Strasbourg and

Chartres, if we can indeed regard these buildings as something geological, created by the immensity of time and the energy of countless generations, rather than as objects that were conceived in the minds of a handful of men and constructed by labourers stone by stone. And we need not feel oppressed by their colossal size if, like Hugo, we believe that in the Gothic era 'the book of architecture no longer belonged to the priesthood, to religion or to Rome, but to the imagination, to poetry and to the people'.

Hugo was not the first to voice these views, but no one had previously found words so compelling, and he made them so familiar that a whole generation of French intellectuals, historians and artists fell under their spell. For Eugène Viollet-le-Duc, the great nineteenth-century restorer of French Gothic buildings, Hugo's reading of the Gothic cathedrals meant that they became national monuments and 'a symbol of French unity'. If this belief helped Viollet-le-Duc return some of France's great churches to a state approaching their former glory, we have reason to be grateful for it. But that does not make it any less a facet of the romantic myth of the cathedral.

It is hardly surprising that historians of 150 years ago needed to have some story to weave around the Gothic cathedrals. These monuments seem to sit in defiance of the traditional narrative we have spun about western history, in which the Middle Ages separate the wonders of Greece and Rome from the genius of the Renaissance with an era of muddle-headed buffoonery. We are even now apt to forget that it was the Renaissance historians themselves who constructed this framework. Today, however, there is no shortage of alternative stories to replace that created by Hugo and his contemporaries – and each tells us something about our own times, regardless of how much light they shed on the High Middle Ages. And so the cathedrals become cryptograms of ancient, sacred knowledge; or they are symbols of church oppression; or they are testaments to the skills of the medieval engineers. Many of these stories have some truth in them; none gives us the full picture. That, after all, is what all great works of art are like: they are never unlocked by a secret code, but they may be enriched by repeated viewing, first from this angle, then from that. Knowing 'how' and 'why' they were created does not allow us to understand them fully, but it may inspire us to love them more ardently.

Why Chartres?

It feels like heresy to say so, but there is something not quite Christian about Chartres Cathedral. Or perhaps one should say that it is somehow super-Christian, a place that connects the central spiritual tradition of the western world to a more ancient, strange and mysterious narrative. People have always seemed to sense this; it is not only in modern times that Chartres has become a nexus of theories about mystical symbolism, hidden codes and vanished wisdom. You will understand why this is so when you go there. There are few buildings in the world that exude such a sense of meaning, intention, signification – that tell you so clearly and so forcefully that these stones were put in place according to a philosophy of awesome proportions, appropriate to the lithic immensity of the church itself. This is partly a happy accident: unlike most medieval churches, Chartres is no palimpsest but nearly a pristine document, miraculously preserved from a distant world, bearing a message that is barely diluted by other times and tastes and fashions. But the power of Chartres does not stem simply from its fortunate state of preservation, for even in its own time Chartres made a statement of unprecedented clarity and force.

No wonder people have argued for hundreds of years about what Chartres Cathedral 'means' (and still show no sign of reaching an agreement). From the moment you see the spires rise up on the horizon across the plains of Beauce, you can't avoid the question. It is all too easy to get carried away – to imagine, say, that there are supernormal forces whirling around those pale towers or slumbering in the ancient well, or that there is some occult cipher that will unveil the secrets locked into the shapes of the stones. The cathedral and its history have been repeatedly romanticized, as though there was ever a time when workmen did not grumble while they toiled and when priests were no less fallibly human than they are today. The incomparable windows and the astonishing labyrinth tempt us towards interpretations both fanciful and naïve, and the temptation has frequently proved too great. We have to come to Chartres prepared to admit that there are many things we do not and may never know, and that such answers as we have are not always simple or secure.

It may come as a disappointment that we must relinquish notions of 'sacred geometry' and hidden codes (I don't anticipate that everyone will readily do so), but it should take only a little sober reflection to realize that the past is not profitably understood through such simplistic formulas. What is perhaps more alarming is the number of apparently respectable and frequently recycled ideas about both Chartres in particular, and the whole Gothic enterprise in general, that turn out on close inspection to be built on sand. This debunking is the work of several careful scholars, and none of the credit belongs to me. But it is often in the nature of such efforts that they must focus on the demolition and forget about reconstruction, and sometimes they demolish more than is truly needed. I want to make it clear at the outset that the definition, meaning and chronology of Gothic are subjects that have spurred some bloody conflicts – parts of this literature are hardly for the faint-hearted. There are few points of view that have not suffered the withering dismissals of eminent and formidable critics.

Arguably, then, it is a foolhardy endeavour to say anything about 'why' Chartres Cathedral was built, which is in the end what this book attempts to do. But to my mind, it is only by confronting that question that we can fully experience what this most extraordinary, most inspiring building has to offer. Guidebook chronologies and ground plans will not help you with that, and there seems to be little point in knowing that you are standing in the south transept or looking at St Lubin in the stained glass or gazing at a vault boss a hundred feet above your head unless you have some conception of what was in the minds of the people who created all of this.

The answer is not easily boiled down. It is only by embedding the church in the culture of the twelfth century – its philosophies, its schools and its politics, its trades and technologies, its religious debates – that we can begin to make sense of what we see (and what we feel) when we pass through the Royal Portal of the west front. Within the space of a hundred years, this culture was transformed from inside and out; and that transition, which prepared the soil of the modern age, is given its most monumental expression in Chartres Cathedral.

This transformation was fundamentally intellectual. It was not until the start of the second millennium after the crucifixion of Christ that the western world dared to revive the ancient idea that the universe was imbued with a comprehensible order. That notion flourished in the twelfth century, fed by an influx of texts from the classical world, preserved by the Islamic scholars and now becoming available in Latin translation. But not all the learning of the High Middle Ages was second-hand; among those who read the works of Plato, Aristotle, Euclid, Ptolemy and Archimedes were some men with ideas of their own, who posed questions that could only have been framed within a strongly monotheistic culture and yet which presented new challenges to old ideas about God's nature and purpose. From this ferment issued a strand of rationalism that sat uneasily with any insistence on gaining knowledge through faith alone.

This shift of inner worlds cannot be divorced from events in the sphere of human affairs. Wealth and commerce fostered new ideas, not only because they lightened the burden of terror that had previously made Christians little more than supplicants to a grave and unfathomable God, but also because trade opens doors for cultural exchange. And churches could not be built without money. We should not forget also that cathedrals were expressions of prestige, reflecting glory onto kings, nobles and bishops. This is why it is not enough to say that the Gothic cathedrals offer a vision of a coherent universe – they did not erect themselves, and bookish monks were in no position to dictate their design. Yet equally, it makes no sense to look for explanations of these greatest of the medieval works of art that do not encompass something of the conceptual and philosophical matrix in which they appeared. The programme of this book, then, is to show how these elements – the spiritual, the rational, the social and the technological – came together in twelfth-century Europe to produce a series of buildings that are unparalleled in the West, and to which frankly we are now quite unable to offer any rivals.

While I shall begin this journey among smouldering timbers in late-twelfth-century Chartres – a disputed territory on the fringes of the land that the French kings could realistically consider to be under their authority – we will need to take some substantial steps backwards in order to appreciate what it meant to undertake a cathedral-building project in the 1190s. First we will follow the emergence of the characteristic features of the Gothic architectural style, for it is as well to have our subject clearly in sight from the outset. Then we shall see what a many-faceted creation a medieval church was, at the same time thoroughly mundane and deeply symbolic. This latter 'representational' aspect of the cathedral requires that we examine the philosophical and theological currents of the twelfth century, noting what these took from antiquity and early Christian thought, and discovering that this was an age when old certainties were being uprooted and new ways of thinking were provoking furious disputes about the nature and the boundaries of intellectual enquiry. In many ways these changes culminate at Chartres in the middle of that extraordinary century, at the height of this first renaissance and at the dawn of the Gothic era.

From the abstract notions of the philosophers and scholastics, I shall turn to the practical business of building, looking at the issue of how the cathedrals were erected and who designed them. Here we enter disputed territory of a more contemporary kind, when we are forced to ask how far and in what ways the worlds of the theologian, philosopher, architect and mason overlapped. Let me say now that there is no consensus on this question, although a great deal of the weight of interpretation rests on it. Moreover, it seems certain that the answer for the twelfth century would not be the right one for the fourteenth. In much of the literature dealing with these issues, one can say with some confidence that the more definitively a view is expressed, the more likely it is that it represents wishful thinking. That doesn't mean we have to surrender to ignorance, for we can recreate a picture of these interactions between different professions and authorities that is rich and varied, even if it cannot yet, and may never, throw into sharp relief what transpired on (and behind the scenes of) the building site at Chartres.

I will also examine a rather different facet of the intellectual trade between scholar and craftsman, manifested in the most glorious features of this jewel of Gothic building: the spellbinding windows of Chartres. And then finally we shall see the cathedral completed amid civic discord that undermines popular myths about the communal nature of the project.

Along the way, we will pass through the cathedral itself. Each chapter begins with an examination of some aspect of the church, looking at its history, its significance and perhaps its mythology. But of course words are a poor substitute for the train ride that, in less than an hour, takes you from Paris to the threshold of a marvel.

I

The Isle Rises

Chartres in the Kingdom of France

Then they took the holy tunic
From the mother of God, who departed . . .
The Lady who wore it
When she bore the Son of God
Thought it would be put
At Chartres, in her main church,
And that it would be preserved
In the place of which she is called the Lady.
Jean le Marchand, 1262

The Sacred Tunic

Like countless other churches in France, the cathedral of Notre-Dame de Chartres is a temple to the Marian cult of the Middle Ages, dedicated to the mother of Christ. In 876 Charlemagne's grandson Charles the Bald, king of the Carolingians, gave to the bishop of Chartres the cathedral's most holy relic: the tunic or *camisa* said to have been worn by Mary at the time of the birth of Jesus (or some say, the Annunciation). This *Sancta Camisa* had been given to Charlemagne himself by the Byzantine emperor Nicephoras and his wife Irene when the first Holy Roman Emperor passed through Constantinople on his way back from Jerusalem. It is not exactly a chemise, but more of a robe or wrap: a length of faded cloth about 5 metres (16½ feet) long, frayed at the ends, which is now preserved in a reliquary in the north-eastern chapel of the apse.

According to the seventeenth-century French historian Vincent Sablon, Nicephoras claimed that the Virgin, shortly before her death, asked the apostles to give her clothes to 'an honest widow who had always served her from the time her Son had returned to His Father'. Miracles were associated with the *camisa* while it was in Palestine, but 'with the passing of time, the clothes went through many hands'. Then two brothers from Constantinople, while on a pilgrimage to Jerusalem, stole the garment in its reliquary from a Jewess who was its guardian and carried it back home. Although there they tried to hide away their precious booty, 'the tunic made itself known by several miracles', drawing the attention of the emperor, who took it from the thieves and placed it in a temple specially built to house it.

The crypt of Chartres also houses a wooden statue of the Virgin, Our Lady of the Crypt – not a precious ancient relic but a modern copy of a copy, for the ancient statue, probably dating from the twelfth century but copied from one older still, was burned by Revolutionaries in 1793.

The sacred relics of a medieval church were at the same time a measure and a determinant of its status, not only to its priests and congregation but also, they suspected, in the eyes of God. And so the clergy were keen to advertise them, mindful that this would draw donations from pilgrims, from nobles and from princes and kings who hoped to secure divine favour. From the ninth century, Chartres became linked with a cult of the Virgin that extended throughout Europe, and it seems likely that the clergy were keen to exploit this association. There is evidence in the design and the iconography of the church that they sought to manipulate the character of the Marian cult at Chartres so as to establish it as something unique and not just one pilgrim destination among many.

That was a delicate game. The local cult of the Virgin may have owed more to folklore than to Christian piety: it appeared to be centred on a sacred well beneath the cathedral, and on the wooden statue, probably one of the black madonnas of pre-Christian origin. People in this rural community fondly believed that the Virgin could intercede directly on their behalf, an idea that tended to bypass the authority of the bishop and priests. And so the churchmen aimed at the same time to use and to undermine this cult: to promote the status of Mary, but only in so far as it was controlled and sanctioned by the Church. In 1259 they ordered a new reliquary to be made for the *camisa*, concerned that it should be presented to maximum effect. And as the Marian cult gained pace in the early thirteenth century, the manipulations of the Chartrain clerics can be discerned in the imagery of the building. In the façade of the south transept, dating from the 1210s, she is shown alongside Christ during the Last Judgement, implying (without biblical justification) that she would be there to offer a good word on behalf of those who had venerated her on earth.

The town adapted to the idea that Chartres was the essential destination for the discerning Marian pilgrim. It had its souvenir vendors like any tourist centre today: pilgrims could buy items based on the Sacred Tunic, such as shirts blessed by a priest, which were thought to confer protection in battle. On several occasions (so the records insisted) the *camisa* gave such protection to the town itself, and some believed that the fortunes of Chartres were bound up with this swathe of holy fabric.

It is often said that the eleventh and twelfth centuries were a time of great change for the kingdoms of Europe; but the fact is that no century had resembled the preceding one ever since the Christian world began (and for long before that). The difference was that, after the turn of the millennium, change was often for the better.

The Carolingian Empire, racked by internecine conflict after Charlemagne's death, foundered in the ninth century before the onslaught of Viking freebooters, who plundered Flanders and Bordeaux, sacked Paris, and forced the Franks to cede the region later known as Normandy. Meanwhile, Magyar bands from the east roved murderously through Saxony, Bavaria, Aragon and Aquitaine. These barbarian raids left much of Christendom cowering in fear, preventing any real intellectual or spiritual progress until the Ottonian kings revived the aspirations of the Carolingians in Saxony in the mid-tenth century.

It wasn't just the threat of invasion that spread terror through early Christian Europe. Famine was equally lethal, more common and harder to flee. The prevailing agricultural methods were poor and yielded a harvest that barely fed the population, small though it was. But the eleventh century brought increasing social stability and economic growth, thanks in part to agricultural innovations. The introduction of improved harnessing of draft animals meant that ploughs could be drawn by horses rather than oxen. Three-field crop rotation methods, the asymmetric plough and the scythe also played their parts in raising yields, in some cases doubling or even tripling them.

At the end of the tenth century, sovereigns were nominal and had little real power. The feudal manor, with its more or less self-sufficient community of peasant serfs, formed the basis of this agrarian society. Yet kings were no longer content to be tribal chieftains or warrior-lords; they considered themselves the successors of the Roman emperors, and wished to be seen as wise and erudite. And so they learnt Latin and studied the liberal arts under the greatest scholars. (Charlemagne, for all his approval of scholarship, remained illiterate.) They patronized the best artists and craftsmen, and in the royal courts of the western world there arose the romantic ideals of chivalry, celebrated in poetry and song.

Ecclesiastical power structures were changing too. Formerly, the rustic communities of the monasteries had represented the spiritual and scholarly centres of the Christian Church. But increasingly the bishops, not the abbots, held most influence, and so the cathedrals, located in larger towns, came to provide the focus of religious life. While Romanesque was primarily the style of the monasteries, situated in rural regions, Gothic was an urban style: less mystical and inwardly focused, more rational and worldly.

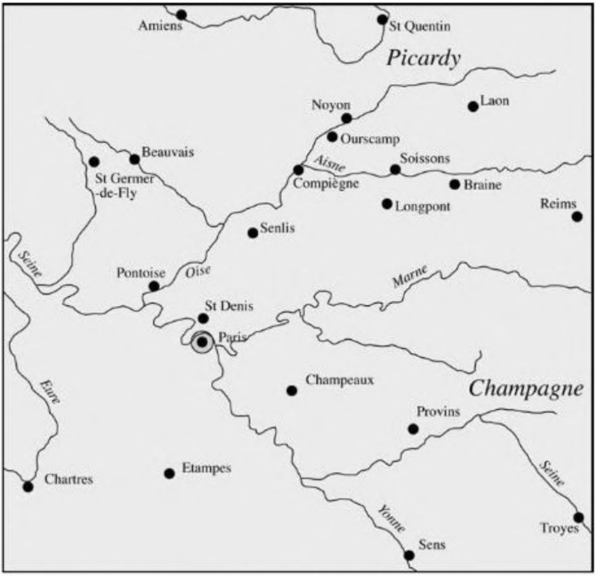
From the beginning of the twelfth century the towns were the vital organs of a kingdom. That had arguably been the case in antiquity too, but one of the symptoms of the dissolution of the Roman Empire was the decline of the great towns. Previously administrative centres, these walled settlements were left with no role as centralized government dissolved and working the land became the only way to fill your belly. Within the civic perimeter of tenth-century Beauvais, one estimate suggests that there dwelt a population (excluding clerics and knights) of barely three hundred people.

Economic growth changed all that. Formerly the seats of regional government, towns became self-sustaining centres of wealth: they were their own *raison d'être*. These were the places where money changed hands, where deals were done, and where life was (for some at least) not the relentless hard grind of the peasant but the convivial existence of the merchant. Money began to replace land as the basis of prosperity. Between the eleventh and the early fourteenth centuries the population of France is estimated to have roughly doubled, and much of this growth was concentrated in the towns and cities, where the increases were greater still. Construction on the scale of the cathedrals crusade would have been inconceivable without this new confidence and prosperity.

Feudalism was a system suited to the countryside; the towns challenged it. When they were depopulated, some towns retained no figure of authority except the bishop, who took advantage of that situation to build a power base and wrest control from the lords and nobles. At Noyon the bishop even styled himself a count. The citizens too found the opportunity to free themselves from feudal ties – towns began to declare themselves communes, unfettered by allegiance to a lord. Some historians now believe that these changes in Europe's social structures were more profound than anything that occurred during the barbarian invasions of the fifth century, which were in truth more of a transfer of power and spirituality to a new set of rulers within a culture that was merely degraded rather than transformed. In that sense, the transition from the ancient to the modern European world took place not via some fictitious 'dark age' but as a result of the social and economic upheavals of the tenth and eleventh centuries.

The New Kings of France

The cathedrals crusade, like several of the military ones, began in France: at the very heart of the French kingdom, in the region within about a 50-mile (80-km) radius of Paris known as the Île-de-France. This was the domain of the House of France, the line of Capetian kings begun by Hugh Capet ('the caped'; *c.*938–*c.*996), who inherited the Frankish kingdom of the Carolingians.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Pontoise
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Marne
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Champagne
Provins
Chartres
Etampes
Seine
Yonne
Troyes
Sens

The Île-de-France and its environs in the twelfth century.

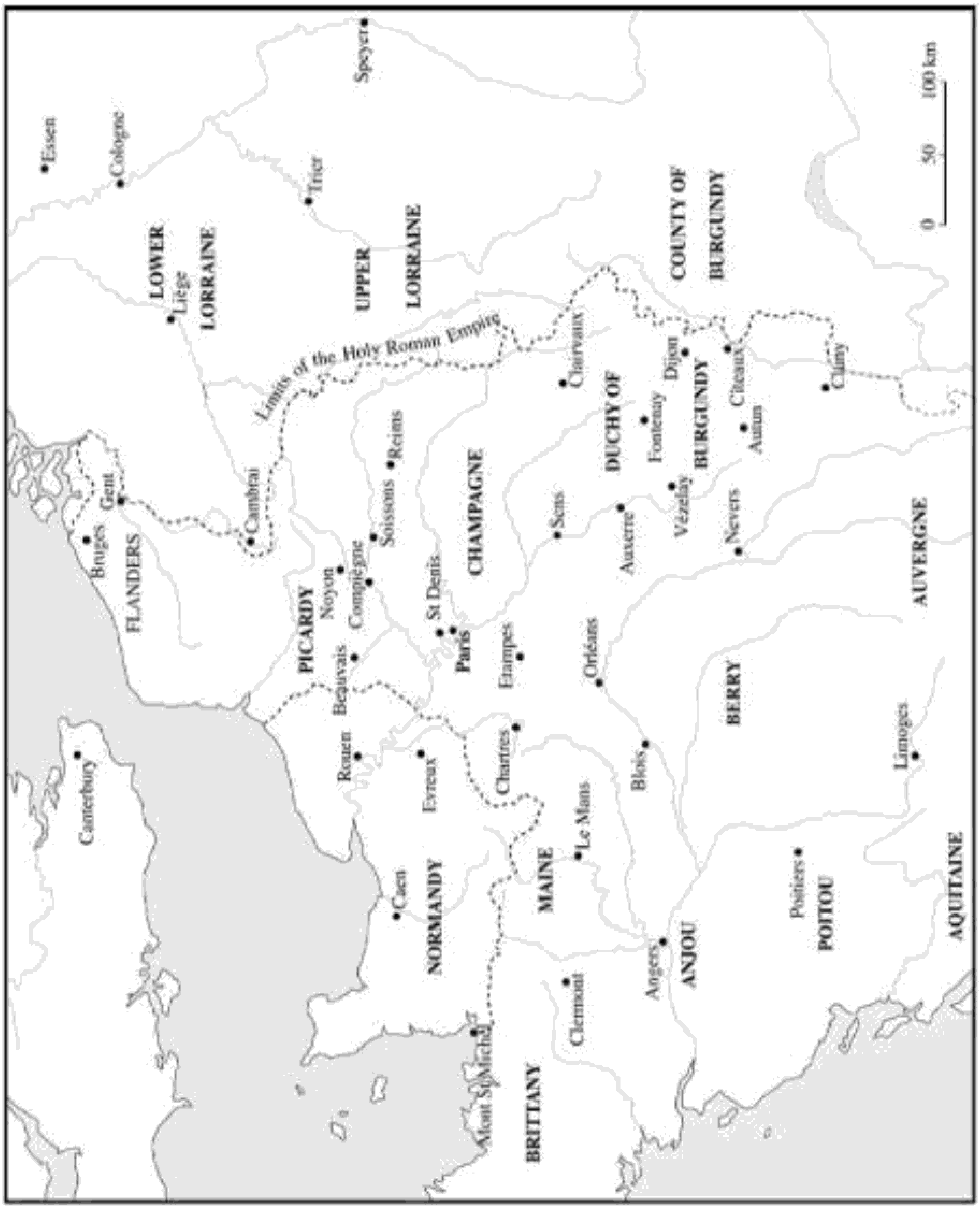
The Capetians had lofty ambitions, inspired by dreams of Christian chivalry that turned to grim and bloody reality during the Crusades. The Holy Roman Emperor was a German, true enough; but to Louis VI of France (who ruled from 1108 to 1137) it was the French king who was the real heir of Charlemagne. Was it not Charlemagne's father Pepin, king of the Franks, who had been designated 'protector of the Romans' in the mid-eighth century, when he defeated the barbarous Lombards? Was it not Pepin's son who was crowned first Holy Roman Emperor on Christmas Day of 800 by Pope Leo III?

Yet it was a very modest empire that the French kings now ruled. Nominally it extended from Toulouse to the Low Countries, but the royal authority was effectively ignored in the duchies of Normandy, Brittany and Aquitaine and the principalities of Champagne, Flanders, Poitou, Anjou and Blois-Chartres. Some of the princes and dukes of these lands wielded more power than the king himself. They outclassed the Capetians in both political acumen and economic strength, and they neither feared nor respected their ostensible monarch. The chronicle of the abbey of Morigny from the early twelfth century says that Count Thibaut IV of Blois and Chartres 'rebel[s] against the king as if by hereditary right'. Rebellious lords had little interest in usurping monarchical power, however. They accepted that the king had his place; but that place was to sit in the royal court and wear a crown, and not to tell them what to do.

Thibaut was the sharpest thorn in the king's side. His lands cut across the route between Paris and Orléans, the two royal capitals. Chartres itself held an ambiguous position, for as the seat of a bishop it was the place where the count's authority was weakest. Louis clashed with Thibaut shortly after the two had united to crush the brigand lord Hugh de Puiset. Thibaut took umbrage at the king's refusal to let him occupy the territory of Le Puiset, which was a royal fiefdom, and with the help of his uncle Henry I of England he began to wage war against Louis. When the count was defeated in battle at Lagny, his principality suffered: according to a contemporary account, the king 'devastated all his lands, both in Brie and in Chartres'.

Such were the relations between Paris and Blois-Chartres for much of the early twelfth century. But as the prestige of the Capetians waxed, their troubles with the Thibautiens came to an end. Abbot Bernard of Clairvaux, the mastermind of the Cistercians, initiated a reconciliation at the consecration of the new church of Saint-Denis in 1144, and in 1160 that alliance was sealed by the marriage of Louis VI's son Louis VII to the sister of Thibaut IV's successor Thibaut V. The count in turn wedded the king's daughter Alix and became royal seneschal; he become known subsequently as 'the Good', a reminder of how history is written by the victors. Meanwhile, in 1165 his brother, known by the picturesque title of William of the White Hands, was made bishop of Chartres.

The new church-building style that started to crystallize in and around the Île-de-France at this time reflected the fresh confidence of the French monarchy, which was echoed in the intellectual and economic vitality of the region. This was the ideal launching ground for a radical departure from tradition, and it hosted all three of the great High Gothic cathedrals: at Reims and Amiens, and, before them, at Chartres.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Speyer
Trier
LOWER LORRAINE
Liège
UPPER LORRAINE
COUNTY OF BURGUNDY
Limits of the Holy Roman Empire
Clairvaux
Dijon
Cîteaux
Cluny
DUCHY OF BURGUNDY
Fontenay
Autun
Vézelay
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Sens
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Le Mans
MAINE
Caen
NORMANDY
Clermont
Angers
ANJOU
Mont St Michel
BRITTANY
BERRY
AUVERGNE
Limoges
Poitiers
POITOU
AQUITAINE
0
50
100 km

The kingdom of France in the twelfth century.

Carnotum

The Romans knew the river Eure as Autura, and the town situated on that river some 50 miles (80 km) south-west of Paris was called Autricum. The Gauls of this region were the Carnutes, which was why by the fourth century the town was known instead as Carnotum. It was said to have fostered a pagan cult of the goddess, and legend has it that by 100 BC a Druidic shrine and spring sacred to a virgin mother existed on the site where a Christian church was later built. Although still enthusiastically repeated to this day in support of Chartres' mystical roots, the idea owes less to history than to a misunderstanding of Caesar's writings on the Gauls by the fifteenth-century chancellor of the University of Paris, Jean Gerson. His error was compounded in later years, particularly in the rather fanciful accounts of the history of Chartres by the seventeenth-century French historians Sébastien Rouillard and Vincent Sablon. If the Druidic connection is mere fable, however, the spring is not, for there was truly a sacred well in the cathedral, the remains of which are still there today.

The town was probably converted to Christianity during the fourth-century evangelization of Gaul; certainly there was a bishop at Carnotum by the fifth century, and therefore its church was a cathedral. Like most early Christian churches, it would have been a protean construction, made of wood and vulnerable to fire and war. In 743 there is a record of the cathedral being sacked by the duke of Aquitaine, and it was destroyed again by an army of Danes in 858. By then, the church was already dedicated to the Virgin Mary – it is called the 'Church of St Mary' in a royal decree from Pepin's court in the eighth century – and the town was called Chartres.

The acquisition of the *Sancta Camisa* in the latter part of the ninth century was deemed to give Chartres divine protection from such outrages. In 911 it was besieged by a Viking leader named Rollo or Rollon. When the bishop, Gantelme, ordered that the relic be brought up onto the city ramparts and shown to the attackers, they fell into disarray and fled. Rollo himself converted to Christianity and in that same year he was made the first duke of Normandy, the province of the Norsemen, by Charles III of France. The *camisa* saved Chartres again in 1119 when Louis VI prepared to besiege his foe Thibaut IV, who was encamped in the town. A procession led by the clergy, flaunting the precious relic at its head, persuaded the king to relent. (The trick did not work again fifteen years later, when the king again found cause to besiege Chartres and its lower quarters were badly damaged by fire.)

Whether by God's providence or not, Chartres prospered from the tenth century. The towns of the Île-de-France benefited from the burgeoning trade in wool from England and Flanders, which was turned into textiles and sold to merchants from the south of France and the Mediterranean. And the intellectual reputation of Chartres, which remained unequalled in France until the end of the twelfth century, was established when the talented Italian scholar Fulbert came from Reims in the 980s to lead the cathedral school. Fulbert turned it into one of the greatest centres of learning in Europe, and in 1006 he was made bishop of Chartres.

In 1020 the cathedral was once again consumed by fire on the eve of the Festival of the Nativity of the Virgin, and this gave Fulbert the opportunity to commission a much grander building. 'The church was not simply burned, but actually totally destroyed', says a contemporary document called the *St-Aignan Chronicle*. 'The bishop Fulbert, through his diligence, efforts, and material contributions, rebuilt it from the ground up and, once raised, practically saw it through to a state of wondrous greatness and beauty.'

To finance his ambitious scheme, Fulbert requested funds from King Robert II 'the Pious', the second of the Capetian monarchs. As the chronicle records, the bishop also swore to give over his personal income to the reconstruction of the church. 'Since I do not have the wherewithal to restore it in a fitting manner', he told the king, 'I refuse to allow myself even necessary funds. I am giving much thought to the possibility of obtaining at my effort, no matter how strenuous, help in restoring the church.' Fulbert obtained further contributions from the dukes of Aquitaine and Normandy and the count of Chartres-Blois; even King Canute of England donated gifts. Fulbert made sure to show his sponsors that their money was being well used – as the building work proceeded, he wrote to William of Aquitaine, saying, 'By the grace of God along with your aid, we have completed our crypt and have taken pains to cover it over before the rigours of winter damage it.'

The architect, a man named Beranger, retained the small crypt of the old Carolingian church but extended it into a much larger space, vaulted in the Romanesque manner. Beranger's crypt is the only part of Fulbert's church that still survives today. But because the Gothic church was built over it, the Gothic plan was to some extent dictated by this early Romanesque structure. This must be borne in mind when seeking to interpret the Gothic design in terms of late-twelfth-century architectural practices, for the Gothic builders at Chartres were unusually constrained in what they might do.

Fulbert died in 1028, just before his new church was completed. An eleventh-century miniature painted by a monk named André de Mici soon after Fulbert's death shows him conducting a service with the new church over his head, complete with western towers, aisles flanking the nave, and a characteristically Romanesque eastern end with its radiating chapels. The north-west tower was destroyed by fire just a year later, but nonetheless the church was ready to be consecrated in 1037 by Fulbert's successor, Bishop Thierry.

Out of Ashes

Early medieval bishops might set their sights on eternity, yet they had little cause to trust that their wooden churches would outlast a generation. Even a preponderance of stone was no guarantee of permanence: plenty of monumental Gothic buildings have been neglected and have descended into ruin, and others have been shattered by the violence of war and revolution. But when the clergy of Chartres undertook once again, at the end of the twelfth century, to repair the terrible damage to their church, it was the last time they would have to do so. Chartres Cathedral has not emerged unscathed from the intervening centuries; like any other church of the Gothic age it has suffered insults both planned and accidental. Yet its fabric, pieced together from dense limestone in the twelfth and thirteenth centuries, remains substantially intact as the best surviving example of High Gothic architecture, seeming in its vastness to assert imperviousness to time and flame. If that appears miraculous, perhaps it is because the cathedral itself was born from miracles.

And my admiration is compelled irresistibly.' Beneath the vaults of Chartres, Napoleon Bonaparte said, the atheist would feel uneasy.

Chartres quotes from earlier examples of Gothic church-building – from Saint-Denis, from Notre-Dame de Paris, and from its near contemporaries, the cathedral at Soissons and the abbey church of Saint-Yved at Braine in Aisnes. But it was the largest and most awesome cathedral begun in the twelfth century, filled with touches of striking originality, and it set a standard that subsequent Gothic buildings struggled to surpass. There would be longer and wider naves (that at Chartres is about 110 m long [360 feet] and the central aisle 16.5 m [54 feet] wide), and higher vaults (those at Chartres rise to a height of 35.5 m [116½ feet]), but there is no church that can surpass the sense of clarity and harmony evoked in the nave of Chartres – especially if you are lucky enough to visit at a time when there are no chairs set out for a service, and you can see the space almost as it would have appeared to worshippers in the thirteenth century. 'Both Bourges and Chartres were thought through completely, down to the last detail', says the French art historian Jean Bony. Nothing is superfluous: the six (almost) identical bays are clearly delineated from the floor to the boss that crowns the vaults. Clarity is the key, and we should treasure it at Chartres all the more because it was so soon squandered. As the German art historian Hans Jantzen points out, elsewhere (in England especially) it became common for a preponderance of detail and an insistence on variety to obscure the 'transparent logic of French cathedral Gothic'.

The nave is illuminated by two tiers of windows on either side and by the rose window of the western façade; if the sun is in the right place, these throw patches of gorgeously coloured light onto the stone floor. But the light is dim at the best of times, because the glass is coloured so deeply: as Rodin says, the predominant blues and reds combine with the natural hue of the stone to create a purple-tinted aura.

The floor itself slopes down by about 80 cm (31 inches) from east to west, apparently an intentional feature that made it easier for the limestone flagstones to be washed down to clear it of the debris

During the cathedrals crusade of the twelfth and thirteenth centuries, men scoured the land for stone. With nothing but hand tools they excavated more hard rock than was ever mined in ancient Egypt: not 'marble', on the whole, but its geological precursor limestone, from which the bricks of their churches were hacked and chiselled.* The quarries in the Île-de-France, such as that at Berchères-les-Pierres in the Beauce which provided most of the purple-grey limestone for Chartres, were not discovered until the cathedrals created the demand. Without these lithic resources fortuitously to hand, church-building would have been even slower and more costly. During the Middle Ages, tens of thousands of open-air stone pits were dug throughout Europe, most of which have now vanished. Paris itself sits on a maze of around 300 km (about 185 miles) of tunnels burrowed into its foundations, many of which provided the fabric for monumental buildings such as Notre-Dame.

The stonecutters, masons and sculptors of the Gothic age redefined what could be done with stone. Some of the blocks at Chartres are on such an awesome scale that it makes your legs tremble just to look at them. From others, the craftsmen have brought forth figures of breathtaking sensitivity and invention. Even masonry components that seem purely functional, such as the blocks comprising the great arches of the vaulting, often have highly complex shapes that have been made with stunning precision. It's true that the masonry of Chartres is not known for the high quality of its finish (it has been charitably assumed that the masons expected some of their work to be obscured by the gloom). But there is plenty to admire nonetheless, especially among the smaller figures, and we should never forget how demanding this work was. Carving hard, brittle limestone is an arduous and precarious business; raising it over a hundred feet high and setting it in place, often in locations that were partly exposed to the elements, is laden with hazard. There is surely no other realm of artistic expression in which the artists, if we may call them that, have been pitted against so recalcitrant and unforgiving a medium, and have risen so memorably to the challenge that their materials present.

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* Limestone (a form of calcium carbonate) was the hardest and strongest building material; but some medieval churches, such as the cathedral at Strasbourg, are made of sandstone, which is composed primarily of quartz and feldspar.

who worked with stone, there were the stone-hewers who prepared basic blocks of roughly prepared ('dressed') stone from quarried blocks; skilled stonecutters who shaped more complex blocks; stone-layers who set them in place with mortar; monumental masons or carvers who worked on more decorative carving; and the prestigious sculptors or *imagiers* who created the statuary. The term 'mason' was sometimes used to imply only stone-layers, but more commonly it encompasses all of these jobs. Many of the craftsmen working on site on a cathedral project were necessarily itinerant, travelling to wherever there was work to be found, sometimes as a permanent team associated with a particular master. In addition, there were carpenters, sanders, plumbers, tilers, smiths for making metalwork that ranged from casings for windows to finely ornamented gold and silver panelling. There were roofers who worked in lead and slate, and glassmakers and tool-sharpeners. Plasterers worked up the plaster from gypsum (which was found in abundance around Paris, accounting for the term 'plaster of Paris'); painters covered it with colour. The number of tasks that had to be paid for was enormous; accounts for Saint-Lazare in 1295 detail everything down to the last nail.

Those costs began at the quarry. The quarrymen, who were usually local to the area, had one of the hardest jobs, for they worked in the open air under dangerous conditions; constant exposure to stone dust led to diseases such as silicosis. Stone was seasoned for a year or more before being used: it would be coated in a protective slurry of crude limestone plaster and stacked away under makeshift covering, sheltered from frost by straw and reeds. Given its immense weight, transportation of stone was expensive: to move it just 10 miles (16 km) could cost as much as the raw material itself. Transport by river was the cheapest option – the stones for the churches of Paris could be brought from quarries along the river Bièvre, which feeds into the Seine. In the eleventh and early twelfth centuries road haulage relied on carts drawn by oxen, animals that not only were relatively cheap to maintain but also offered valuable by-products of meat, milk and leather. By the time Chartres was built, horse-drawn transport was becoming common, for horses were faster and more enduring, as well as being easier to control in urban areas. To keep transport costs down, the stones were roughly cut to shape and dressed at the quarry itself, so that some of a project's stonecutters were employed there rather than on the building site. William of Sens sent templates to the quarries at Caen to prepare the blocks for shipping to Canterbury.

Transporting stone was not only costly but slow, and church patrons were always eager to find local sources. When the bishop of Cambrai, Gérard I, ordered the rebuilding of the monastery of St Mary in the 1020s, he was dismayed that the nearest quarry capable of supplying stone for the columns was almost 30 miles (50 km) away:

> So he prayed Divine Mercy grant him assistance nearer at hand. One day while riding his horse, he explored the hidden depths of the earth in many surrounding places. At last, with the help of God who never fails those who put their trust in Him, he had a trench dug in the village that has always been known as Lesdain, four miles from the town, and found stone suitable for columns. And this was not the only place: on digging nearer, to be precise on the estate of Noyelles, he had the joy of finding good quality stones of another kind. Giving thanks to God for this find, he devoted all his zeal to this pious work.

This divine providence enabled Gérard to complete the building in seven years.

Suger was similarly blessed for his reconstruction of Saint-Denis by the discovery of an excellent source of marble near Pontoise, north of Paris. At first the abbot feared that he would have to fetch his marble columns all the way from Rome, 'by safe ships through the Mediterranean, thence through the English Sea and the tortuous windings of the River Seine, at great expense to our friends and even by paying passage money to our enemies, the near-by Saracens'. Suger confessed that for a long time he was at a loss for what to do, until the Lord helped him out:

> Suddenly the generous munificence of the Almighty, condescending to our labours, revealed to the astonishment of all and through the merit of the Holy Martyrs, what one would never have thought or imagined: very fine and excellent [columns]. Therefore, the greater acts of grace, contrary to hope and human expectation, divine mercy had deigned to bestow by a suitable place where it could not be more agreeable to us, the greater [acts of gratitude] we thought it worth our effort to offer in return for the remedy of so great an anguish. For near

> Pontoise, a town adjacent to the confines of our territory, there [was found] a wonderful quarry [which] from ancient times had offered a deep chasm (hollowed out, not by nature but by industry) to cutters of millstones for their livelihood.

And this was not the full extent of the divine grace that Suger's project enjoyed, for he goes on to explain how, when rain drove away those who had flocked to help raise the stone out of the pit, a miracle allowed the work to continue. The ox-drivers waiting for their cargo grew impatient with the delay:

> Clamouring, they grew so insistent that some weak and disabled persons together with a few boys – seventeen in number, if I am not mistaken, with a priest present – hastened to the quarry, picked up one of the ropes, fastened it to a column, and abandoned another shaft which was lying on the ground; for there was nobody who would undertake to haul this one. Thus, animated by pious zeal, the little flock prayed: 'O Saint Denis, if it pleaseth thee, help us by dealing for thyself with this abandoned shaft, for thou canst not blame us if we are unable to do it.' Then, bearing on it heavily, they dragged out what a hundred and forty or at least one hundred men had been accustomed to haul from the bottom of the chasm with difficulty – not alone by themselves, for that would have been impossible, but through the will of God and the assistance of the saints whom they invoked; and they conveyed it to the site of the church on a cart. Thus it was made known throughout the neighbourhood that this work pleased Almighty God exceedingly, since for the praise and glory of His name He had chosen to give His help to those who performed it by this and similar signs.

It is worth bearing in mind that such testimonies of God's imprimatur on Suger's bold plans for Saint-Denis made it all the harder for sceptics to criticize them.

Stone was crudely cut with axes and saws. One surviving example of a medieval stonecutter's axe has a double-bladed steel head set with serrated edges. Blocks were typically sawn up with large double-handed saws operated by two workers and lubricated with water. At the other extreme, the delicate work of the stone-carvers was done with hammer and chisel – in the early twelfth century, masons rediscovered the use of chisels suited to making deep undercuts.

Medieval record-keepers rarely troubled themselves over the fine distinctions between different classes of mason – they typically called them all *cementarius* or *lathomus*, and the stark addition of *magister* before one of these terms is the only clue that the person so named is the master of the entire operation, the one we would now call the architect. This indifference to the gradations of skill may, as we have seen, partly speak of the snobbishness and ignorance of the ecclesiastical writers, but it also contrasts with our modern tendency to make artistic creativity distinct from stolid craftsmanship. The distinction between stone-hewer and *imagier* is just a matter of degree; and yet what degree, taking us from blank chunks of rock to the agony and majesty of Christ and the saints. It is not clear how much say the sculptors had over their choice of subject; according to a decree by the second Council of Nicaea in 787, 'Art alone [that is, the technical execution of a work] is the painter's province, the composition belongs to the Fathers.' Yet the statues in the Romanesque and Gothic cathedrals could not have been made by people ignorant of what it was they were portraying. 'By becoming a sculptor', says the historian Jean Gimpel, 'the stonecutter graduated to the intellectual world.'

The rates of pay for building workers varied enormously, depending on the status of their work. In England a labourer who merely dug holes and shifted materials might get 1½ pennies (*d*) a day, while a stonecutter would fetch around 4*d*, and a freemason perhaps a ½*d* more (see table, overleaf). The master mason could be paid up to 2 shillings (*s*; 12*d* = 1*s*) a day, which, as we've seen, was enough to make him a relatively wealthy man over the years. An ordinary mason's wage was usually enough to support a small family, particularly if supplemented by a modest income from a plot of land or from hiring out carts for transporting materials. The man who knew how to work stone could generally find a comfortable standard of living.

Yet the working hours were demanding, even bearing in mind that there was a large number of religious feast days in the medieval calendar (all holidays were of course unpaid). In a normal week the workers would be on site for five and a half days, and would labour from sunrise to sunset. This generally meant that the working day

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