

## THE SAINTE-CHAPELLE PARISIAN RAYONNANT AND THE NEW ROYAL ARCHITECTURE

**B**etween 1239 and 1248, as Paris continued to prosper and expand and the new style of architecture grew increasingly distinctive in both large and small Parisian buildings, the Sainte-Chapelle was constructed (Plates II–V).<sup>1</sup> Indisputably the most extraordinary monument of Louis IX's reign, and possibly of the century, the chapel's colored walls of stained glass and multimedia effects dazzle contemporary spectators as much as they did in 1323 when Jean de Jandun compared the building to Paradise itself.<sup>2</sup> The Sainte-Chapelle was a remarkably innovative structure, although this quality has been overlooked because of the way the chapel also integrated seamlessly into its period style.

Indeed, based on its architectural style, the Sainte-Chapelle has rarely been considered one of the finest exemplars of its period. Most scholars refer to other contemporary structures, such as Saint-Denis and the buildings associated with Pierre de Montreuil at Saint-Germain des Prés, as exhibiting higher-quality workmanship and a more avant-garde approach.<sup>3</sup> The history of architecture has privileged these Gothic buildings that developed broad spaces, a thin, skeletal structure, and what are essentially curtain walls of stained glass – attributes of modern architecture akin to the Chicago school and Mies van der Rohe's mid-century architecture. This assessment owes as much to historiography as it does to the aesthetic qualities of the Sainte-Chapelle, which, in contrast, was highly decorative.

Medieval concepts of beauty may explain in part the chapel's divergence from such minimalist, modernist forms. That which was qualified as "pulcher" in the Middle Ages did not exhibit elegant restraint, but rather generated an overwhelming, almost sublime effect through multiple sensory experiences.<sup>4</sup> Ironically, it was Abbot Suger who famously expounded on the analogical potential of the wondrous arts within his twelfth-century church at Saint-Denis.<sup>5</sup> In her recent book on the medieval experience of beauty, Mary Carruthers observes that written responses to the arts emphasize their sensory and emotive powers.<sup>6</sup> Those objects and buildings with the most abundant

decoration often generated the most hyperbolic, exuberant descriptions, as the Sainte-Chapelle did.

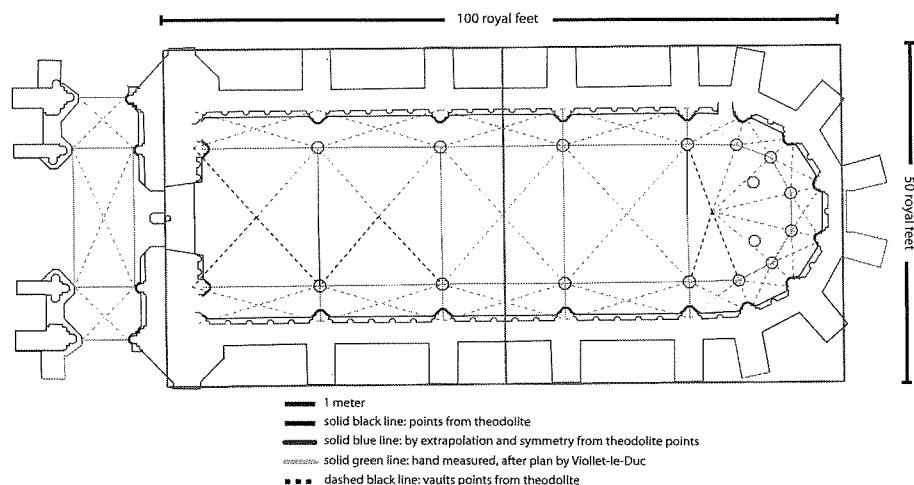
A reevaluation that embraces this decorative aesthetic as much as structural tectonics provides a new perspective on the Sainte-Chapelle's place within the thirteenth-century architectural milieu. From this examination, it emerges that there was not one but two directions for architecture in Paris at this time, although they were not mutually exclusive: some buildings prioritized a linear and overtly skeletal system, while others employed decorative motifs to effect a distinct style. The forms that defined the period did not originate at the Sainte-Chapelle, although the royal chapel brought elements together in such a way as to inspire their perpetuation and development.

In the course of this analysis, it also becomes apparent that the Sainte-Chapelle constituted a significant shift from the unadorned and functional, urban architecture of Philip Augustus. Louis IX's royal chapel manifested a new emphasis on decoration. This amounted to a transformation in royal representation from the utilitarian architecture of Philip Augustus. To fully appreciate the extent of this change, it is necessary to begin this discussion with an examination of the monument, both in itself and within its formal context. This reveals new insights about the Sainte-Chapelle's place in Rayonnant architecture and its contributions to broader thirteenth-century practice. It is but the first step in the process of uncovering how the chapel conveyed a complex ideological program that projected royal ideals.

### 2.1 ARCHITECTURE AND AESTHETICS

The Sainte-Chapelle is a double-level chapel comprising a porch, four bays, and a seven-part polygonal apse (Plates VI and VII). The exterior elevation reveals the organization of the interior space while accentuating the building's monumental height (Plate II).<sup>7</sup> A series of closely spaced buttresses frame the chapel and mark the bay divisions. The buttresses telescope upward with a series of setbacks and culminate with pinnacles that accentuate the building's monumentality. Linked together by gables that frame the upper chapel windows, the alternation of pinnacles and gables produces a distinctive rhythmic pattern around the top of the building. The gables are decorated with crockets and pierced with oculi, further embellishing the monument. This ornamental upper section of the Sainte-Chapelle resembles a royal crown, which thus provides a visual cue for the royal relic housed inside.

Below, a foliate stringcourse under a mid-level setback wraps around the buttresses dividing the exterior elevation horizontally into two parts corresponding to the lower and upper chapels. A thick masonry wall rises from the ground to form the lower chapel, and this is replaced by a large arched window midway in each bay. Above the dividing stringcourse, a narrow strip



2.1. Paris, Sainte-Chapelle, upper chapel plan with Solomonic dimensions superimposed. Plan: Author, with dimensions after Murray.

of coursing gives way to translucent walls of glass, which extend upward via long, vertical mullions of tracery that further emphasize the upper chapel's dominating height.

Although the Sainte-Chapelle appears far taller than long or wide, the length of the chapel is actually nearly equal to its height. From the ground to the top of the west gable, the Sainte-Chapelle reaches 42.5 meters, while from west to east, including the porch at ground level, the length of the chapel is 42.2 meters.<sup>8</sup> Between length and height, then, the chapel has almost exactly a 1:1 proportion.<sup>9</sup> The body of the chapel reiterates this balanced ratio. Excluding the porch, from west to east the chapel extends 32.5 meters from the lower chapel door to the exterior of the apse wall. The height of the Sainte-Chapelle from the ground to the top of the lateral gables is also 32.5 meters.<sup>10</sup> On the north-south axis, the chapel spans 16.19 meters from exterior buttress to exterior buttress, exactly half of the length and height of the building. While the distances are not whole numbers in meters, in royal feet (the primary measure by which the Sainte-Chapelle was designed), the building's frame is contained within a double square of 100 by 50, as Stephen Murray has shown (Figure 2.1).<sup>11</sup> The disproportionately tall appearance of the building is actually an effect of the low porch, the vertical buttresses, and the narrow space, because the actual proportions are quadratic.

Moving to the western entrance, a double-level porch precedes the façade (Plate III). Here, the buttresses skirting the chapel have been pulled forward 5.91 meters (or 18.18 royal feet, the length of one interior nave bay) from the façade to create the porch perimeter.<sup>12</sup> The buttresses frame the tripartite distribution of space in the lower chapel, creating a wide central aisle (6.66 meters or 20.5 royal feet) flanked by a narrow aisle (2.78 meters or about 8.55 royal feet) to either side. At the ground, to either side of the central space,

a socle bench unifies and conceals a pair of buttresses, while above, pointed arches join them at the level of the vaults. The lower chapel porch vaults ascend 6.83 meters (21.01 royal feet) from ground to keystone while those of the upper chapel porch reach to 8.46 meters (26.03 royal feet).

With its modest dimensions, the porch sets up a striking transition into the chapel's broad interior spaces. Crossing the threshold of the portal, one enters the lower chapel (Plate V). As anticipated by the porch, the area within is arranged into a wide central nave divided by freestanding columns that form narrow aisles to either side, for a total floor width of 9.66 meters, nearly 30 royal feet.<sup>13</sup> The freestanding columns demarcate four bays between the entrance and the hemicycle. Columns define the space; all rising to the same height and capped by foliate capitals, they run down the nave, multiply in the colonettes of the dado, and congregate in the apse. They obscure the lower chapel wall, adding an insistent decorative quality that detracts from their purpose as supports for the upper chapel. The vaults rise on average 6.55 meters or 20 royal feet from ground to keystone and seem to hover over the columns, billowing open and extending to the furthest perimeters of the lower chapel.

A series of daring architectural adjustments enhances the sense of open space in this level. In the first place, the lower chapel vaults descend onto the nave columns rather than onto the thick perimeter wall. This creates an opening for the aisles, whose vaults ascend to the same height and lift the space of the chapel laterally, indeed, extending the wall to the furthest possible boundary. To ensure the building's stability, stone brackets abut the extrados of the nave vaults and extend to the chapel wall, functioning like internal flying buttresses (Figure 2.2). Yet rather than solid stone, as one would expect given their structural purpose, the brackets are instead made of bar tracery, with a cusped half arch, a foliate band, and a trefoil within a right angle. Further supporting the vault, a thin iron bar above and below reinforces the bracket. By providing a strong yet thin and pliable support, the iron permitted the decorative enhancements of the stone brackets. A second daring adjustment is found in the lower chapel wall, which is pierced above the dado and filled with large tracery windows that span the width of the bay. The weight of the upper chapel appears to rest on the thin responds of the nave that transfer the mass via delicate brackets and iron ties to the perforated exterior of the building.

In addition to the emphasis on lateral expansion and thin supports, all of the articulation in the lower chapel has been subdivided and repeated. The dado is articulated with a screen of pointed trilobe arches with pierced trefoils in the spandrels (Plate VIII). The colonettes of the dado screen are separated from the wall (*en délit*), creating a layered effect, and their capitals are each distinguished with a variation of the crocket pattern or sometimes with simple foliate forms. Running around the lower chapel, the arcaded screen generates



2.2. Paris, Sainte-Chapelle, interior, lower chapel, aisle, stone bracket and iron tie. Photo: Author.

a sense of rhythm, moving the gaze along the wall. Demarcating the bays are bundles of five colonnettes of equal height, each with its own ornamental capital. Above, a molded cornice marks the transition from the dado to the windows, which are set only twenty centimeters from the wall plane. This transition disguises the width of the lower chapel wall (1.01 meters/3 royal feet). The window melds into the arch of the vaults. These visual diversions – the screen-like effect in the dado, the window frames and their tracery, the omnipresent columns and capitals, and the decorative brackets, originally all covered by gilding and polychromy – further obscure the architectonics of the lower chapel, whose primary function, after all, was to support the upper chapel. Even if the space of the lower chapel might appear somewhat restricted to those accustomed to the large expanses of Gothic cathedrals, the structural design of the lower chapel exemplifies the architect's technical virtuosity. It is nothing less than an architectural *tour de force*.

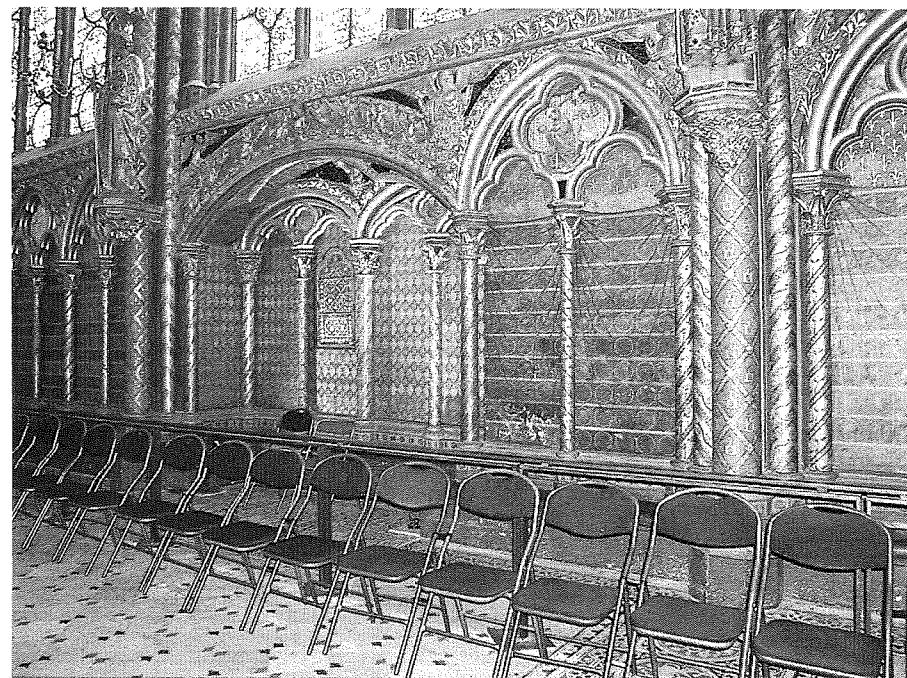
The aesthetics of the lower chapel also govern the upper chapel, where open space, the appearance of weightless architecture, and abundant decoration predominate (Plate IV). In contrast to the tripartite arrangement of the lower chapel, the upper chapel was constructed as a single, unified space. Upon entering this level, the gaze is directed immediately upward as the vaults

ascend more than three times as high as those of the lower chapel to keystones set at an average of 19.86 meters/61 royal feet from the upper chapel floor.<sup>14</sup> The clear floor area extends 32.5 meters/100 royal feet from the portal threshold to the apse wall and spans about 9.9 meters/30 royal feet.<sup>15</sup> The width of the chapel interior is therefore just slightly less than half of its height.

Every effort was directed toward the production of unimposing, light architecture. The vaults hover over window arches and descend onto slender responds that demarcate the chapel's four bays. As on the lower level, each respond comprises five shafts, but here, only the large central shaft descends to the floor, creating the illusion that the shaft alone delicately bears the weight of the high vault above. The other responds land on a banquette at the base of the dado, recessing into the wall and providing a veneer for the buttresses behind them. As on the porch and in the lower chapel, the weight-bearing elements have been minimized and directed to the exterior.

The design of the elevation also detracts from the architecture's structure. The upper chapel dado maintains a separate existence from the windows above it, as there is little linkage between the two parts. As in the lower chapel, the dado is the only wall area and it too offers itself as a blank canvas for decoration (Plate IX). In each bay, the dado carries three pointed arches subdivided into two round trilobe arches crowned by a quatrefoil. At the wall plane, each quatrefoil, known as a "medallion," contains an image of a martyr decorated in glass, enamel, paint, and gilding.<sup>16</sup> The dado colonnettes are decorated with capitals sculpted in an extensive variety of botanically accurate plant species. Additional foliate sculpture adorns the extrados of the great arches, and winged angels holding crowns inhabit the spandrels. Above, another foliate band frames the dado, reiterating the horizontal line produced by the arcade. The upward movement of the main respond in each bay is interrupted by the apostle statues at the juncture of the dado and the windows. These design choices separate the elevation into different parts and detract from its visual unity, adding to the ethereal, floating quality of the stained-glass windows above.

Another adjustment in the upper chapel occurs in the third bay, where a niche occupies two of the three major arches of the dado (Figure 2.3). With a length of 2.93 meters or 9 royal feet and a depth of 1.12 meters or 3.4 royal feet, the niche cuts into the upper chapel wall, forming a small transept in the plan. Only a forty-centimeter sheath of stone between the buttresses divides the interior from the exterior at this level, and it is corbelled out imperceptibly at the level of the exterior stringcourse. The niche is framed by a low and wide round arch onto which a tracery molding forms a wide trilobe in the intrados. The extrados is decorated with a sculpted relief of angels in profile carrying crowns to a central bust of a nimbed Christ. Within the niche, the same motif of the dado is followed. A small window in the third trilobe arch allows a view of the exterior as if to reiterate the permeability of the wall.



2.3. Paris, Sainte-Chapelle, interior, upper chapel, niche. Photo: Author.

Above the dado hover the immense stained-glass windows. With a height of 15.5 meters, they account for more than three-quarters of the chapel's internal elevation, and cover a surface of 618 meters.<sup>17</sup> In the nave, the lancets have a total width of 4.66 meters, each of which is subdivided by bar tracery; first into two smaller lancets surmounted by a sexfoil rosette (*oeil du boeuf*), and again into two smaller lancets with cusped arches crowned with quatrefoils. The narrower hemicycle windows are arranged as two lancets crowned with three trefoils. The predominant colors throughout the program are blue and red, which were also ubiquitous in Parisian manuscript painting, but green, pink, light blue, white, and yellow are also present. As enormous translucent banners that transform light into color, the stained-glass windows infuse the chapel with a mystical glow.<sup>18</sup>

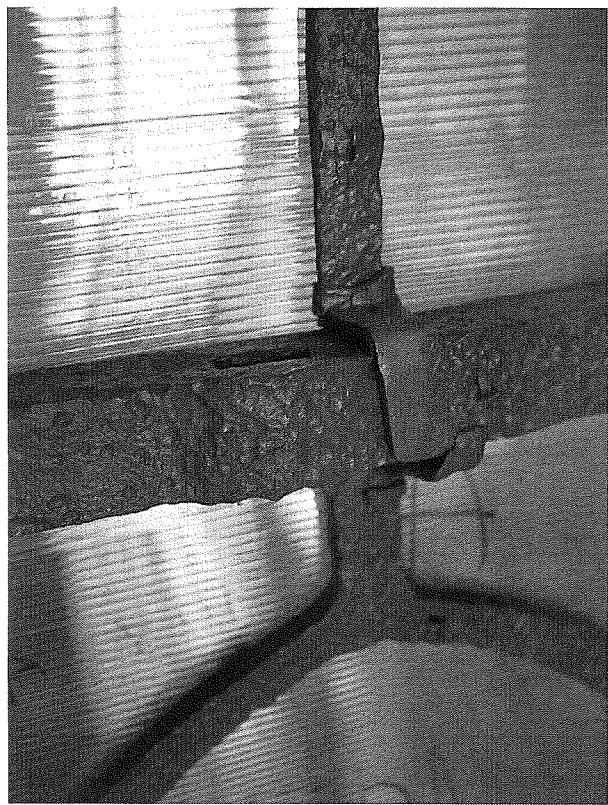
Additional architectural manipulations visually expand the apse enclosure. The hemicycle walls were laid on seven sides of a concentric dodecagon whose center point has an eccentricity of 1.5 meters or about 4.5 royal feet from the easternmost transverse arch, and the vault keystone is set at 20.5 meters or 63 royal feet, slightly higher than in the nave. The transitional bay is notably narrower and lower than the hemicycle: its windows are 13.05 meters high and with two lancets of 90 centimeters, while those of the turning bays are 13.55 meters tall and have lancets with a width of 1.08 meters.<sup>19</sup> The turning bays are defined by the deep webs of the vaults whose responds are narrower than those in the nave. Reduced to only three shafts corresponding

to the hemicycle ribs, the central responds no longer fall directly to the floor, but are recessed toward the wall (Plate VII and Figure 2.41 ahead). If the narrowness of the transitional bay may be explained as a means to ensure a straight transition to the hemicycle, the structural alterations in that space – the expanded windows and slender, recessed responds – subtly enlarge and thus enhance the hemicycle space.

Metal plays an integral role in the chapel's structural design. Iron bars extend from the brackets to the lower chapel wall. They form a system of linked bars that wrap around the lower chapel chevet and in the upper chapel at the base of the windows, the springing of the vaults, and the base of the upper cornice.<sup>20</sup> In the upper chapel, the bars run through the window mullions, also reinforcing the stained-glass armatures (Figure 2.4).



2.4. Paris, Sainte-Chapelle, exterior, upper chapel, iron armature. Photo: Author.



2.5. Paris, Sainte-Chapelle, exterior, upper chapel, window armature, iron tie. Photo: Author.

However, in the process of construction, the window armatures were not coordinated to the iron bars; at the insertion of the stained glass, metal ties had to be added to the armature and then hammered around the iron bar to hold the window in place (Figure 2.5). Iron bars also run through the buttresses and stair turrets, joining above the upper chapel vaults.<sup>21</sup> Finally, iron and lead bolts reinforce the tracery joints and attach the capitals and *en délit* colonnettes to the chapel body.<sup>22</sup> Combined with the iron and lead required for the stained-glass armature, the amount and cost of metal alone in the Sainte-Chapelle would have been significant.<sup>23</sup> This systematic use of iron and lead throughout the chapel reflects an increasing confidence in and knowledge of how iron could reinforce the weak points in masonry, after experimentation at Bourges and Chartres, as well as at Amiens and Reims.<sup>24</sup>

To summarize, the architecture of the Sainte-Chapelle exhibits two main aesthetic priorities. The first is the creation of an open, unencumbered space; all extraneous elements have been pushed outward and directed toward the external perimeter wherever possible. This tendency for an open space with a sleek design was typical of Paris, expressed early in the eleventh century

at Saint-Germain des Prés and also espoused in the nave of Notre-Dame, where all three-dimensional articulation was reduced to open the inner space of the nave and to enhance the planar quality of the wall. At the Sainte-Chapelle, this aesthetic preference led to daring solutions in both the upper and the lower chapels. In the upper chapel, the structural supports and dado arcade adhere closely to a single yet diaphanous enclosing frame. In the lower chapel, the effect of openness is more conceptual because of the lower vaults; although the nave extends laterally to aisles, the numerous columns and colonnettes appear decorative and the chapel wall is pierced by windows. In both cases, confidence in the use of iron to reinforce the chapel's structure allowed for a reduction in the massing of the stone.

The second priority involved the concealment of architectonics through refinements and decoration that create a *trompe l'oeil* effect. In the grand scheme of the architecture, this aesthetic was expressed in the porch with the placement of the buttresses to the west, in the lower chapel with the lateral extension of the nave wall to form aisles of the same height as the nave, and in the upper chapel with the illusion of a single respond per bay carried through to the floor from the vaults. The decorative motifs of the exterior, the profusion of columns, colonnettes, and tracery in the lower chapel, the upper chapel's strategically placed apostles, abundant sculpture, recessed shafts, and lack of unification in the elevation interrupt the transparent appearance of the structure, creating a less rational and more mystical atmosphere. The brilliant colors of the stained-glass windows, the glow of the gilding, and the opposing harmonies of the polychromed surfaces (red/blue, yellow/green) enhance this effect. Once in operation, these attributes of the Sainte-Chapelle, combined with the mellifluous songs of the liturgy and heady perfume of the incense, created a multi-sensory experience that brought the terrestrial in communion with the divine.

## 2.2 PROPORTIONS AND DIMENSIONS

The proportions and dimensions of the Sainte-Chapelle are also important properties of the aesthetic priorities governing the building's architecture. Consideration of these elements offers insight into the chapel's formal as well as its ideological relationships with other monuments. In addition, this data provides an indication of the process by which the building was constructed.

As mentioned previously, the preferred unit of measure at the Sainte-Chapelle was the royal foot, which here is taken to be .325 meters.<sup>25</sup> While no standard unit of measure was employed in thirteenth-century France and local foot measures (based on the Roman foot of .295m) were still frequently employed, the royal foot was predominant in Paris, and use of it at the Sainte-

Chapelle is evident from the whole numbers identified throughout the chapel: the large shafts of the lateral pier responds, and the vault ribs in the upper and lower chapels are one royal foot.<sup>26</sup> Two and a half royal feet made the width of the socles in the lateral pier responds, three royal feet the lower chapel wall at the dado, and four royal feet the lower chapel wall at the ground.<sup>27</sup> The upper chapel buttresses are six by four royal feet.<sup>28</sup>

While a 1:1 ratio governs the chapel's length and height, other proportional relationships are apparent at the Sainte-Chapelle. The distance from the interior of the upper chapel façade to the interior east wall is 31.70 meters or about 97.7 royal feet, yielding a proportion of nearly 3:4 between the porch and the internal dimensions of the chapel and exactly 3:4 between the internal dimensions of the chapel and its overall height.

The elevation of the Sainte-Chapelle also exhibits striking proportional relationships. From the ground, the keystones of the upper chapel are set at an average height of 27.27 meters or 84 royal feet.<sup>29</sup> The upper chapel floor, at 7.3 meters or 22.46 royal feet from the ground, stands at about a quarter of the way up to the keystones.<sup>30</sup> The upper chapel abaci are set at 20.85 meters or 64.15 royal feet from the ground, about three-quarters of the way to the upper keystone, and about a third of the way up from the upper chapel floor.<sup>31</sup> The upper vault keystones rise 19.88 meters or about 61 royal feet on average from the upper chapel floor, just more than three times the height of the lower chapel vaults.<sup>32</sup> The keystones of the lower chapel are set at a height of 6.51 meters or 20 royal feet, just less than one-quarter of the height from the ground to the upper chapel vaults; given the changes in the ground level, this proportion may once have been exact.<sup>33</sup>

While the lower and upper chapel vaults are related in proportion, the wall elevations do not show similar associations. In this respect, the chapel's elevation does not compare directly to those of the great cathedrals like Chartres, with its A:B:A elevation comprising nave arcade, triforium, and clerestory, or Amiens, with its A:A elevation between the nave arcade and the unified triforium and clerestory. Both the lower and the upper chapels have two-part elevations comprising a dado and windows above. Although the lower chapel does not rise to the height of a cathedral nave, the upper chapel's elevation can be likened to the triforium and clerestory zones of a great church. These elements far extend the normative proportions in those types of buildings. At Saint-Denis, for example, the triforium, which is equivalent in height to its dado, represents one-third of the height of the clerestory. In the Sainte-Chapelle, the upper chapel dado, rising 4.3 meters (13.2 royal feet) from the floor, comprises only about one-fifth of the entire upper chapel elevation, and represents just over one-quarter of the height of the windows. The upper windows dominate the elevation at 15.5 meters (47.7 royal feet), comprising almost half of the height of the entire chapel from the ground to

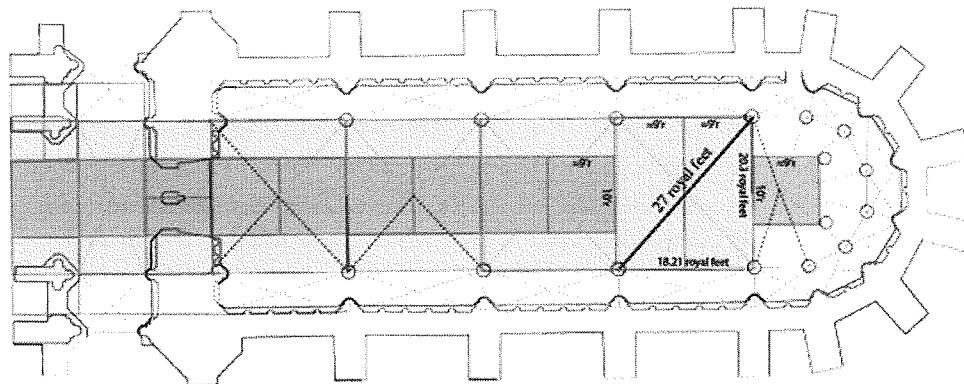
the pinnacles (32.5m/100 royal feet). Nevertheless, the relation of the height of the upper chapel keystones to the width of the chapel is 1:2.8, proportions more modest than those at Reims, with a ratio of 1:2.9, and at Amiens, which is 1:3.2.<sup>34</sup>

If the elevation of the Sainte-Chapelle does not correspond to that of a great church or cathedral, the height of the building definitely does. At 42.5 meters, the tip of the west gable rises to the same level as the vaults of Amiens Cathedral. The exterior elevation (from the ground to the pinnacles), 32.5 meters, reaches the height of the keystones in the choir at Notre-Dame Cathedral.<sup>35</sup> The keystones of the upper chapel, at 27.27 meters from the ground, rise slightly higher than those of Laon Cathedral (at 26.6 meters), and they are similar to the thirteenth-century nave vaults of Saint-Denis, which average 27 meters to the keystone.<sup>36</sup>

Yet the lateral dimensions of the Sainte-Chapelle bring the building within the framework of chapels in the Paris region. The royal chapel at Saint-Germain en Laye was proportionally similar to the Sainte-Chapelle: the interior width of Saint-Germain (from wall to wall) is very close to the clear floor space of the Sainte-Chapelle, and the total east-west length of the chapel fits within the straight bays of the Parisian chapel.<sup>37</sup> The body of the Sainte-Chapelle is nearly equivalent in size to the Lady Chapel of Saint-Germain des Prés. Although we do not know exactly where the measurements were taken, the dimensions of the Lady Chapel were 100 feet by 29 feet in length and width, and 47 feet 2 inches to the vault keystones, corresponding to 32.5 meters by 9.425 meters.<sup>38</sup> From later in the century, the chapel of the College of Cluny extended approximately 30 meters east to west by 10 meters north to south (Figure 1.53). It is thus in the elevation, most particularly, where the Sainte-Chapelle deviated from these chapels, because its great height associates the building with great churches and cathedrals.

In addition to these affinities with contemporary buildings, the dimensions of the Sainte-Chapelle bring the royal chapel into communion with biblical structures. Stephen Murray has shown that the 100 royal foot by 50 royal foot dimensions of the chapel body and the 50 royal foot by 30 royal foot porch correspond to the measures given for the house and porch of Solomon in 1 Kings 7:1–3 and 7:6.<sup>39</sup> While the perimeter of the Sainte-Chapelle was made according to a double square of 100 royal feet by 50 royal feet, the internal design of the building was based on a different standard. Studies of Gothic design have shown that the exterior and interior geometry were not always related.<sup>40</sup>

Distances inside the chapel run from pier center point to center point. In the lower chapel, from the north to the south, each nave bay spans an average 6.60 meters, just slightly more than 20 royal feet (20.3 meters).<sup>41</sup>



2.6. Sainte-Chapelle, plan with royal foot dimensions superimposed. Plan: Author.

On the east-west axis, the nave bays extend 5.91 meters, or about 18 royal feet, on average. These irrational numbers indicate that the lower chapel nave bays are the physical expression of geometric proportions obtained by the application of dynamic geometry on the ground. Between the free-standing piers, the nave bay has a diagonal of 27 royal feet, creating a ratio of 2:3 units between the east-west length of the nave bay and the diagonal, with each unit being 9 royal feet (Figure 2.6). These numbers are the physical expression of the  $\sqrt{5}/2$  rectangle (the golden ratio). The numbers are so precise here that this must have been integral to the construction of the chapel, with a diagonal of exactly 27 royal feet, the sides of the rectangle are exactly 18.15 royal feet and 20.6 royal feet.<sup>42</sup> In the lower chapel, the center points between the nave bays fall almost exactly at these numbers (bay 1 has a north-south distance of exactly 20.67 royal feet; the average of the east-west distances in the lower chapel bays is 18.11 royal feet).<sup>43</sup> The distance of 27 feet could have been determined by the use of a perch of 9 royal feet.<sup>44</sup> It is perhaps a key to the construction of vaults in general as this ratio is also observed in those of Notre-Dame.<sup>45</sup>

The Sainte-Chapelle likely was planned from the top down, with priority given to the open space of the upper chapel. The upper chapel's dimensions of 100 royal feet by 50 royal feet between the external length and the buttresses and 100 royal feet by 30 royal feet for the internal clear space exhibit solid whole numbers of the kind often used in the design of great churches. Yet even if the upper chapel guided the overall design of the building, the relationship between the upper and the lower chapel is obviously very close; the two levels share the same perimeter and the lower chapel supports the upper chapel. The center points of the lower chapel wall respond match the center points of upper chapel responds, so the lower chapel wall responds ultimately connect to and support the upper chapel vaults. In the upper chapel, this meant that the first bay began 1.37 meters east of the façade wall. This area provided the extra space for the doors of the spiral staircases.

Great attention was paid in the planning to reduce the mass that the upper chapel would exert on the lower chapel. The wall of the lower chapel is on average 1.31 meters (4 royal feet) thick at the ground, while that of the upper chapel is on average .86 meters or about 2.5 royal feet.<sup>46</sup> While the lower chapel façade is 3.3 meters (about 10 royal feet) thick, that of the upper chapel is 1.84 meters (5.5 royal feet) thick. The buttresses also reduce in size as they ascend from the lower chapel to the upper chapel. At ground level, the buttresses are 3 meters long by 1.35 meters wide, while at the level of the upper chapel floor, they are 2 meters long by 1.27 meters wide.<sup>47</sup> The fact that windows also occupy most of the upper chapel's elevation also works to lighten the overall superstructure.

If the Sainte-Chapelle had been planned from the top down, it nevertheless had to be built from the ground up. The whole numbers in the lower chapel bay vaults and the clear ratios in the heights of the vaults were important factors in the framing of the chapel and the laying out of its plan. Yet the precise geometry used in the setting of the chapel plan on the ground remains elusive.<sup>48</sup>

Despite the differences between the upper chapel and the lower chapel, the relative consistency in the building's structure and articulation suggests that no major breaks occurred during the process of its rapid construction.<sup>49</sup> However, a few incongruities reveal incremental adjustments to the building. They occur in the nave bays. On the north side of both the upper and lower chapels, the second bay contains a small portal, each of which was obstructed on the exterior by the elevation of the south wing of the Palais de Justice. Scaffolding put in place on the north side of the chapel for the restoration of the stained-glass windows in 2012 brought the upper chapel north nave portal to light (Figure 2.7).<sup>50</sup> The lower chapel portal, hidden by retail tapestries of the *Dame à la Licorne*, opens into what has been made into the storage area of the boutique (Figure 2.8). While both portals have sustained minor restorations (Figure 2.9), most of the stones of the upper chapel portal are medieval, making it the only major element of the Sainte-Chapelle that has not been subjected to transformative restoration and whose masonry is apparent to the naked eye.

On the exterior, both doors are framed by two *en délit* colonnettes attached with lead onto a coursed embrasure with thin, sculpted shafts. Their capitals, of varying heights corresponding to either shafts or colonnettes, bear foliate sculpture datable to the mid-thirteenth century. Above, the lintel of each door is made of a single monolith articulated with a depressed arch formed by thick moldings.

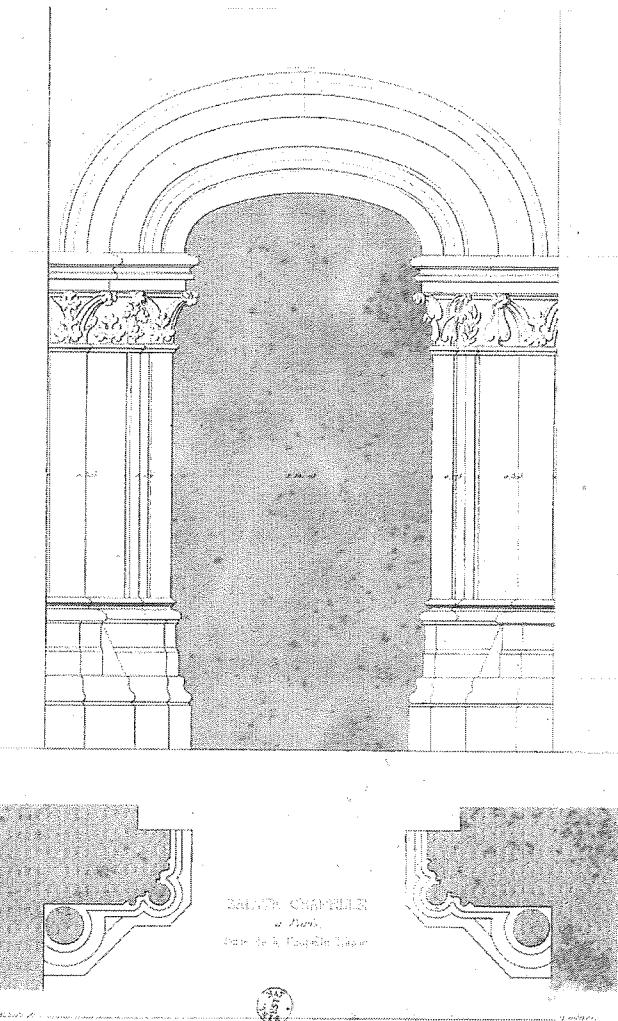
Oddly, the upper chapel portal, although complete, never opened into the interior of the chapel. At the level of the capitals, unfinished jamb imposts with diagonal profiles move directly into the door space and hold a single keystone (by means of a temporary lead joint) between them. A nineteenth-century



2.7. Paris, Sainte-Chapelle, exterior, upper chapel, north nave, second bay, portal. Photo: Author.



2.8. Paris, Sainte-Chapelle, exterior, lower chapel, north nave, second bay, portal. Photo: Author.



2.9. Paris, Sainte-Chapelle, lower chapel, second bay portal, restoration *attachment*. © BnF Est. (Va 225h / A21744).

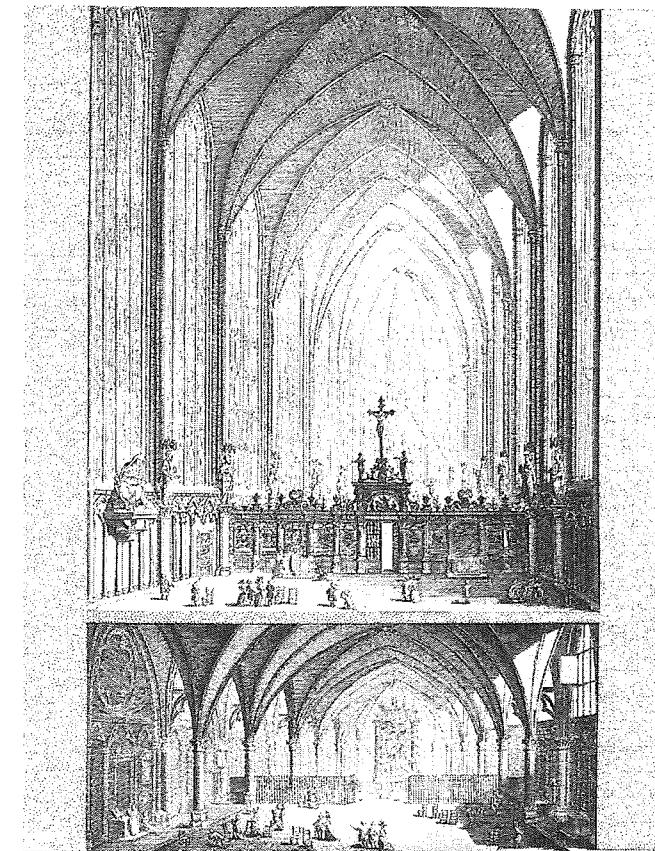
stone inserted between the keystone and the lintel corresponds to a dado capital on the interior, added during the nineteenth-century restoration. While the stones in the coursing through the door opening have different finishes, they are medieval. Indeed, this door offers fascinating insight into the process of construction and anticipated use of the Sainte-Chapelle. Given that the monolithic, molded lintel was cut to fit onto the coursing, as well as the harmony of the sculpted capitals and bases with those of the interior chapel, it appears that the portal was inserted sometime soon after the walls were raised. But at some point during its construction, it was decided that there would be no use for it and the doorway was never opened.

An image by Ransonnette illustrates the portals from the interior of the chapel as they looked in the eighteenth century (Figure 2.10). Both had square frames designating their location. An altar stood in front of the lower chapel door, which suggests it was not in use at the time the image was made. The upper chapel door had a framed painting hanging on it, which also suggests it was not used.

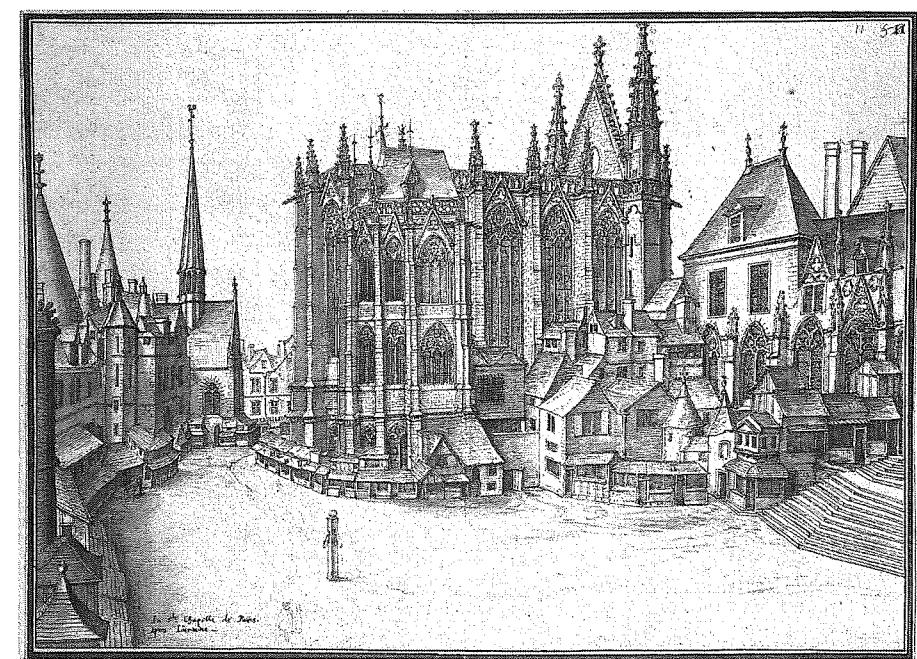
Had they been operational, the doors would have opened out to the central courtyard of the palace, in front of the Trésor des Chartes, itself linked to the first turning bay of the chapel. Jean Guerout claimed that the *Audience du Roi* (Office of the Royal Seal) stood in this location from about 1285.<sup>51</sup> A two- or three-storied building existed in the location of the portals in the eighteenth century (Figure 2.11).<sup>52</sup> According to plans of this building drawn in 1783, neither level had direct access to the Sainte-Chapelle (Figures 2.12 and 2.13).

The design of the portals, with their shafts, sculpted capitals, and molded arch, suggests that they were made for important dignitaries. It is tempting to consider that the doors may have been planned for royal ceremonial entrances from either the courtyard or the gallery, but at some point, apparently even during the process of construction, they were rejected.<sup>53</sup>

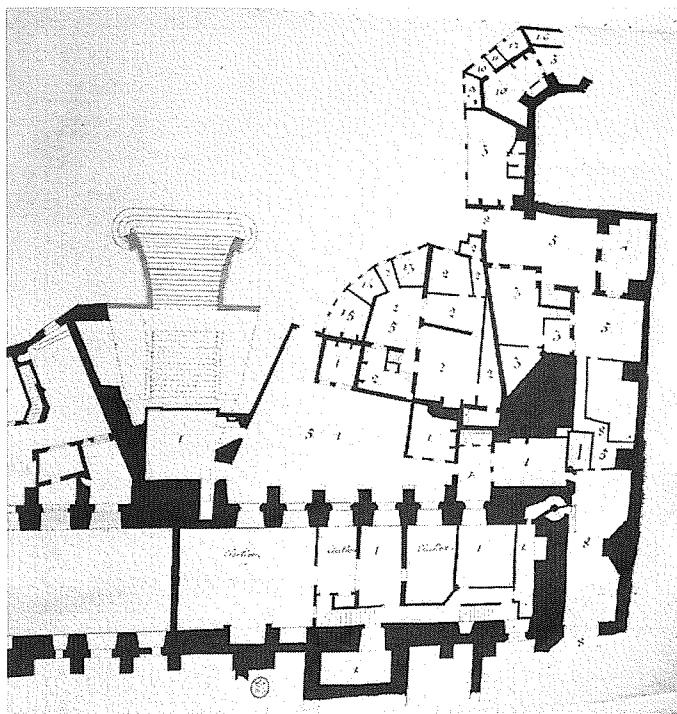
Another incongruous part of the plan and elevation exists in the third bay at the niche. As discussed earlier, the niche opens into the upper chapel wall, which has been narrowed (Plate VII and Figure 2.3). The outer enclosure of the niche does not extend from the chapel wall but is cantilevered beyond the level of the lower chapel wall. On the exterior, the arch of the lower chapel window pushes the dividing stringcourse into a point at the level of the third bay where the niche is located (Plate II). While this point indicates the niche from the outside of the chapel, it also represents a difference in design from the other bays. As many cathedrals were built simultaneously at the west and the east, it is possible that the third bay was one of the last bays completed, and the niche was not an inherent part of the plan. On the inside, the sculptural transition in the spandrel area where the niche was placed is somewhat awkward (Figure 2.14, left). However, if it is tempting to see these incongruities as later adaptations, the niche construction parallels those (heavily restored) at the royal chapel of Saint-Germain en Laye (see Figures 2.33 and 3.13 through 3.15 ahead), and they were integrated into the chapel's thematic program with the stained-glass windows, which enriched their function as a setting for the royals, as Beat Brenk has suggested.<sup>54</sup> Overall, the correspondence between the upper and lower chapels, especially the links between the wall responds of the lower and upper chapels, suggest that the two levels were built in relation to one another, probably simultaneously.



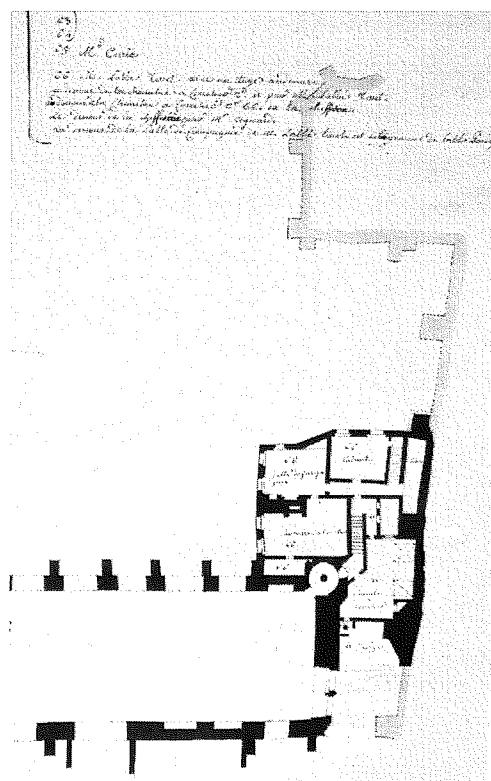
2.10. Ransonnette, Sainte-Chapelle, interior of upper and lower chapels. © Centre des monuments nationaux, Paris.



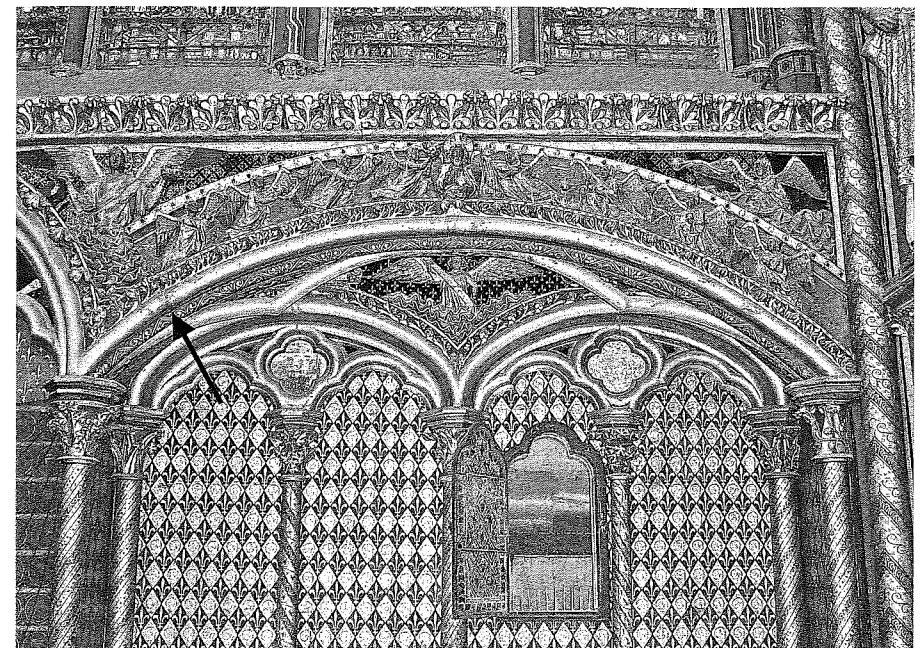
2.11. Etienne Martellange, Palais de la Cité. View of Cour du Mai. © Ashmolean Museum, Oxford (CL II 117).



2.12. Palais de la Cité, plan of the Cour du Mai prior to reconstruction in 1783, lower level. (BnF Est. Ve 84 fol. 1). Photo: Author.



2.13. Palais de la Cité, plan of the Cour du Mai prior to reconstruction in 1783, upper level. (BnF Est. Ve 84 fol. 2). Photo: Author.



2.14. Paris, Sainte-Chapelle, interior, upper chapel, niche, detail of sculpture. Photo: Author.

### 2.3 SCULPTURAL DECORATION

Sculpture plays an important role in the Sainte-Chapelle. Profuse but not overwhelming, sculpted decoration accentuates transitions, adds ornament, and detracts from the architectonics. On the exterior, figural sculpture animates the tympana, archivolts, and quatrefoils in the upper chapel socle (Plates X and XI). This sculpture was so effaced during the Revolution that the original themes could only be identified through earlier graphic sources and descriptions. While this material unanimously informs that the upper chapel tympanum contained an image of Christ in Majesty and a trumeau of Christ in Benediction, records of the lower chapel tympanum are less consistent. The majority of antiquarians identified the tympanum as the Coronation of the Virgin and attest that the trumeau held a sculpted image of the Virgin.<sup>55</sup> All of these sculptures were recreated in the nineteenth century by Geoffroy Dechaume, who employed the tympanum of the Coronation of the Virgin at Notre-Dame as a model.<sup>56</sup> The surrounding archivolts of prophets and the quatrefoils in the socle with scenes from Genesis were also devised by the same workshop with little knowledge of the original.

On the interior of the upper chapel, the figural sculpture consists of small angels censing and carrying crowns in the spandrel zones of the dado and the famous group of twelve apostle statues. Six of the original apostle sculptures remain in the chapel, albeit heavily restored, while the six others are fragmentary but less heavily reworked in the Musée national du Moyen-Âge.<sup>57</sup> Formal

differences among the sculptures have led scholars to question whether they were produced and installed in the chapel at the same time.<sup>58</sup> If not, why only six apostles would have been sculpted in the first place is difficult to justify in terms of their placement in the chapel and in terms of their function. Stylistic difference does not always indicate a programmatic change, and in this case it may have simply been down to the presence of several workshops or hands working on the sculpture at once.

In contrast to the conventional subjects of the figural sculpture, the foliate sculpture is impressively varied, with representations of diverse genus and species of local forest plants. Denise Jalabert identified representations of ivy and grape vines; oak, maple, poplar, and fig trees; and shrubs and flowers, including rhubarb, parsley, thistle, fern, and different species of daisies and roses.<sup>59</sup> Yet for all of its variety and apparent naturalism, the foliate sculpture at the Sainte-Chapelle is also artfully arranged on its support and controlled; indeed, as Jean Givens has observed, it is more "descriptive" than mimetic.<sup>60</sup>

Foliate sculpture lines the exterior stringcourse marking the transition between the lower and upper chapels, ornaments the upper reaches of the chapel in the form of crockets, extends beyond the capital frieze and lintel in the portal to the embrasures in the upper chapel, and flourishes on the capitals. Capitals accentuate all responds throughout both upper- and lower-chapel porches, on the portal jambs, throughout the lower chapel in the freestanding piers and the dado arcade, at the springing of the vaults, in the upper chapel on the dado, in the window tracery, and on the responds at the springing of the vaults.

This collection of foliate sculpture can be grouped into four general types. While differences in capital type are usually associated with campaign changes in larger buildings or sometimes with diverse locations and functions, such clear demarcations do not occur at the Sainte-Chapelle. In general, the majority (but not all) of the finer, more descriptive foliate capitals were placed on the portals or in the upper chapel dado, while most (but not all) of the simply styled foliate capitals appear in the lower chapel. If these differences might have responded to a directive to apply the more detailed work to specific parts of the building, they might also indicate the presence of multiple hands or workshops. There is no indication that the most elaborate capitals were positioned to accentuate the liturgy or draw attention to certain members of the audience.

Before describing the different types of capitals, a word should be written about their state of preservation, particularly given the near total replacement of the figural sculpture during the nineteenth-century restoration. Visual and archival examination suggests that the portal capitals, most of the porch capitals, and the dado capitals of the upper chapel are original, while in the lower chapel, all of the freestanding capitals and most of the dado capitals are nineteenth-century replacements.<sup>61</sup> While it is impossible to know how much freedom was actually permitted in the nineteenth-century carving of the new

capitals, the restoration itself aimed to be archaeological, so these capitals may very well be reproductions of types that existed in the lower chapel.<sup>62</sup> However, the *cul-de-lampes* that support the apostle statues are modern, and so distinct from the other sculpture that they may have little resemblance to what originally stood in their place.

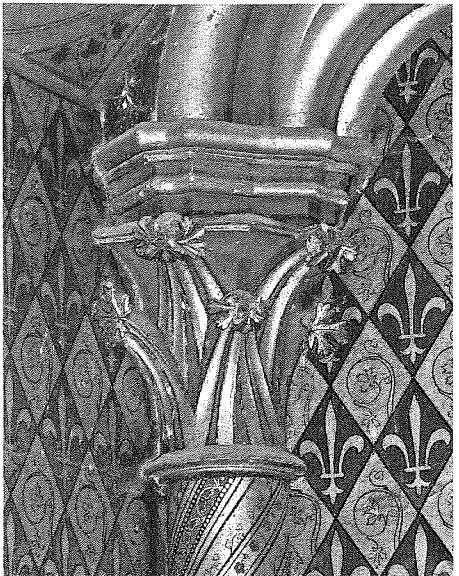
The first type of capital at the Sainte-Chapelle, a variation of the simple crocket capital, proliferates in the interior and on the porches of the lower and upper chapels (Figure 2.15). Rising from the astragal, long, wide, and sometimes ridged stems reach to accentuate the angles of the abacus. Rather than carrying regular crockets, the stems terminate in a cluster of two or three small leaves. Some of these capitals also carry a single leaf or a sprig of leaves on the lower basket (Figure 2.16). Although the placement of the leaves on the capital is contrived, many are botanically accurate. This type of capital is ubiquitous in Paris after about 1230, seen, for example, in the transept arms of Saint-Denis (Figure 2.17), as well as in the new buildings of Saint-Germain des Prés, Saint-Jean de Latran, and other Parisian sites.<sup>63</sup>

Located predominantly in the upper chapel dado and along the exterior balustrades, a second type of capital has botanically accurate leaves that are artfully positioned along contours of the basket (Figures 2.18 and 2.19). Identifiable down to the genus and species, a leafy sprig is set near the base of the basket and leaves or flowers ascend to the abacus. With sculpted roses, berries, acorns and so forth, and sometimes small fauna, these are the most striking capitals at the Sainte-Chapelle, but they are also unusual insofar as they no longer adhere to a classicizing composition. While these capitals have few parallels in quality and variation, capitals of this type also existed in the contemporary refectory and the Lady Chapel of Saint-Germain des Prés (Figures 1.35 and 1.37).<sup>64</sup> Another, less refined example of the type has a provenance from the (no longer extant) Carmelite church founded by Louis IX around 1257 (Figure 2.20).

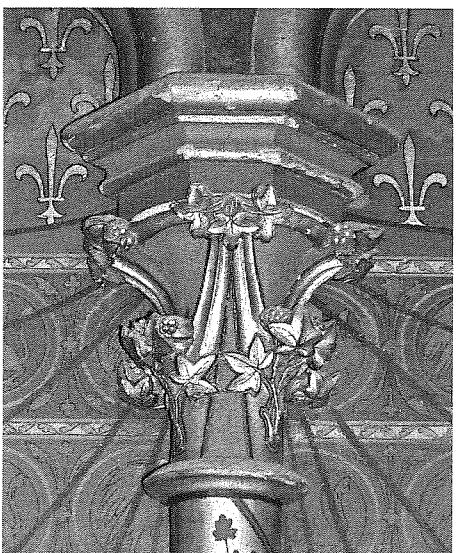
A third type of capital has single leaves that run vertically from the astragal up to the abacus over which they turn back slightly, with or without another row of leaves around the basket (Figure 2.21). This type might have derived from the earlier waterleaf form. It is seen throughout Paris over the course of the century, from Notre-Dame (Figure 2.22) to Saint-Germain l'Auxerrois, Saint-Jean de Latran, and Saint-Germain des Prés.<sup>65</sup>

A final type extant on the upper chapel porch has two distinct rows of leaves arranged around the basket of the capital (Figure 2.23). This type had a long history throughout Paris, becoming more common in the second half of the century, and appearing at Saint-Germain l'Auxerrois (Figure 2.24).<sup>66</sup>

While predominant at the Sainte-Chapelle, the emergence of this type of foliate sculpture throughout the region, and then Europe, after about 1225 raises a number of questions that go beyond the scope of this chapter.<sup>67</sup> Its significance transcends traditional interpretations of this sculpture as a general



2.15. Paris, Sainte-Chapelle, interior, upper chapel, dado, capital, type 1. Photo: Author.



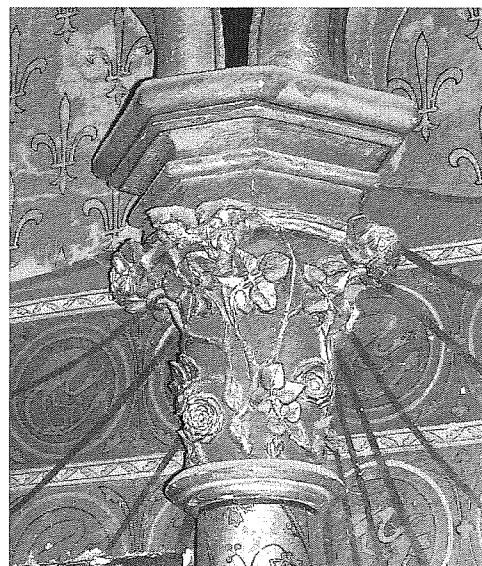
2.16. Paris, Sainte-Chapelle, interior, upper chapel, dado, capital, type 1, variation. Photo: Author.



2.17. Saint-Denis, abbey church, interior, nave triforium, capital, type 1. Photo: Author.



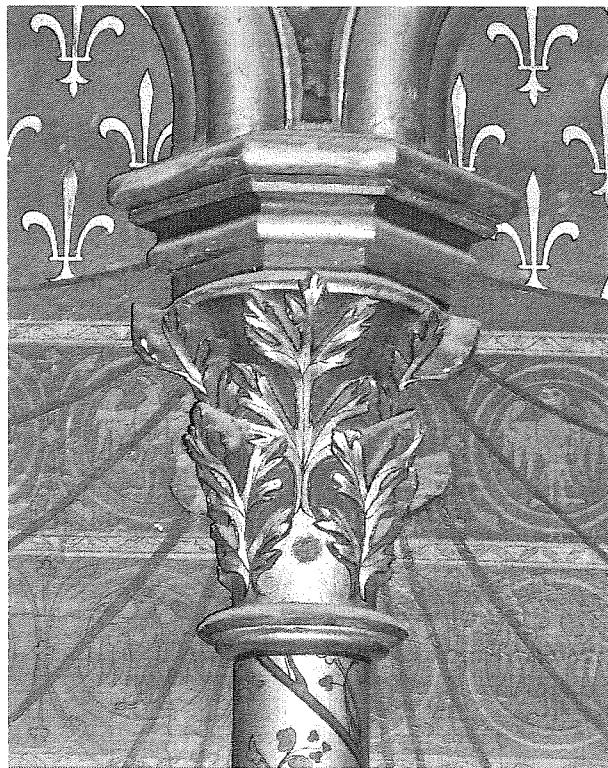
2.18. Paris, Sainte-Chapelle, interior, upper chapel, dado, capital, type 2. Photo: Author.



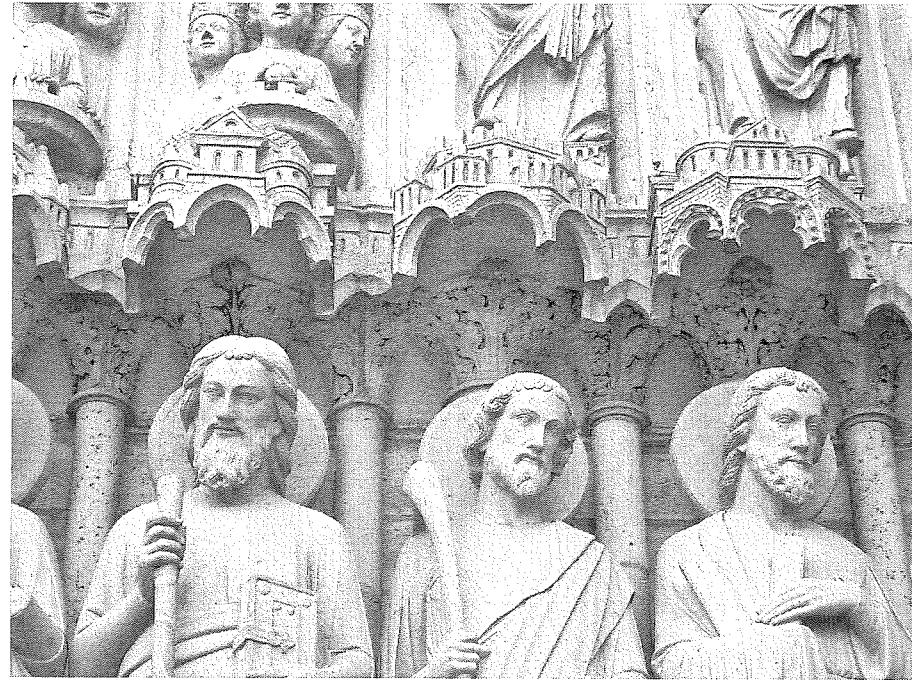
2.19. Paris, Sainte-Chapelle, interior, upper chapel, dado, capital, type 2. Photo: Author.



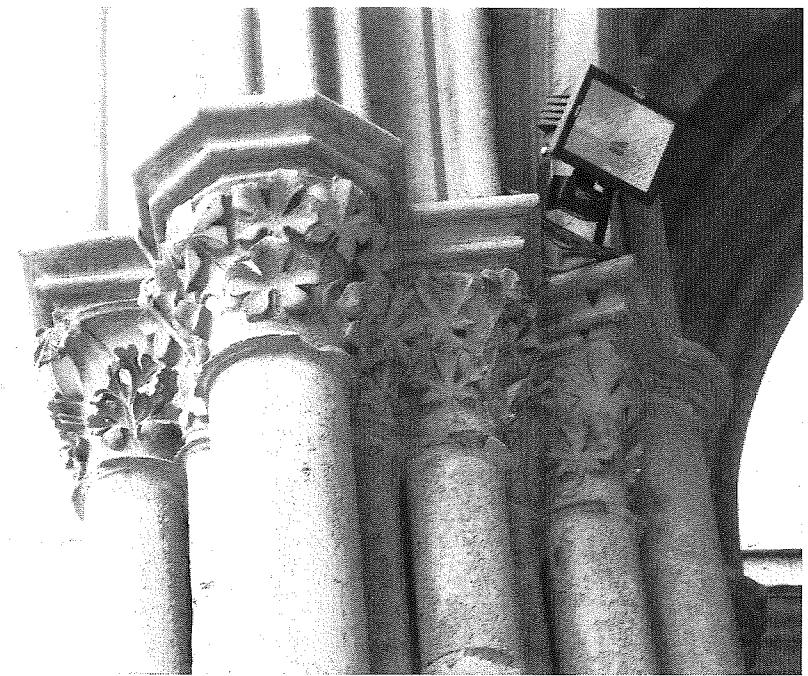
2.20. Church of the Carmelites, capital, type 2 (Musée national du Moyen-Age – Thermes de Cluny). Photo: Author.



2.21. Paris, Sainte-Chapelle, interior, upper chapel, dado, capital, type 3. Photo: Author.



2.22. Paris, Notre-Dame, north portal of west façade, capital, type 3. Photo: Author.



2.23. Paris, Sainte-Chapelle, interior, upper chapel, porch, capital, type 4. Photo: Author.



2.24. Paris, Saint-Germain l'Auxerrois, interior nave, capital, type 4. Photo: Author.

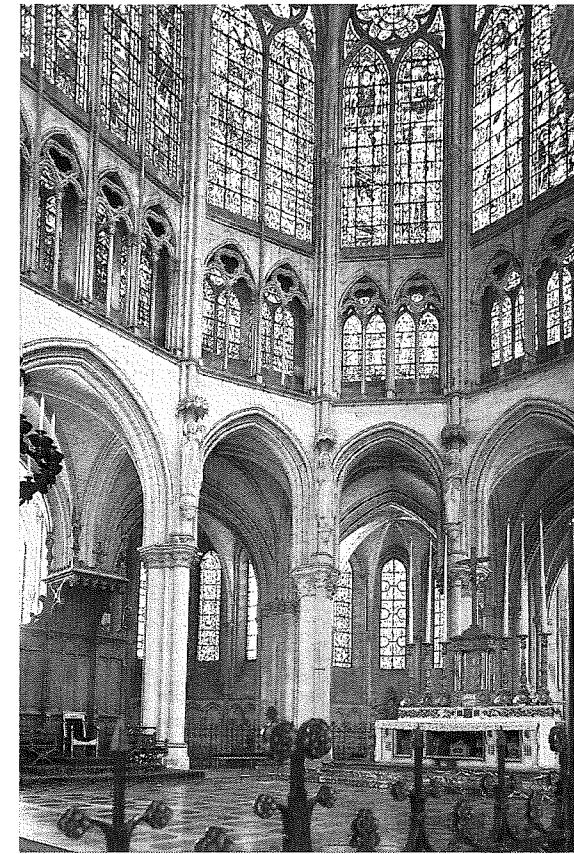
allusion to Paradise or Eden, and may be explained more broadly by a shift in visual culture. The resurgence of Aristotelian empiricism, although highly debated in the Paris schools, may have had an impact on those who commissioned this type of work.<sup>68</sup> The sheer number of capitals in the chapel would have allowed for a certain amount of experimentation and development on location, although the botanical accuracy and diversity could equally have been a directive issued by a patron. While the capitals at the Sainte-Chapelle share similarities with other Parisian sculpture, they cannot be associated definitively with a single site, which suggests a broad trend. Beyond the Sainte-Chapelle and other prestigious buildings, another explanation for foliate sculpture's prominence in Paris during this period may be simply that it was perhaps faster and less expensive than foliate sculpture to produce, and therefore employed more often to decorate buildings with smaller endowments.

#### 2.4 THE ROYAL CHAPEL AND RAYONNANT ARCHITECTURE

The Sainte-Chapelle participated fully in the metropolitan style of architecture produced in Paris in the 1240s known as Rayonnant, and many of its decorative features appear in contemporary buildings throughout the region. If the chapel did not innovate new forms, it popularized certain motifs and decorative elements within the Rayonnant style. At the same time, the Sainte-Chapelle's ornamental emphasis existed as an alternative to another trend characterized by the linear forms and architectural unity pioneered at Saint-Denis. A closer look helps to identify the different approaches in the architecture of the two monuments, which were not entirely mutually distinct.

One of the significant innovations in the generation preceding the Sainte-Chapelle was the unification of the elevation. At the cathedrals of Reims (in the apse) and at Amiens (in the nave), the mullions of the clerestory were extended down to the triforium, joining the two levels.<sup>69</sup> At Saint-Denis, this linkage went further: the vault responds descend from the springer in an uninterrupted line down to the floor (Figures 1.23 and 1.24). Mullions elongated from the clerestory formed vertical units that broke the horizontal rhythm of the triforium arcade. In the clerestory, the mullions became indistinguishable from bar tracery when they ascended into rosette patterns.

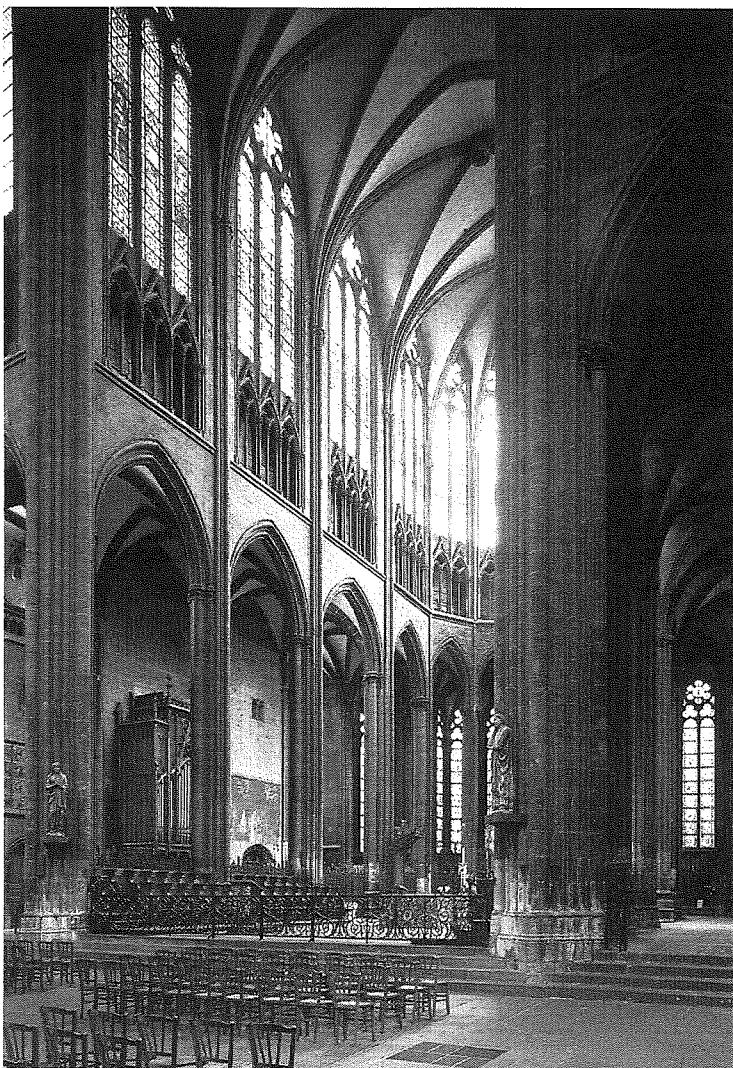
The aesthetic effects of the liberated mullion developed in two general directions. First, at Saint-Denis, the walls between these linear forms were progressively voided, creating the skeletal structure so characteristic of Gothic architecture.<sup>70</sup> There, architectural decoration, such as foliate string-courses and capitals like those seen at Amiens and Reims, was minimized to emphasize the vertical elements of the building. With the glazing of the triforium at Saint-Denis, only the arcade, now joined by mullions to the clerestory, remained to designate the mid-level. This architecture emphasized



2.25. Troyes, Cathedral Saint-Pierre-Saint-Paul, interior, nave toward chevet. Photo: Stephen Murray © Mapping Gothic France.

the anagogical implications of Gothic, with the main forms of the structure ascending vertically from the ground to the vault of heaven with the least amount of interruption.

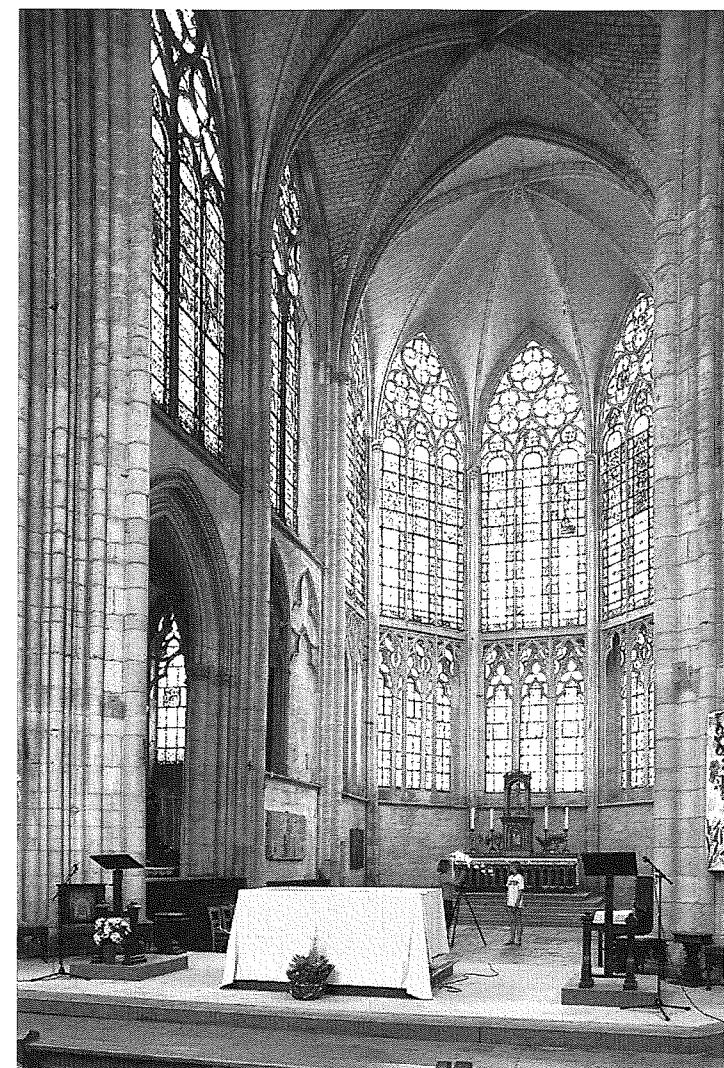
The cage-like structure and ascendant qualities of the architecture of Saint-Denis were reproduced in buildings and reconstructions that succeeded it. In Paris proper, the finest expression of this tendency is seen in the reconstructed fragments of the Lady Chapel at Saint-Germain des Prés (Figure 1.36). Though having an elevation of but two levels, the dado and clerestory were unified by responds that ran uninterrupted from the vault springers to the floor, dividing each arch of the dado into a single rectangular unit. The entire system was separated from the wall and stood as an independent screen in the apse. At Saint-Germain, these forms were extremely thin and delicate, appearing more like perfect metalwork filaments than heavy stone. Other noteworthy Parisian examples exist in the later phases of the nave chapels and the transept façades of Notre-Dame (Figures 1.17, 1.19, and 1.20).<sup>71</sup> Further afield, this approach to architecture also found expression at Troyes (Figure 2.25), Clermont-Ferrand (Figure 2.26), and Limoges



2.26. Clermont-Ferrand, Notre-Dame Cathedral, interior, nave toward chevet. Photo © Sam Sweeny.

cathedrals, to name a few, and reached a zenith in France at Saint-Urbain at Troyes (Figure 2.27). The emphasis on linear verticality informed what became the Perpendicular Style in England. But it was not the only direction in which Rayonnant architecture, ever experimental and adaptable, developed.

The decorative potential of the liberated mullion and arcade screen became important as an alternative direction for other Rayonnant buildings in Paris and beyond. The Sainte-Chapelle manifested this orientation. While arcaded dados were relatively common, at the Sainte-Chapelle, the repetition of shafts and arches throughout the elevation produced patterns across the lateral surfaces. This approach confounds the perception of structure and emphasizes the mystical potential of architecture.



2.27. Troyes, Saint-Urbain, interior, nave toward chevet. Photo: Stephen Murray © Mapping Gothic France.

In addition to this linear decoration, sculpted ornament and applied decorative forms are pervasive at the Sainte-Chapelle. All shafts carry foliate capitals set at different levels corresponding to their spring points. The sweeping line of the main responds in the upper chapel are interrupted by the apostle statue at the transition between the dado and the stained-glass windows. The wall surfaces of the dados are either sculpted as in the upper chapel spandrel zone, or decorated with trefoils and figural medallions in the lower chapel. Trefoils are repeated in the spandrels of the lower chapel windows as well as in the apse windows of the upper chapel. Stringcourses are given foliate ornament. The exterior gables are accentuated with crockets.

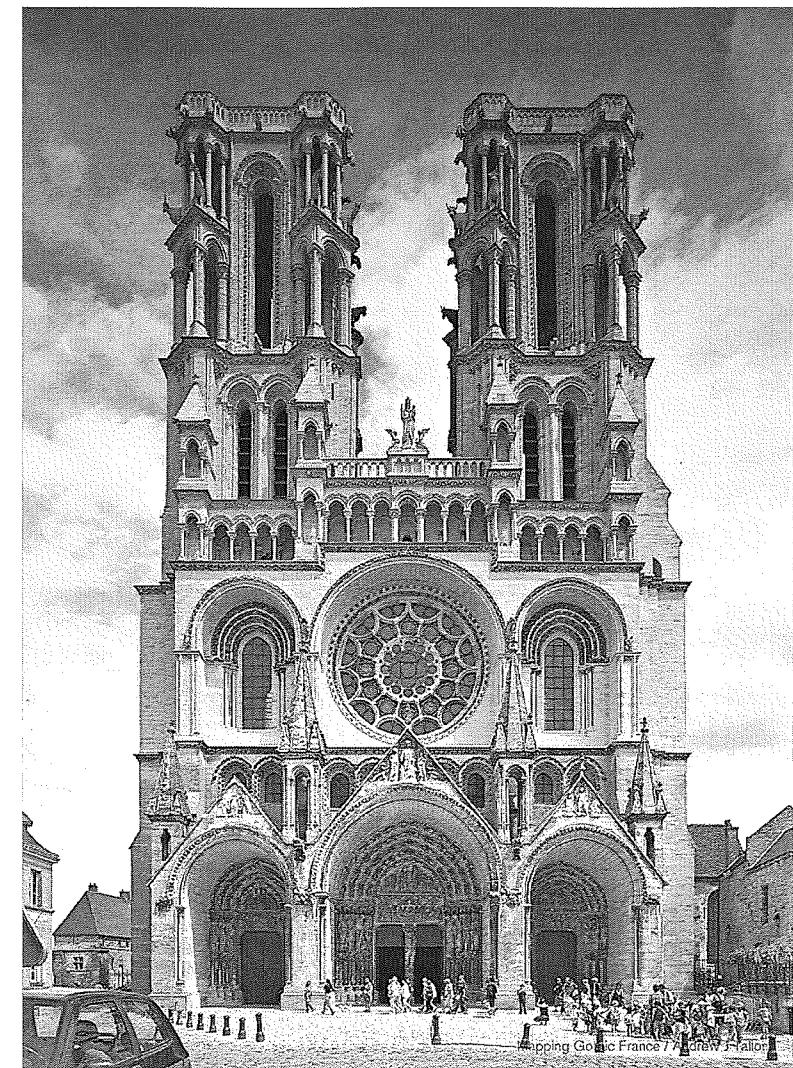
Such ornament as that found at the Sainte-Chapelle could be applied onto different surfaces and in different scales without the total architectural commitment required at Saint-Denis. A foliate embrasure on the façade or an arcaded triforium with a motif of quatrefoils or trefoils was enough to signal the style. While the anagogical, cage-like structure of Saint-Denis existed as the most avant-garde iteration of this architecture, the transcendental, ornamental quality of the Sainte-Chapelle became one of the defining features of thirteenth-century Paris. Again, if these forms did not originate at the Sainte-Chapelle, this building perpetuated and popularized them, ensuring their continuity.

The great formalist scholars of twentieth-century medieval architecture, Bony, Branner, and Grodecki, among others, have identified many of the sources and repetitions of the motifs that define the Sainte-Chapelle. Some of their observations may be reconsidered. One of the most distinctive patterns identified with the Sainte-Chapelle is the alternating gable and pinnacle motif that encircles the exterior at the top of the building (Plate II). As Branner and Bony found, this combination also exists at Cambrai and Tournai.<sup>72</sup> However, the precise dates of these two monuments now force a reconsideration of these as a source. While Branner conjectures that the east end of Cambrai was planned by about 1230, Bony dates it to between 1239 and 1251.<sup>73</sup> Construction on Tournai began in 1243, a few years after the Sainte-Chapelle, although the pattern may have been more common in the northeast than in Paris.

An early source for the gable and pinnacle pattern exists in the west façade at Laon, constructed between 1190 and 1205 (Figure 2.28). Massive gables, separated by equally large pinnacles, frame the projecting arches of the portal porches. The separation of these large volumes into discrete parts in the façade at Laon also anticipates the "breaking up" of forms with mullions that became ubiquitous in Rayonnant.<sup>74</sup> But the gable and pinnacle motif at the front of the building would be repeated often after this church, at Amiens and Reims, for example.

The now lost church of Saint-Nicaise at Reims offers a near contemporary comparison with the Sainte-Chapelle (Figures 2.29 and 2.30). Although the exact dates for the construction of the church are uncertain, the first stone was laid in 1231 and the façade appears to have been nearing completion by 1256.<sup>75</sup> A series of seven graduated gables spans the portals, reaching its highest point above the central portal. Pinnacles stand at the interstices of the gables and rise higher than each gable apex to accentuate the vertical axis of the façade. If the graduated gables do not parallel those of equal size at the Sainte-Chapelle, they exhibit the same alternating motif.

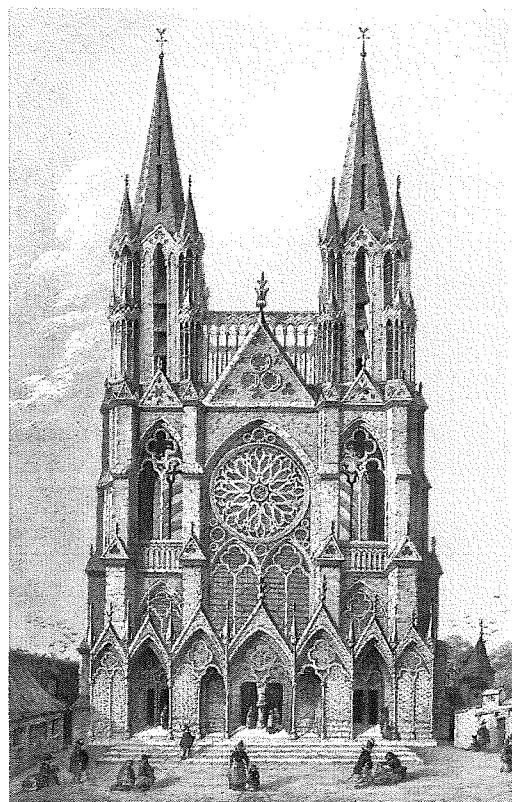
In addition to the gable and pinnacles, other correspondences exist between Saint-Nicaise and the Sainte-Chapelle. Every arch on the church façade is filled with a tracery quatrefoil over trilobe arches, a design that exists in the upper chapel dado. This design also runs down the nave of the great church, as seen in the image of the southern side of the building (Figure 2.30). The



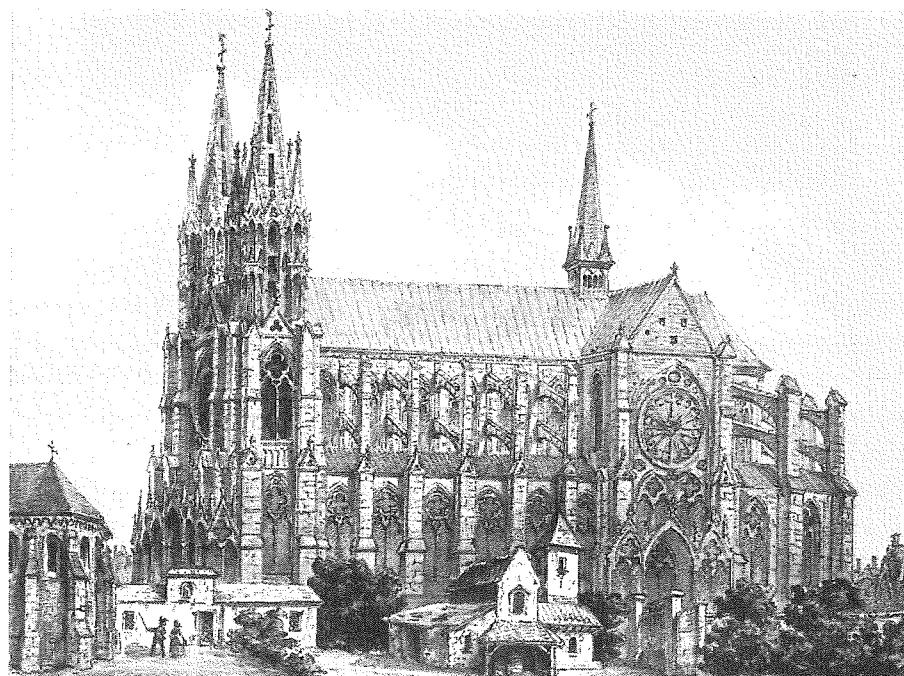
2.28. Laon, Notre-Dame Cathedral, exterior, façade. Photo: Andrew Tallon © Mapping Gothic France.

design of the cloister arcading at Saint-Nicaise is also close to the tracery pattern of the Sainte-Chapelle's nave windows (Figure 2.31).

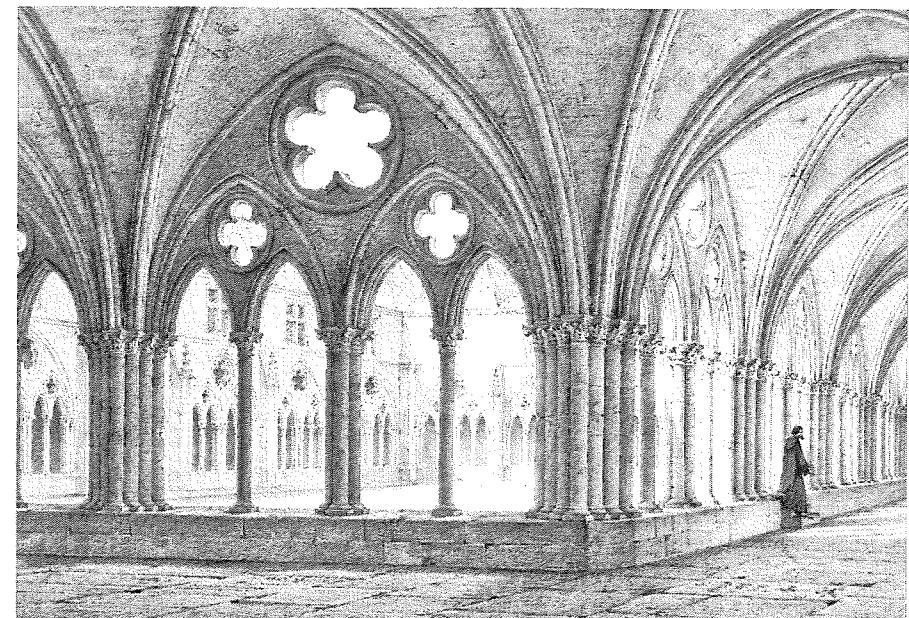
Equally interesting is the conception of the mass of the façade at Saint-Nicaise, which corresponds to the exterior of the Sainte-Chapelle. In many High Gothic churches, the tendency was to create a grid-like structure in the façade using different levels of arcading and a gallery of kings. These horizontal elements were omitted in the façade of Saint-Nicaise, which, like the Sainte-Chapelle, emphasizes verticality. In addition, at Saint-Nicaise the massing of the large central arch flanked by smaller units to either side is also seen in the west front of the Sainte-Chapelle. Another important similarity is the opening between the heavy buttressing of the front. Even the bases of the bell towers at Saint-Nicaise are open, filled only with light tracery.



2.29. Saint-Nicaise, Reims, west façade. © BnF Est. (Va 51 t. 12 Marne-Reims III / H133898).



2.30. Saint-Nicaise, Reims, exterior, elevation from south. © BnF Est. (Va 51 t. 12 fol. /H133899).



2.31. Saint-Nicaise, Reims, cloister arcading. © BnF Est. (Va 51/H133903).

The buttresses themselves are unadorned and capped with small pediments decorated with trefoils; a similar form is found at mid-level on the south stair turret of the Sainte-Chapelle.

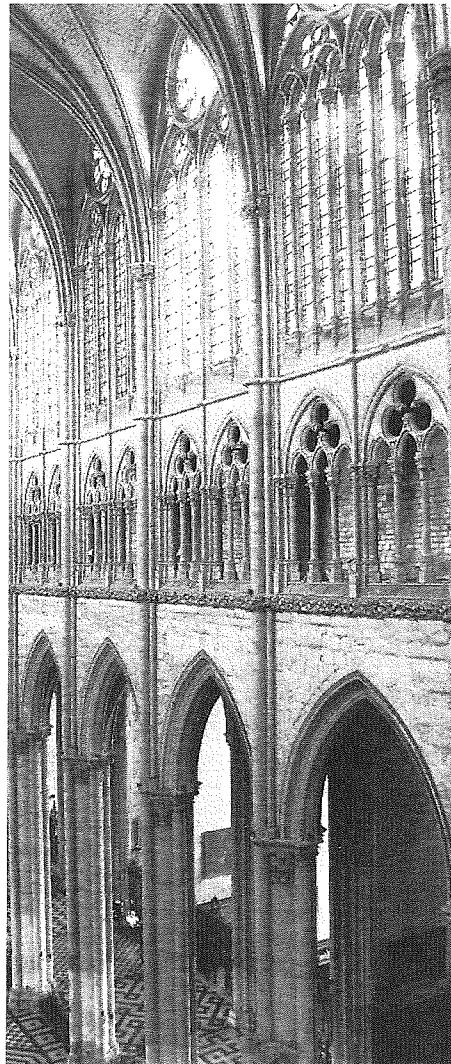
In Paris, gables appeared on the series of chapels added to the nave of Notre-Dame over the course of the thirteenth century. The dates of the chapels are uncertain, and they have sustained a significant amount of restoration, but documents and stylistic analysis offer insight into their relative chronology. In the most recent analysis, Mailan Doquang dates the earliest of the nave chapels, the first of the south side nearest to the façade and the four western bays of the north side of the nave, to between 1228 and 1245 (Figure 1.16).<sup>76</sup> Built up to a decade before the construction of the Sainte-Chapelle, these chapels originally carried pediments rather than gables.<sup>77</sup> The second group of nave chapels at the cathedral, constructed after 1245, is more unified in its architecture, to the point that even the capitals for different responds are now all set at the same level. Corbel fragments at the Musée Carnavalet deriving from the chapels during restoration suggest that they originally had gables.<sup>78</sup> Both transept façades also possess a distinct gable and pinnacle pattern (Figures 1.19 and 1.20). Michael Davis has convincingly argued that the gables of the late thirteenth-century choir chapels of Notre-Dame referenced the pattern at the Sainte-Chapelle (Figure 1.22).<sup>79</sup>

Another feature of the Sainte-Chapelle widely employed in the region of Paris around the 1230s was the portal with foliate embrasures (Figures 1.26 to 1.32).<sup>80</sup> Branner identified possible sources for this arrangement at Rouen

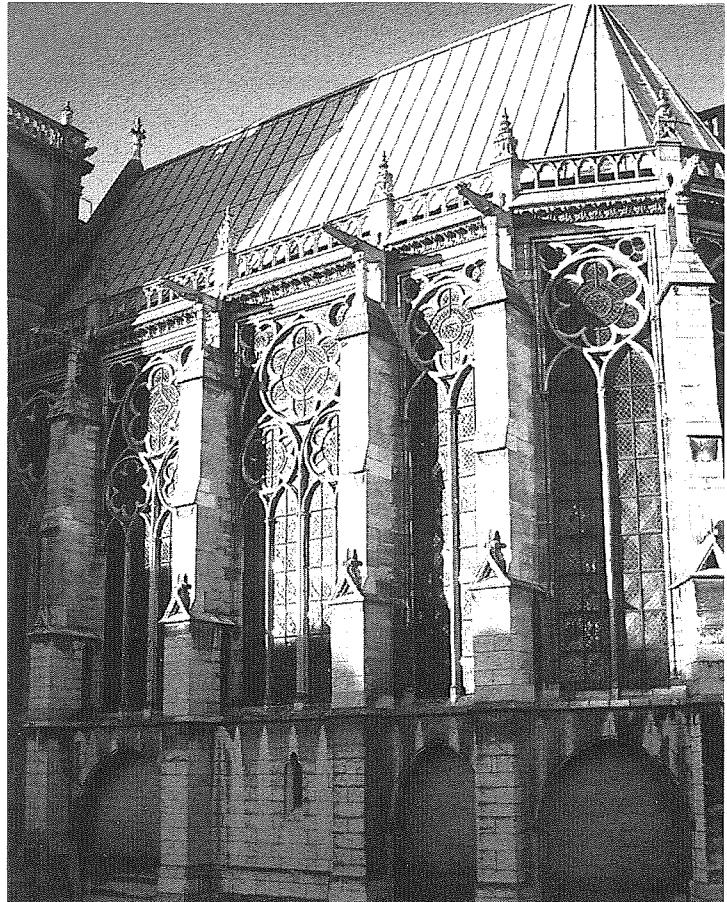
Cathedral, Villeneuve-sur-Verberie, and Saint-Frambourg at Senlis.<sup>81</sup> The north transept portal of Saint-Denis as well as Saint-Germain en Laye preceded the royal chapel in Paris, and the portal type is also seen nearby at Larchant and Gonesse from around 1235 (Figures 1.28 and 1.29).<sup>82</sup> Examples in Paris include the thirteenth-century portal of Saint-Gervais-Saint-Protais, Saint-Pierre aux Boeufs, the refectory of Saint-Martin des Champs, the Lady Chapel of Saint-Germain des Prés, and the Portail Rouge of Notre-Dame. While none can be dated with precision, this portal type was clearly a major trend in the region during and after the 1230s.

If the foliate embrasures of the Sainte-Chapelle were a local phenomenon, the tracery motifs of the royal chapel appeared throughout France after mid-century. Close variations of the nested lancets and rosettes of the nave windows of the upper chapel (Plate II) existed in the nave of Amiens Cathedral (Figure 2.32), at Saint-Denis (Figures 1.23 and 1.24) and Saint-Germain en Laye (Figure 2.33), and in the later phases of the nave chapels of Notre-Dame (Figure 1.22), but with different proportions and sometimes with only pointed rather than trilobe arches. The tracery in the Sainte-Chapelle's apse, three lancets with pointed and cusped arches surmounted by three upright trefoils, is also seen in the radiating chapels of Amiens (Figure 2.34), without the trilobe arches. The chapel of the College of Cluny, founded in 1269, perpetuated the combination but inverted the lower two trefoils and added a lancet (Figure 1.54). Even the unusual spherical triangle with rosette of the lower chapel windows had identifiable sources and successors; a similar version appears first in the façade aisle lights at Amiens (Figure 2.35), and was reproduced after 1254 in the radiating chapels of Westminster Abbey (Figure 2.36).

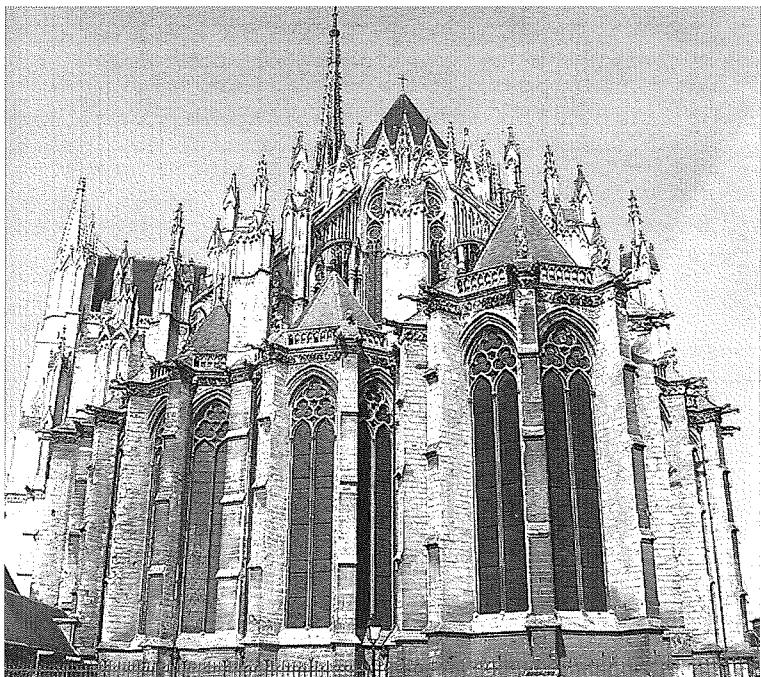
The decorative patterns of the interior of the Sainte-Chapelle are also found throughout the region during this period. The motif of a large arch filled with a tracery quatrefoil over trilobe arches seen in the upper chapel



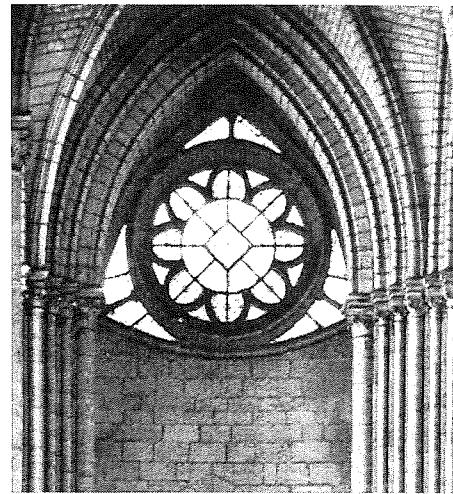
2.32. Amiens, Notre-Dame Cathedral, interior, nave elevation. Photo: Stephen Murray.



2.33. Saint-Germain en Laye, royal chapel, exterior from south. Photo: Author.



2.34. Amiens, Notre-Dame Cathedral, exterior, chevet. Photo: Author.

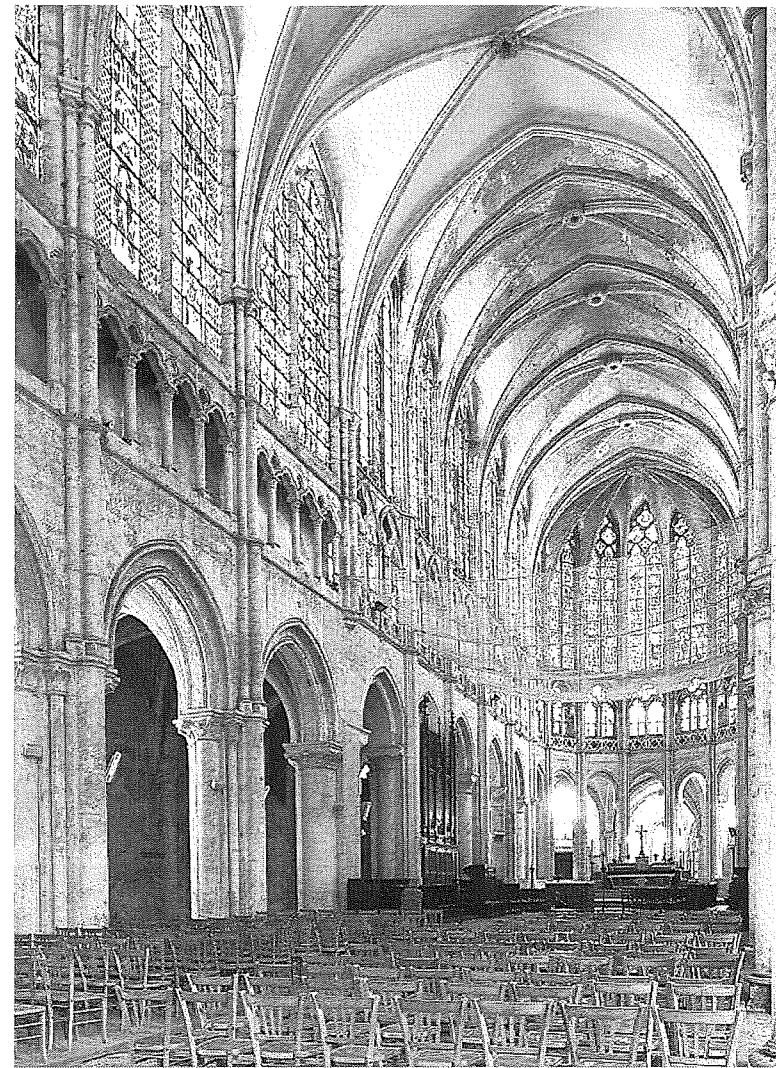


2.35. Amiens, Notre-Dame Cathedral, reverse façade, aisle, detail of spherical triangles. Photo: Stephen Murray.

dado of the Sainte-Chapelle was particularly popular (Plate IX). The arrangement of a simple double arch or lancet surmounted by an oculus has Norman antecedents, for example, at Fécamp, from the late twelfth century, where the motif existed in plate tracery in both the gallery and the clerestory, or just slightly later in the chevet of Saint-Étienne at Caen, from the 1180s, with a quatrefoil or trefoil in the gallery arcade.<sup>83</sup> After the motif's uptake in clerestory windows after Chartres, it proliferated and was extended into triforium arcades, such as at Troyes

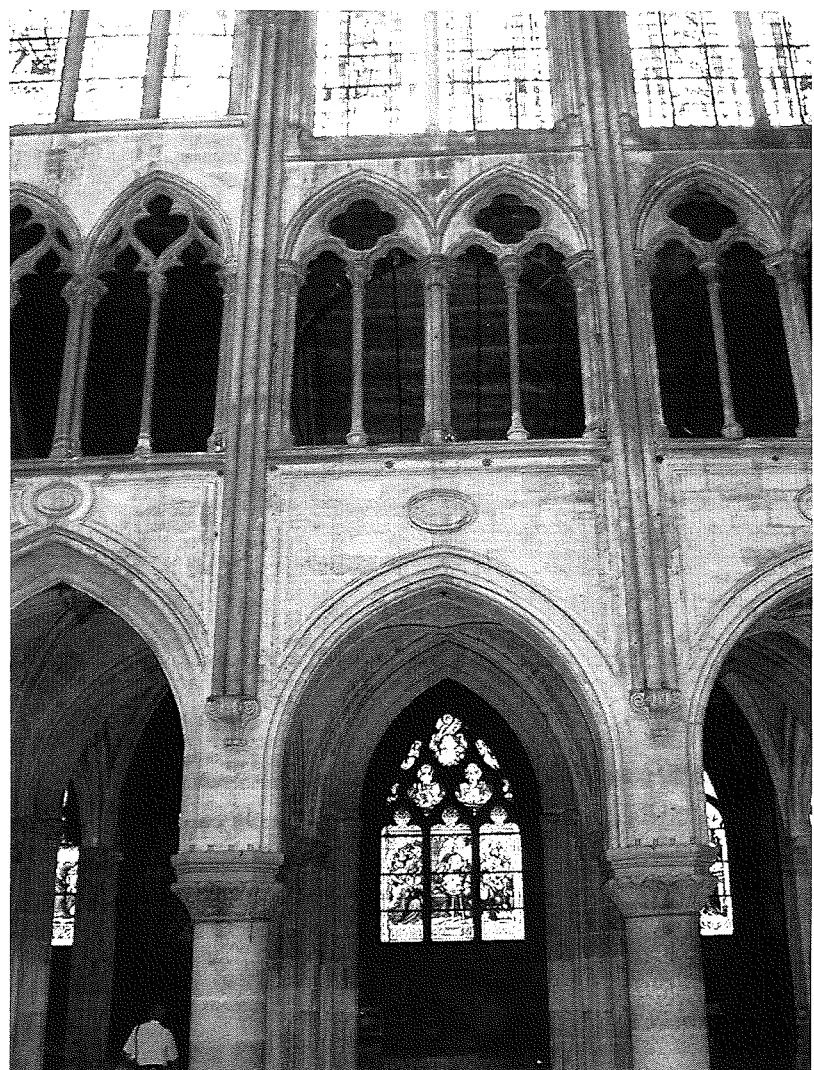


2.36. London, Westminster Abbey, exterior, radiating chapels. Photo: Author.



2.37. Chartres, Saint-Père, interior, nave toward choir. Photo: Stephen Murray © Mapping Gothic France.

(Figure 2.25) and at Saint-Denis (Figures 1.23 and 1.24). In the towers of Notre-Dame the pattern appears with an openwork trefoil in the spandrel (Figure 1.15). The triforium of Brie-Comte-Robert from the first quarter of the thirteenth century preceded in plate tracery the same arrangement in bar tracery at the Sainte-Chapelle; an example with a simple pointed arcade surmounted by a tracery quatrefoil exists in the triforium at Gonesse from around 1230.<sup>84</sup> A version of the motif without the major arch is seen in the western nave of Saint-Père of Chartres, built between 1205 and 1231, and then in expanded form in the fourteenth-century eastern campaign (Figure 2.37). In Paris, the triforium at Saint-Séverin carries the motif with a surrounding arch, although as this part is dated to between 1225 and 1250,



2.38. Paris, Saint-Séverin, interior, nave showing thirteenth-century bays. Photo: Author.

the question remains whether it precedes or postdates the Sainte-Chapelle (Figure 2.38).<sup>85</sup> The transept triforium of the abbey church carries a tracery arcade of pointed arches holding trefoils over trilobe arches with recessed trefoils in the spandrel. The triforium of Clermont-Ferrand offers another example, surmounted by crocketed gables (Figure 2.26). Other types existed at the Cistercian abbey of Royaumont, built from 1228, as well as on the façade of Saint-Nicaise of Reims, built after 1231. More elaborate versions of the pattern, such as that in the cloister of the College of Cluny in Paris, built in the 1270s, were reproduced throughout the latter part of the century (Figure 1.52).



2.39. Amiens, Notre-Dame Cathedral, interior, radiating chapels, dado. Photo: Author.

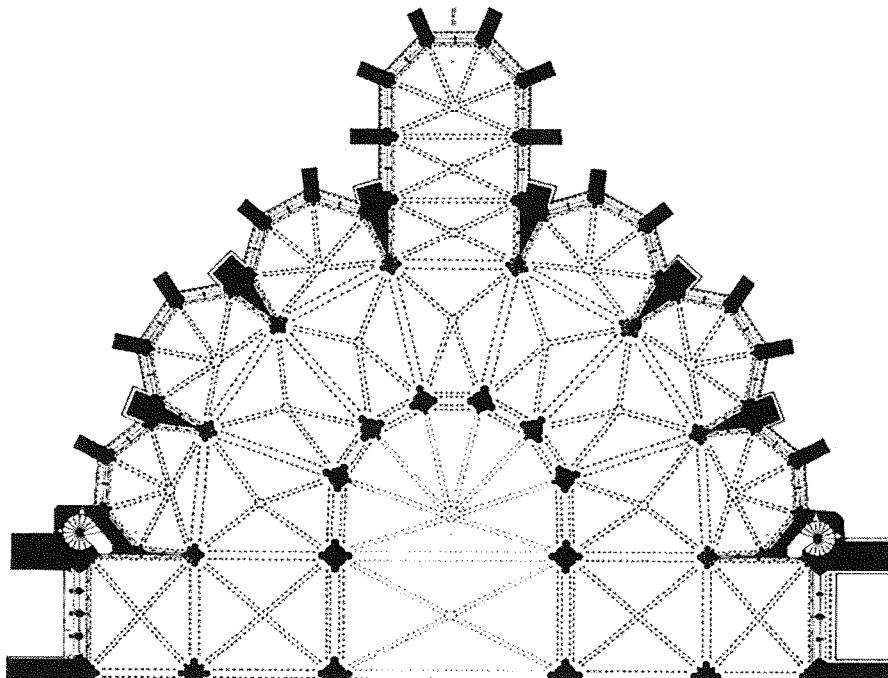
The design of the lower chapel dado (Plate VIII), with pointed and cusped trilobe arches with a trefoil piercing the spandrel, was also prominent. The pattern first appeared in the dado of the radiating chapels at Amiens Cathedral (Figure 2.39), but variations of it were employed throughout Paris, notably in the dado of the Lady Chapel of Saint-Germain des Prés (Figure 1.36), where the spandrels carry responds instead of a blind trefoil. The north nave dado of Strasbourg cathedral carries a similar design. A variant of the design was also repeated in the upper chapel tribune of the Sainte-Chapelle, added after the first phase of construction (Plate XVI).<sup>86</sup>

The decorative motifs of the Sainte-Chapelle are seen throughout Paris and the region both before and after the royal chapel's construction. If the Sainte-Chapelle did not initiate a new approach to architectural structure, it contributed to the proliferation of Rayonnant decorative forms. The adaptability and flexibility of these forms and motifs made this style easily reproducible. If the thirteenth-century design of Saint-Denis and its successors stands at the origin of the French Flamboyant, and later the English Perpendicular styles of architecture, that of the Sainte-Chapelle did not lead to stagnation and torpor; rather, its legacy can be seen in the varied use of decorative motifs throughout Paris, and contributing later beyond the capital into what is known as the Decorated Style in England.<sup>87</sup>

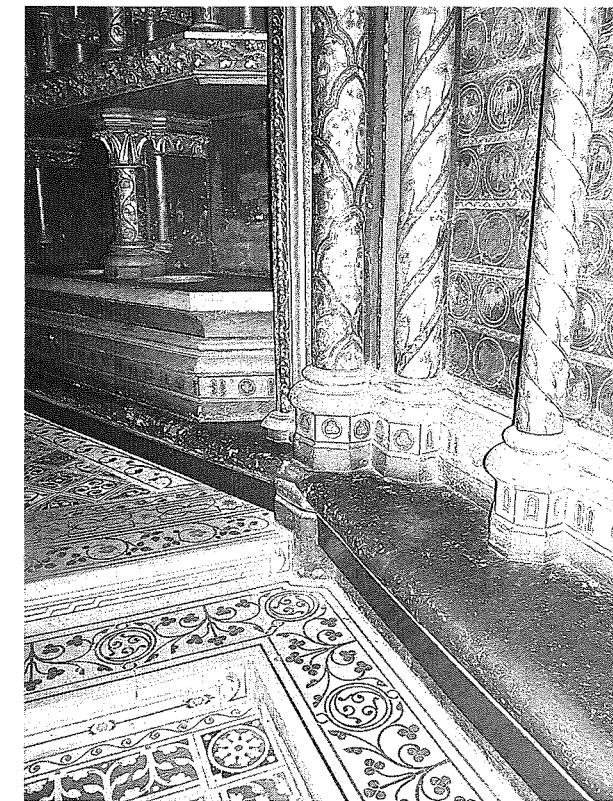
## 2.5 THE SAINTE-CHAPELLE AND AMIENS

Even if many of the features of the Sainte-Chapelle can be identified in contemporary Parisian and regional buildings, an overwhelming number of them point to Amiens Cathedral as their possible source. As discussed here, the lower chapel dado and windows, as well as the upper chapel tracery in the nave and particularly in the hemicycle, are identified in the Picard church. Yet there are still other correspondences. The motif of the trefoil arch surmounted by a quatrefoil in the upper chapel dado at the Sainte-Chapelle can be seen in the tracery decoration of a buttress on the west façade of Amiens.<sup>88</sup> Further, the exterior of the Sainte-Chapelle, with its narrow buttresses with regularly spaced setbacks, also resembles the axial chapel of the cathedral (Figure 2.34). In addition to these widely acknowledged similarities, Jean Bony noted that the distinctive star-shaped abaci in the lower chapel nave exist in the capitals of the upper nave elevation of the cathedral.<sup>89</sup> Finally, Peter Kurmann has identified compelling similarities in the faces of the sculpted angels in upper chapel dado spandrels and the figural sculpture on the west façade of Amiens.<sup>90</sup>

A new association between Amiens and the Sainte-Chapelle may be observed in the plans of both monuments, which manifest the same subtle refinements. In the hemicycle of the axial chapel at Amiens, the number of shafts in the responds has been reduced to correspond to the number of vault ribs they meet (Figure 2.40);



2.40. Amiens, Notre-Dame Cathedral, plan of chevet showing axial chapel. Courtesy of Stephen Murray.



2.41. Paris, Sainte-Chapelle, interior, upper chapel, hemicycle respond, base and socle. Photo: Author.

similarly at the Sainte-Chapelle, the five shafts of the straight bays have been syncopated to three, also corresponding to the number of ribs in the hemicycle (Plate VII). In both structures, the larger main shafts now fall primarily onto the banquette (Figures 2.41 and 2.42) instead of projecting into the floorspace. Only the plinth of the main respond protrudes (and only slightly) at ground level, as if to suggest that the respond shaft goes through the banquette. This reduction and recession of the responds in the apse at Amiens and the Sainte-Chapelle is not seen at other chapels in Paris, although it was reproduced a few decades later in the apse of Saint-Germer de Fly.<sup>91</sup> The plinth arrangement and base profiles are also extremely close there.

The responds of the Sainte-Chapelle and Amiens also operate in similar fashion. In both buildings, the respond shafts provide linear divisions between the bay units, and all but one terminate on the banquette. A single major shaft protrudes into the floor space, while minor shafts are given second place behind it. This was the configuration of the nave responds at Amiens, and it is seen in the responds of the upper chapel straight bays in Paris (Figures 2.43 and 2.44).<sup>92</sup>

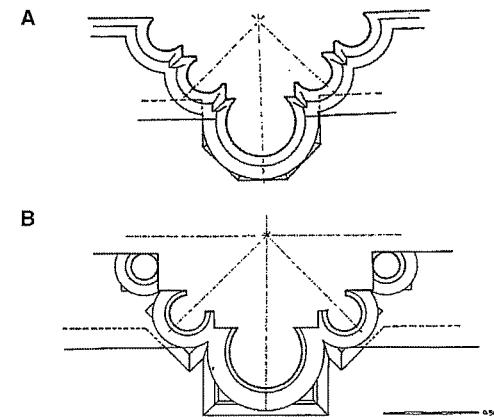
Despite the differences in size between the two buildings, intriguing correspondences exist in certain details involving their dimensions. At the



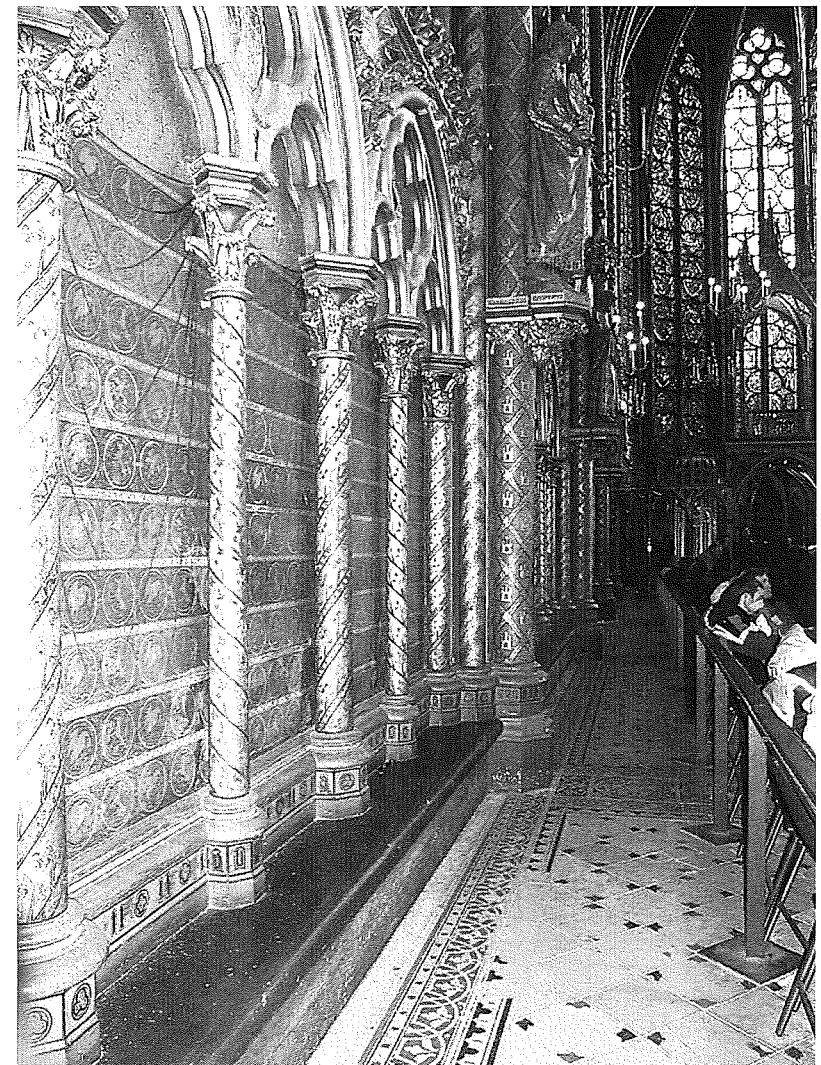
2.42. Amiens, Notre-Dame Cathedral, interior, axial chapel, turning bay, responds. Photo: Author.

Sainte-Chapelle, the lower chapel wall responds exhibit a ratio of 4:2:1 foot. The same ratio exists in the aisle wall responds at Amiens.<sup>93</sup> While it is possible that the process of standardization in the production of ashlar may have lent itself to this combination of numbers, and it is difficult to judge whether any architect would have used a pier of that size and shape for a building of that height, it is tempting to think that the plan of the Sainte-Chapelle might literally have been an adaptation of a model that was the cathedral at Amiens.

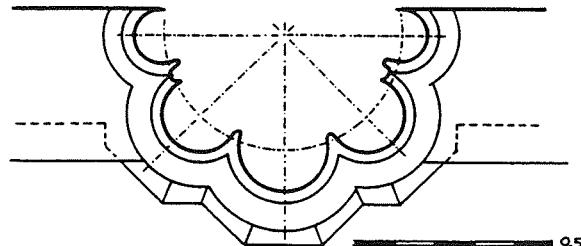
Because of these similarities, the evidence strongly suggests that a master mason from Amiens, or someone extremely familiar with the workshop practices there, also designed the Sainte-Chapelle.<sup>94</sup> The cathedral at Amiens was begun around 1220 and most of the building was complete in a mere twenty years: the nave and west side of the transept up to the aisle vaults, the hemicycle including the radiating chapels, the west façade up to the exterior triforium, and the southern bell tower were all finished early in the 1240s.<sup>95</sup> Because these are all areas that provided sources for the Sainte-Chapelle, in terms of dating alone it is plausible that a master who had been working at the cathedral went to Paris to work on the royal chapel.



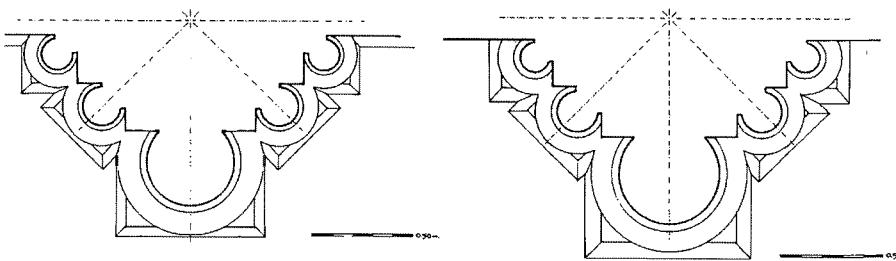
2.43. Sainte-Chapelle nave respond section (a, above) and Amiens nave aisle respond section (b, below, original state). Courtesy of Stephen Murray.



2.44. Paris, Sainte-Chapelle, interior, upper chapel, nave, bay responds. Photo: Author.



2.45. Notre-Dame d'Amiens, axial chapel straight bay, respond section. Courtesy of Stephen Murray.



2.46. Kreutzpfeilers in northern France: nave aisle responds at Longpont (left) and Soissons (right). Courtesy of Stephen Murray.

Which mason of Amiens this was, however, is more difficult to ascertain. Branner proposed that the architect was Thomas de Cormont, the second master at Amiens, who he believed completed the eastern end and the radiating chapels of the cathedral.<sup>96</sup> Kimpel and Suckale assigned authorship of the royal chapel to the first master of Amiens, Robert de Luzarches, who they believed completed that same radiating chapel at the cathedral before going to the royal capital in 1241.<sup>97</sup> More recently, however, Murray showed that the responds of the straight bays of the axial chapel at Amiens, which have evenly sized shafts splayed around a round core (Figure 2.45), do not match those at the royal chapel in Paris, which have a large central shaft separated from smaller shafts by a dosseret forming a cross-shaped core and a triangular profile overall (Figure 2.43a above). If the respond section is a telltale sign of the master mason, then the mason who designed the responds at the intersection of the radiating chapels at the cathedral was indeed a different person from the one who designed the Parisian building.<sup>98</sup> However, as mentioned earlier, the nave responds of Amiens are similar to those of the Parisian building (Figure 2.43b). This type of respond is common in eastern Picardy and the Soissonnais, and seen at Laon Cathedral, Saint-Yved at Braine, Soissons Cathedral, the collegiate church of Saint-Quentin, and the Cistercian abbey church of Longpont (Figure 2.46).<sup>99</sup>

The responds in the nave of Amiens were either not designed by the same master as the one who completed those for the axial chapel or they

were simply differentiated according to their diverse locations. According to Murray's chronology, the first architect in charge of the nave of Amiens was Robert de Luzarches.<sup>100</sup> He purportedly established the entire ground plan for the cathedral and oversaw the construction of the nave to the triforium and outer aisles, including their vaults. During the 1230s, the nave vaults, choir aisles, hemicycle, and radiating chapels were completed. The articulation of these parts, notably the new dado in the radiating chapels and the use of a beaked capital (*chapiteau à bec*) at the springing of the vaults, differs from that of the earlier sections completed at the cathedral. At this junction Thomas de Cormont took over, although the reasons for and the author of these changes are hotly disputed, particularly because it is probable that Robert de Luzarches and Thomas de Cormont worked closely together from the beginning, at least until this stylistic transition. If the two masters did share new ideas and techniques, which is entirely possible, particularly given that architectural forms were often borrowed, adapted, and exchanged during this period, then Kimpel and Suckale's thesis concerning the Sainte-Chapelle appears a real possibility: Robert de Luzarches was called to Paris where he employed responds similar to those in the nave of Amiens and adapted ideas developed in the radiating chapels at Amiens.<sup>101</sup> This seems all the more plausible given that the articulation at the Sainte-Chapelle is more rounded and full, which might be explained as the work of an older master.

However, any emphasis on one or another name and the concomitant association of it with a strict stylistic repertoire remains highly problematic. Master masons belonged to a workshop that produced architecture through teamwork. It seems unlikely that each form and shape was branded or used exclusively by the hand of a single master mason. It is entirely possible that one master advised on the design, perhaps in communication with another who executed the Sainte-Chapelle, for the similarities in Paris point to both masters.

Similarly, any attempt to explain the significance of the visual association with Amiens, as opposed to a Parisian building or a different cathedral, for example, tends too much toward speculation. While it is true that the city of Amiens, with its prosperous markets and peaceful inhabitants, could be described as a "good" royal city in contrast to those where riots took place (such as Chartres or Reims), or those with difficult bishops (such as Beauvais), the choice of a master mason probably had more to do with the cathedral's craftsmanship and the architect's vision for the chapel in Paris.

That the Sainte-Chapelle brought the architecture of Amiens to Paris indicates that France was becoming increasingly centralized in the capital city. Architects, masons, and sculptors went to and from different building sites; they were not necessarily attached to a single city or location.<sup>102</sup> Indeed, in addition to the Amienois qualities at the Sainte-Chapelle, some

of the sculpture at the royal chapel correlates stylistically with that at Reims Cathedral. If more lithic evidence from Saint-Nicaise existed, it is possible that stronger connections would be found there as well. Workshops and/or individual workers traveled from one place to the next, and the centrality of Paris was an effect of the urban demographics as well as the economic and architectural boom in the city. The Sainte-Chapelle may have exhibited forms associated with parts of one or another cathedral, but as it was located in the center of the thriving new cosmopolitan city where the Rayonnant style became distinct, it was thoroughly Parisian.

**W**ith only minor alterations effected on the structure over the centuries (including the extensive restoration it sustained from 1836 to about 1870), the Sainte-Chapelle thus offers rare insight into the creative dynamics of thirteenth-century architecture in Paris. Having ethereal open expanses, rich ornament, and *trompe l'oeil* qualities, the chapel's architecture both conformed to and reaffirmed certain practices. Yet it was not a passive or inert continuation of the less novel aspects of this trend, as it is so often described, but rather a significant contributor to it. At the Sainte-Chapelle, the cage-like structure associated with the modernist tendencies at Saint-Denis and the Lady Chapel of Saint-Germain des Prés was rejected in favor of an ornamental aesthetic that appealed to the multisensory requirements of medieval artistic experience. These two architectural directions developed in Paris are seen most markedly a generation later in England, where, upon combining with indigenous trends, the Decorative and Perpendicular Styles developed. Above all, however, the Sainte-Chapelle affirmed an alternative direction for thirteenth-century architecture in France by showcasing easily reproducible forms that could be used in the most simple to the most elaborate of structures. The perpetuation of the chapel's forms, in part or in whole, in other buildings attests to the emergence of the Sainte-Chapelle as an architectural prototype.

At the same time, beyond questions related to the practice of Gothic architecture, the Sainte-Chapelle constituted a significant, new orientation in royal architectural patronage. The unabashed proliferation of ornament at the chapel redefined the royal image as constructed in the architecture of Philip Augustus. The specific characteristics, implications, and historical justification for this change are discussed over the course of the next two chapters.

## THE ARCHITECTURE OF SACRAL KINGSHIP

**A**s the last chapter demonstrated, examination of the Sainte-Chapelle in terms of style places the building squarely within the milieu of thirteenth-century Paris, which increasingly centralized architectural trends in France. In this chapter, analysis of the chapel's typology reveals that the forms selected for it also derived from important near and distant sources. This endeavor reveals that the Sainte-Chapelle was a sophisticated, highly planned building whose design conveyed complex and powerful meanings to a diverse audience.

The question of how artworks possess and project meaning has been a primary subject in art history since the discipline's inception.<sup>1</sup> Richard Krautheimer's 1942 article "Introduction to an 'Iconography of Architecture'" still exists as the fundamental, if not unproblematic, source for interpretations of meaning in medieval architecture.<sup>2</sup> His most compelling concept remains that architectural "quotations" or "copies," elements of later buildings that recall earlier buildings, embody the ideological content, or meaning, of their models. Thus a five-aisled basilica such as Notre-Dame in Paris recalls the power and prestige of Old Saint Peter's in Rome in its plan, if not in its elevation. Krautheimer maintained that such architectural references could be imprecise, multiple, and even contradictory, but he also cautioned against overinterpretation, which became a problem in subsequent publications that developed his method.<sup>3</sup>

Indeed, despite its age, Krautheimer's theory still inspires analysis and provokes criticism. For example, what constitutes a copy can be overly vague, and the question of intentional copying as opposed to habitual use of an architectural type has not been thoroughly debated.<sup>4</sup> Additionally, insofar as architectural quotations or copies are based on established precedents of centuries past, and that meaning arises from the recollection of the past, this interpretive model prioritizes historical or diachronic relationships over synchronic relationships between buildings.