



A NEW URBAN DEVELOPMENT: TOWNS, MONASTERIES AND PALACES

Although the Carolingian dynasty lasted into the tenth century, the period of large-scale building was short-lived. It began at the end of the eighth century and ceased about the year 845, when the settled life of towns and monasteries was disrupted by the Norse invasions. Urban development in the Carolingian period may be summed up as an enterprise boldly conceived and initiated but soon discontinued.

In the early years of the ninth century the Frankish empire extended into the heart of Germania and to the south of Italy. A long age of peace seemed to lie ahead. So the opportunity was taken for demolishing the town walls of Reims, Langres, Melun, Frankfurt, Regensburg and possibly Beauvais. This at last did away with the cramping inconvenience of the high defensive walls with which so many towns in Gaul had been girdled in the late third century. The dismantling of the old walls, carried out by the bishops with the emperor's approval, indicates that it was intended to enlarge the towns. For new arrangements had been made necessary by the reform of the clergy in the cathedral churches—one of the salient features of the Carolingian period—and by the organization of community services (hostels, poor relief, etc.) in imitation of those which had long existed in the monasteries. These great undertakings were broken off after about 850, when the towns had again to be walled and fortified to withstand the Norse invaders (see the Chronological Table in Part Four).

Chrodegang, bishop of Metz, drew up in about 754 a rule imposing on the clergy of his cathedral a mode of life similar to that of the monks. Between 755 and 815 Chrodegang's Rule was adopted in many churches and spread throughout the empire. For the canons of each church to live and pray in common, provision of a 'chapter' comprising a meeting hall, a refectory, a dormitory and oratories, was necessary. An old plan shows the arrangement of the chapter at Metz as it was in the eighteenth century. This group of buildings must have undergone many changes in the course of time, but its 'inorganic' aspect, as we would call it today, strongly suggests that the general layout was a very old one. What is especially remarkable is the chapter's size: over 320 feet long and 230 feet wide.

Charlemagne himself chose the bishops of his kingdom and he chose them well. Leidrad, appointed in 798 to the see of Lyons, was a former *missus dominicus*. A cleric from Metz helped him to reform his cathedral in accordance with Chrodegang's Rule. Beside the old cathedral of St Stephen, which was only sixty-five feet long, Leidrad built a church three times as large, whose foundations were discovered in 1935. He did the same at Vienne a few years later. There, beside the new chapter, he erected the church of Saint-Sauveur whose vestiges, recently identified, show it to have been comparable in size to the new cathedral of Lyons. So at both Lyons



36 - AACHEN, PALATINE CHAPEL. DOME

and Vienne a church was built for the canons. Elsewhere, as a rule, the canons had to be content with the use of one of the two churches forming the cathedral group.

Aldric, a former canon of Metz, was appointed bishop of Le Mans in 832. He at once rebuilt the cathedrals of Saint-Étienne and Notre-Dame, adding a cloister for the new canons. Notre-Dame, consecrated in 834 under the dual patronage of the Saviour and the Virgin, was fitted with fourteen altars, five of which were in the tribunes, an arrangement recalling that of the palatine chapels. At Metz it had seemed enough to establish separate oratories in order to multiply the altars required by a large clergy. At Le Mans the new Rule gave rise to a new architecture, apparently comparable in its perfection to that of Aachen.

The same thing happened in other cities. The cathedral complexes of the Merovingian period gradually gave way to majestic groups of buildings occupying the major parts of what had been Late Roman towns. The canonical reform spread rapidly, as one church set the example for another, and triumphed everywhere in the

35 - AACHEN, PALATINE CHAPEL. INTERIOR.

eleventh century. It was thanks to the initiatives taken in the Carolingian period that the towns later had at their disposal the surface area needed for the Romanesque and Gothic cathedrals that so radically changed their skyline and aspect.

It was not till the eleventh century that the Gallo-Roman type of villa was superseded by the castle and the village. Ninth-century records refer to country settlements and houses without describing them. Much more is known about the monasteries and palaces of this period. Their layout and internal arrangements have much to tell us about the new character of living accommodations and the evolution of architecture. We have already referred to the grandiose plan of the Saint-Riquier monastery whose main outline formed a triangle, symbolizing the Trinity. In the early ninth century the abbeys of Fulda and Lorsch were each preceded by a vast atrium recalling that of Old St Peter's in Rome. The other abbeys built at that time had more rational plans, designed to fit them, to serve at once as a place of prayer, a farming community and a reception centre.

A priceless document of this period is preserved in the St Gall library. It is a complete plan for a monastery, drawn in ink on five sheets of parchment sewn together and sent before 829 to Abbot Gozbert of St Gall to help him rebuild his monastery. With its detailed inscriptions, this thousand-year-old plan is as clear as a blueprint from a present-day architect's office. The area covered by the projected buildings forms a vast rectangle over 700 feet long. The regularity of the layout, which recalls the *insulae* of Roman cities of the early Empire, may exemplify the chequer pattern of the new cities projected by the Carolingians. All the buildings are arranged round the place of prayer, the church. On the south side are the dormitory, the refectory and the cellar, disposed round a square arcaded court. On the north are the abbot's house and the school. On the west, on either side of the monumental colonnade in front of the church, are guest houses for men of rank and for the poor. On the periphery, from east to south, are the infirmary and the novitiate, the doctor's house and a blood-letting ward, then orchard, cemetery, kitchen garden, workshops, mill, bakery, servants' quarters, stables and farm buildings.

Plan and inscriptions show that the standard of comfort was high. The buildings were connected by covered walks. Rooms were spacious and heated by stoves and fireplaces. The furniture consisted of tables, beds, wardrobes, benches and chairs. There were four bathrooms, reserved for the abbot, the monks, the novices, and the sick in the infirmary. The abbot's lodge was a two-storey house. On the ground floor were a reception hall with chairs and two fountains, and a room with eight beds; on the upper floor, a two-room apartment; kitchen and bath were in an outhouse. Each room in the guest house had a fireplace. In the stables were feeding troughs for the livestock. The infirmary included a separate ward for contagious diseases. The windows of the doctor's house overlooked a garden of medicinal herbs. Eighteen kinds of vegetables were grown in the kitchen garden, and fourteen varieties of fruit in the orchard. Chickens and geese were raised in circular pens. Nevertheless, that there was nothing exceptional for the time in the projected buildings of the St Gall plan is proved by a chronicle referring to comparable buildings erected by Ansegisus, abbot of Fontenelle from 823 to 833.





39 - AACHEN, PALATINE CHAPEL, TRIBUNE. IMPERIAL THRONE.

Work on the palace buildings at Aachen began prior to 798 and had not quite reached completion when Charlemagne died in 814. These buildings are justly famous. The Palatine Chapel or minster, which has come down to us almost in its entirety, is an exceptionally fine monument. But, in the age which saw the construction of Centula and the planning of the St Gall monastery, there was nothing unusual about it.

The main features of Charlemagne's palace have been ascertained by excavations. Chapel and palace stood at opposite ends of a large courtyard over 650 feet in length. In studying the plan revealed by excavations, the French architect and archaeologist Robert Vassas has made some important observations, which with his permission are published here for the first time. The area covered by the chapel atrium corresponds to two squares, whose sides each measure fifty-eight feet. This basic unit of measurement governs the proportions of the whole plan; by means of a grid it was possible to lay out the buildings correctly on the terrain. However, as in ancient times, the grid plan had a nobler role, that of imposing symmetrical and harmonious

38 - AACHEN, PALATINE CHAPEL. TRIBUNE.



40-41 - GERMIGNY-DES-PRÉS, CHURCH BEFORE RECONSTRUCTION — ARCADING IN THE APSE.

proportions on the component parts of a whole. (In this respect, the grid plan of the crypts at Saint-Germain of Auxerre and Saint-Médard of Soissons is less revealing than that of Germigny-des-Prés, which was applied to all the main units of the building, both in the ground plan and the elevation.)

The palace of Charlemagne was only half the size of that of the Byzantine emperors in Constantinople, but it was larger than the largest known Gallo-Roman villas. It owed nothing to the royal Merovingian palace which it replaced, for excavations have shown that its orientation was different. The imperial throne hall was much larger than the reception halls in the Lateran palace. Probably Charlemagne was deliberately imitating the most impressive Roman monument in that region, the *aula palatina* of Trier, the 'basilica' that can still be seen there.

The imitation of Trier is still more evident in the Ingelheim palace near Mainz, begun by Charlemagne about 777, completed by Louis the Pious, then entirely rebuilt by the Ottonian emperors, who kept, however (or so it would seem), to the main lines of the original plan. Here the throne hall, exactly half the size of the Constantinian *aula* and its apse at Trier, is reproduced again, as at Aachen. A courtyard again separates the great hall from the palace church. The palace buildings



42 - GERMIGNY-DES-PRÉS, CHURCH AFTER RECONSTRUCTION. INTERIOR, VIEW FROM THE WEST.

at Ingelheim stand within a square, about 330 feet long on each side, which is prolonged on the east by a monumental semicircular entrance. A Carolingian villa in Geneva, whose foundations were discovered in 1953, closely reproduces, but on a scale only half as large, the arrangement of the Ingelheim palace.

The palaces of Aachen, Ingelheim and Geneva, though built to three different scales, were designed according to the same architectural principles as the great monasteries of Carolingian Gaul. Aachen surpassed the others not only in the perfect design and execution of its chapel but also in its sheer size. In architecture the secret of grandeur is to combine vast spaces with simple forms. Aachen, the Escorial and Versailles illustrate this principle at three different periods of history.



43 – GERMIGNY-DES-PRÉS, CHURCH AFTER RECONSTRUCTION. INTERIOR, VIEW FROM THE WEST.



44 – MILAN, SAN SATIRO, PIETÀ CHAPEL. INTERIOR, VIEW FROM THE WEST.

A NEW CHURCH DESIGN

An entirely new ground plan, internal arrangement and outward aspect were given to the monastery church and the cathedral by the makers of the Carolingian renaissance.

It is only in recent years that this fact has been realized. For a long time Carolingian architecture was hardly touched on at all in textbooks on archaeology—and no wonder. Not a single piece of Carolingian architecture, not even the most famous, Charlemagne's Palatine Chapel at Aachen, has come down to us intact. All that remains here and there are parts or even mere fragments of buildings, left standing as if by a miracle amid sweeping reconstructions. These remnants are scattered over the whole extent of the former Carolingian empire and separated by vast distances: crypts, like those of Saint-Médard of Soissons and Saint-Germain of Auxerre; partially vaulted choirs, like that of Saint-Philbert-de-Grand-Lieu; an immense westwork of several storeys, like that of Corvey; the abbey gateway at Lorsch and Notre-Dame de la Basse-Œuvre at Beauvais. These speak for the variety given to the outward aspect of the buildings of this great period.

These buildings are illustrated on the following pages. Only thus assembling the surviving parts of each will give one some idea of what these great churches were like when still intact. We shall try to show how they came into existence. Their background and origins constitute an important problem for the historian, inasmuch as church architecture passed through only three main phases between antiquity and the Middle Ages: the timber-roofed basilica of the ancient Roman world; the late antique and early Byzantine domed church; and lastly the Carolingian church, which was soundly and skilfully vaulted at each end, and which prepared the way for the medieval church with its overall vaulting.

The various elements that went to make up the Carolingian church existed singly in ancient architecture and in the early churches of Rome and Italy, but the bringing together and the calculated combination of these elements represented a genuine architectural achievement. How did this come about? There was a time when it was thought that reasons of prestige or aesthetic motives were sufficient explanation. Although both certainly contributed to the fine effect of this architecture, the new building programmes were initiated, early in the ninth century, in response to the growing cult of relics and the reform of the liturgy imposed by Pepin and Charlemagne in their desire to imitate the church usages of Rome. The Chronological Table and comparative plans in Part Four of this book provide, we believe, arguments in favour of this opinion, but much remains to be discovered in a field and period in which it is still impossible to determine with certainty the actual sequence of forms.

A few years ago an important discovery was made by Louis Blondel at Saint-Maurice d'Agaune (canton of the Valais, Switzerland). His excavations there revealed that the basilica founded in 515 by King Sigismund had been largely rebuilt in the time of Charlemagne. The original aisled nave with a timber roof had been left standing, but to this had been added a two-storey apse at each end, the larger of the





47 - SAINT-PHILBERT-DE-GRAND-LIEU, ABBEY CHURCH, CRYPTS. CHAPEL OF THE HOLY SAVIOUR, FROM THE EAST.

two being on the west. The ground floor of each apse was occupied by a *confessio* with a semicircular corridor communicating on the same level with the nave. This *confessio* plan originated in Rome where it appeared towards the end of the seventh century. By then, with Rome under continual attack by the barbarians, the bodies of martyrs were too much exposed to desecration in the cemeteries *extra muros*; so, in spite of the graveyards' immemorial usage, the bodies were transferred to churches within the city walls. In these churches a *confessio* was dug under the floor of the sanctuary—a room hardly bigger than the martyr's sarcophagus which it housed, and round which led a narrow semicircular corridor enabling the faithful to come and pray at the foot of the saint's tomb under the altar. This arrangement was carried out in over five Roman churches, notably San Crisogono, in the time of Pope Gregory III (731–741).

46 - SAINT-PHILBERT-DE-GRAND-LIEU, ABBEY CHURCH. CRYPTS.



48-49 - AUXERRE, CHURCH OF SAINT-GERMAIN. EAST SIDE OF THE CRYPTS — PILLAR AT THE ENTRANCE OF THE AMBULATORY.

As the dangers of this lawless period grew, Christians placed their hopes of safety in the intercession of the saints and the power of their relics to avert evil. In 765 Pope Paul I had a large number of catacomb tombs opened and the bodies distributed among the churches of Rome. Shortly afterwards began the exodus of these relics, both secretly and with special permits, towards the rest of Europe, chiefly Gaul. Along with the relics, the Roman type of *confessio* spread northwards in the course of the eighth and ninth centuries. It appears in northern Italy in two churches at Ravenna, Sant'Apollinare in Classe and Sant'Apollinare Nuovo; in Switzerland at Saint-Maurice d'Agaune, in the St Gall plan and in two churches at Chur in the Grisons; in Germany at Seligenstadt; in Belgium at Nivelles; in Gaul at Saint-Denis in the basilica consecrated in 754 by Pope Stephen II.

The two crypts of the Saint-Maurice d'Agaune basilica kept to the plan of the Roman type of *confessio*. This plan is the only feature connecting Saint-Maurice with Italy. The elevation is different: in Rome the *confessio* is an underground chamber reached by two stairways, while the Saint-Maurice crypts are almost on a



50 - AUXERRE, CHURCH OF SAINT-GERMAIN, CRYPTS. THE CONFESSIO SEEN FROM THE WEST.



52 - CORVEY, ABBEY CHURCH. GROUND FLOOR OF THE WESTWORK.

level with the nave. Moreover the double-apse plan of Saint-Maurice appears nowhere in Rome except in a ninth-century church erected by Charlemagne, that of the Schola Francorum; it did not spread to Italy till the early Romanesque period and even then remained rare. These two features link Saint-Maurice closely to the churches of the Carolingian renaissance. The crypt on a level with the nave was an inherited characteristic of the basilicas of Merovingian Gaul in which the saint's tomb stood on the pavement of the sanctuary between the altar and the wall of the apse. The Carolingian crypt was built over this tomb like a sort of triumphal monument. As for the double apse, one at each end of the church, it appears twice on the St Gall plan and also at Fulda and the Cologne cathedral, besides Saint-Maurice d'Agaune. It was in time widely adopted in the Rhineland, central Germania and, in various forms, southern Gaul. This Carolingian church design differs in one

51 - CORVEY, ABBEY CHURCH. FAÇADE OF THE WESTWORK.



53 - CORVEY, ABBEY CHURCH. TRIBUNE OF THE WESTWORK.

respect from the double-apse basilicas of fifth-century Spain and North Africa. In the latter the counter-apse at the west end housed a tomb. In Carolingian architecture the west sanctuary housed the main altar. So it was at Agaune, Fulda, Centula and Reims cathedral. These churches, then, were not oriented but 'occidented.'

The history of the successive versions of the Fulda church throws light on the reasons for this arrangement. But first a few well-known facts should be borne in mind. Like the Temple of Solomon, the great early basilicas founded in Rome (St John Lateran, St Peter's) and at Jerusalem (Church of the Holy Sepulchre) had their entrance facing east, for it was then the custom to face the rising sun when praying. The prayer of the officiating priest in these churches was duly oriented, while that of the congregation was not. This was probably the reason why, towards the end of the fourth century, the position of the church was reversed, altar and



54 - CORVEY, ABBEY CHURCH. TRIBUNE OF THE WESTWORK.



56 - LORSCH, ABBEY GATEWAY, WEST FAÇADE.

sanctuary then being placed at the east end. But the Constantinian basilicas remained as examples of an earlier, short-lived usage, and it was these churches—in particular St John Lateran, the cathedral of Rome—that became the model for the churches of Gaul beginning at the end of the eighth century.

A notable achievement of the Carolingian renaissance was the reform of the liturgy. This reform, initiated in Gaul by Pepin and generalized by Charlemagne, consisted essentially in adopting the Roman liturgical usages that then were used in the Lateran church and St Peter's. One of the most active advocates of the Roman liturgy was St Boniface, who founded the monastery of Fulda in one of the regions of Germania which the Franks had opened to Christianity. The first church soon proved too small, for the monks were numerous. It was accordingly rebuilt by Abbot Ratgar in 794. The new Fulda church reproduced the plan of St Peter's in Rome, with apse and altar at the west end, but with the addition of a smaller apse at the east end housing a secondary altar. This copy of St Peter's, only slightly smaller than its model, was the largest of all the churches erected in this period. When

55 - LORSCH, ABBEY GATEWAY, SEEN FROM THE SOUTHWEST.



57 - BEAUVAIS, NOTRE-DAME DE LA BASSE-ŒUVRE. EXTERIOR, VIEW FROM THE SOUTH SIDE.

it was finished, a large atrium recalling that of St Peter's was added to it 'in the Roman manner'—'*more romano*,' wrote the Fulda chronicler.

Neither St John Lateran nor St Peter's had an east apse. The counter-apse at the east end seems to have made its first appearance in 794 at Fulda. One is tempted to regard it as the outcome of a sort of compromise between the reforming spirit and respect for local traditions. Such too, it would seem, were the secondary oratories placed at the east end of occidented churches of the Romanesque period in southern France, as at Arles-sur-Tech.

We know a good deal more about the origins of the Carolingian crypt as it appears at Saint-Philbert-de-Grand-Lieu, Saint-Médard of Soissons and Saint-Germain of Auxerre in the second quarter of the ninth century. This crypt was almost like a second church erected in honour of the saint whose tomb it housed at the end

of the nave, and nearly on a level with the nave; the crypt's vaulting supported the sanctuary, which itself was vaulted or timber-roofed, and which was reached by monumental staircases.

The Carolingian crypt was something new in Christian architecture. The crypts of Saint-Philbert-de-Grand-Lieu, Soissons and Auxerre differ in plan (thus testifying to the freedom of invention shown by the architects of this period), but all three have the same programme. The worshipper did not reach the saint's tomb by a narrow semicircular corridor, as in the churches of Rome. A broad, elbowed ambulatory provided room for a crowd of worshippers to move about or stop and pray by lamplight and tapers around the 'Holy of Holies.' Large rooms—privileged burial places and secondary oratories—served to group together inside the Carolingian crypt elements that had been scattered about outside the Early Christian basilica. At Soissons the burial chambers are large rooms with niches recessed into the walls, like antique mausolea. In erecting on the east side of the crypt an oratory of circular plan and raising it to several storeys, the architects of the Carolingian period added to religious architecture a new form which became fairly common in Burgundy (Saint-Germain of Auxerre, Flavigny, Saulieu, Dijon) and even existed in Germany (Hildesheim).

Opposite the raised sanctuary standing over the vast crypt, the Carolingians often erected at the other end of the nave (i.e., the west end) a tower-like block with vaulted storeys. The design of this 'westwork,' as attested by remains and documents, was as varied as that of the eastern crypts themselves. The ground floor could serve as a vestibule as at Saint-Germain of Auxerre and Lorsch; it could also house a crypt containing precious relics, as at Centula. At Centula, as in the abbey of Fontenelle and Reims cathedral, the first floor served as the west choir with the main altar of the church which was dedicated to the Holy Saviour, as in St John Lateran. Both at Centula and Reims, the westwork formed an entire parish church in itself, complete with baptismal font. At Seligenstadt on the Main, east of Mainz, in the church erected by Einhard in 831, there was a tribune in the westwork where Einhard sat during the services and which is known to have contained an altar and reliquaries. As in the Palatine Chapel at Aachen, the tribune was reserved for the great; this custom lasted throughout the Middle Ages. At Saint-Germain of Auxerre only part of the westwork can be reconstructed with any certainty; it is known to have housed an altar dedicated to John the Baptist. Its design seems to have been similar in some respects to the famous westwork of Corvey, which is still in existence.

There has been much discussion concerning the intended purpose of the large hall on the upper floor of the colossal Corvey westwork, but all archaeologists have recognized the exceptional merits of its architectural design. The westwork of the Corvey church was built between 873 and 885. The ground floor served as an entrance passage; it is badly lit (so were the westworks of Reims and Auxerre cathedrals, as we know from records of the late tenth century), for its groined vaulting rests on square pillars with very fine capitals set rather close to each other. But the two upper storeys form a vast tribune overlooking the nave and flooded with



58 – SAINT-PHILBERT-DE-GRAND-LIEU, ABBEY CHURCH. TRANSEPT, FROM THE SOUTHEAST.

light. It is at Corvey, founded as its name indicates by a colony of monks from the abbey of Corbie in Picardy, and in Charlemagne's Palatine Chapel at Aachen that one is made fully aware of the grandeur and originality of Carolingian architecture. Of course this art had its models and its masters, but one cannot help marvelling at the fact that, where so few monuments still exist or can be reconstructed from excavations or documents, the variety of the solutions developed in response to the same programmes should be so great and so ingenious.

Roman architectural ideas and practices were still fairly familiar in early ninth-century Gaul. As we have pointed out, grid plans were utilized on the terrain for the construction of the Aachen chapel, Germigny-des-Prés, Saint-Germain of Auxerre and Saint-Médard of Soissons. One of the best chronicles of the ninth century, that of the monk Heiricus, tells in some detail how the partial reconstruction



59 – SAINT-PHILBERT-DE-GRAND-LIEU, ABBEY CHURCH. ROMANESQUE CONFESSIO.

of the abbey church of Saint-Germain at Auxerre was undertaken and carried out from 841 to 865. It was decided on by Conrad, Count of Aargau (Argovia), uncle of Charles the Bald and lay abbot of the monastery, whose failing eyesight had been restored by the intercession of St Germanus. When Conrad returned to Aargau, his wife Aelis remained at Auxerre to superintend the undertaking. It had been decided to enlarge the basilica at the east end, on the side where the hill sloped down towards the river Yonne. The most famous architects were summoned to Auxerre. After drawing up a plan, they made a wax model of the projected building, so as to have an exact idea of its elevation and outward design. Then the 'master builders' and the 'foremen' were designated and the work got under way. The builders did not make shift with materials available locally. As there was no marble in the Auxerre region, parties of monks were dispatched twice to the south, first to Arles, then to Marseilles, in search of ancient Roman columns. They were given some and purchased others. The columns were then shipped up the Rhône and the Saône as far as Chalon; from there they were transported overland. The crypts and the upper sanctuary, which was completely vaulted, were solemnly consecrated by Charles the Bald on 6 January 859. The westwork of Saint-Germain, an enormous block which was not entirely demolished till 1820, was finished and consecrated a few years later, in 865. It would seem that, between these two great vaulted structures of several storeys erected at each end of the church, the nave of the original fifth-century basilica was preserved intact.

Indeed, as shown by vestiges of the old nave of Saint-Denis and a text giving some account of Saint-Remi of Reims, the Carolingian renaissance seems to have made no change in the traditional design of the aisled nave covered with a timber roof. In the ninth century monolithic columns continued to be used to support the nave arcading. As against this conservatism, however, genuine innovations were made in the technique of vaulting, in crypts and upper-storey sanctuaries, westworks and tribunes, chapels and oratories on the central plan.

The most remarkable new element appears in the tribune of the Palatine Chapel at Aachen: the combination of the diaphragm arch and the transverse barrel vault — a skilful application of the law of thrusts which was repeated a little over two centuries later in the narthex of Tournus. The ingenious use of the diaphragm arch to support the roofing of a turning element appears to be an architectural device peculiar to Gaul, for a typical example of it can still be found in early Romanesque architecture in the archaic ambulatory of the church of Auneau near Chartres.

The dome with spindle-shaped segments and the dome on squinches, both a legacy of late Roman architecture, exist at Aachen and Germigny-des-Prés. The wall arches (formerets)—which were subsequently to play an important part in the development of early Gothic—helped to support the domes on squinches at Germigny-des-Prés and the groined vaulting of the Saint-Médard crypt at Soissons. This device, which says much for the technical skill of the builders, comes as no surprise in a crypt whose vaulting, both semicircular and groined, is composed entirely of neatly cut ashlar blocks (while later, from the tenth to the mid-twelfth century, a rough rubble work vaulting was the rule in the early French Romanesque churches). Yet one



60 — DIJON, SAINT-BÉNIGNE, FROM AN ENGRAVING BY LALLEMAND. BIBLIOTHÈQUE NATIONALE, PARIS.

cannot help noticing a curious contrast in the masonry of the Saint-Médard crypt: the cyclopean stonework of the burial chambers is remarkable, but the wall niches were hacked out with a pick instead of being left in reserve when the wall itself was built. This juxtaposition of skilled workmanship and barbarous botching occurs repeatedly, in various forms, in works of the Carolingian period.

The pillar of cruciform section with shallow projections, inherited from Roman architecture, was a standard feature of vaulted constructions in the Carolingian period, as at Aachen, Germigny-des-Prés and Saint-Germain of Auxerre. At Auxerre the cruciform pillars of the westwork, much more massive than those in the crypt, bear a striking resemblance to the pillars which, about the year 1000, supported the vaulting over the double aisles (and possibly over the tribunes as well) of the vast cathedral of Orléans, the first of the great churches of Romanesque Europe to be almost entirely vaulted. Considerable interest attaches to this type of pier, for like the diaphragm arch and the transverse barrel vault it represents a factor of progress and a common tie between Carolingian art and Romanesque. Patrons,

monks and practitioners of the eleventh century were well aware, moreover, of what had been lost in France with the passing of Charlemagne and Charles the Bald, and what they owed to Carolingian art. We know today that at Saint-Philbert-de-Grand-Lieu the groin-vaulted *confessio*, the sarcophagus it contains, and above all the piers and projecting arches of brick and stone in the nave are a close imitation of the Carolingian choir, an imitation devised around the beginning of the eleventh century by monks from Tournus intent on reviving the cult of St Philbert. Likewise, at Germigny-des-Prés, the fake Carolingian dedication engraved in the Romanesque period on the pillars of Theodulf's oratory is a tribute paid by the monks of Saint-Benoît-sur-Loire to the glories of Charlemagne's time, as the chronicle of their monastery testifies. In the same period at Flavigny when the crypt and raised choir were rebuilt, the original Carolingian plan and layout were scrupulously respected; the only change made was in the rotunda on the east side of the chevet, which was now given a polygonal plan. But the finest tribute paid to Carolingian architecture could be seen before the French Revolution in the Romanesque church of Saint-Bénigne at Dijon, where the east rotunda of the Carolingian crypts had been converted into an immense three-storied *oratorium*. This was not an imitation of the Holy Sepulchre, as was formerly supposed, but the triumphal mausoleum of a civilization.

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PART TWO