

PART IV: INTERNATIONALISM AND REGIONALISM IN LATE GOTHIC SPIRE DESIGN

Chapter 9:

The International Reception of Germanic Spire Building

The construction of elaborate stone spires in the German Empire provoked a variety of competitive responses throughout Europe. Generally great spires of the type discussed in this book had their greatest impact in areas where the Rayonnant style had made significant inroads. Thus England and Italy remained largely uninfluenced by the great spires of Germany, while France witnessed a full-blown rebirth of spire design after the Hundred Years War, in what should perhaps be seen as a nativist reaction to the German achievement. In Spain, Germanic prototypes were copied at the Castilian cathedrals of Burgos, Toledo, and León, the same three buildings that had been most influenced by French Gothic in the thirteenth century. Although spires never achieved widespread popularity in Spain, these projects provide valuable insight into the transmission and assimilation of architectural knowledge in the Middle Ages. In Brabant, meanwhile, great towers and spires achieved a relative prominence even greater than they had in Germany.

Brabant

In the middle of the fifteenth century, the duchy of Brabant began to emerge as a major power in Late Gothic architecture, thanks largely to tower projects such as those of Mechelen and Antwerp. In conception, these towers drew on influences from the great spires of Germany and from a vigorous tradition of civic belfry construction indigenous to the Low Countries. This fruitful hybridization gathered momentum only in the later fifteenth century, for reasons that have much to do with geography.

Brabant lies to the southeast of present-day Belgium, bordered on the east by Germany, and on the southeast by Luxembourg. To the southwest lie the Francophone regions of Hainault and Artois. Working from the west towards the north, Flanders, Zeeland, and Holland occupy the coast. The duchy of Brabant did not participate strongly in the economic flowering that brought wealth to the Flemish cities of Ghent, Ypres, and Bruges in the twelfth and thirteenth centuries. The great spires of Brabant developed later, as a slow-rolling wave of prosperity passed from the coast into a region more directly acquainted with the architecture of the German Empire. Although the great spires of Brabant depend on Germanic

precedents, their role as urban monuments deserves to be understood in the specific context of the Low Countries, where direct civic patronage produced a flourishing tradition of secular architecture.

The great power of city governments in the Low Countries generally depended on the relatively limited influence of larger structures of secular government and of the institutional church. Urban culture therefore grew largely uninfluenced by great ecclesiastical magnates like the archbishops of Cologne and Reims. Situated between the French and German cultural spheres, but connected to England and Italy by trade, the Low Countries escaped profound assimilation into the governmental structures of these powers. Admittedly, the counties and duchies of the region were swallowed eventually by Burgundy and then by the Empire, but this did little to diminish the autonomy of the city-states, whose mercantile culture had evolved since the twelfth century.¹

Architectural patronage in the Low Countries emerged along unique lines in this environment of civic mercantilism. Flemish cities such as Ghent, Bruges, and Ypres had been among the richest in Europe since the thirteenth century, but this wealth was not channeled into elaborate church-building projects as it had been in France and Germany. As Christopher Wilson notes, "The absence of bishops' sees other than Tournai in the extreme south may have deprived Flanders of the most obvious kind of leadership in church architecture, but this cannot be the whole explanation for the low status of the genre within Flemish mercantile culture."² As the great flowering of painting and sculpture in the region in the decades around and after 1400 demonstrates, artists and patrons in the Low Countries were by no means provincial or unsophisticated in their tastes. The construction of great churches, though, depends on the unification of resources in a class or institution intent on advertising its status through a religious monument. In Flanders, the city governments tended to support the construction of secular structures such as city halls and belfries, while individuals from the upper classes and the circle of the Burgundian court invested in portable property like sculptures and paintings, which, not coincidentally, could be exported along the trade routes that had made the cities wealthy in the first place.

In terms of both geography and patronage, Brabant lay between Flanders and Germany. Church buildings retained more relative primacy than in Flanders, but they existed in a competitive dialog with city halls and civic

¹ Fischer and Timmers, *Spätgotik*, 69.

² Wilson, *Gothic Cathedral*, 237. The same general point is made in the introduction to *Nord et Est: Belgique, Luxembourg, Suisse*, vol. 5 of *Histoire générale des églises de France* (Paris, 1971), 2.



9-1 Ypres, cloth hall.

monuments, and city councils rather than ecclesiastics often controlled the purse-strings. Brabant developed the most impressive tradition of church architecture in the Low Countries not because of the strength of the church as an institution--there were, after all, no cathedrals in Brabant in the Middle Ages--but because of the influence of religious architecture in neighboring regions. Initially, the impetus came from French Rayonnant architecture, but the Brabant Florid style of the late fifteenth century took the work of the Parlers and Ensingers as its point of departure. The popularity of colossal towers in Brabantine Gothic, meanwhile, needs to be

seen against the background of major secular and religious monuments in other areas of the Low Countries.

Belfries enjoyed a particularly important position in the architecture of the Low Countries because of their role in civic self-definition. Town charters were often kept in towering belfries, whose bells were used to call the hours of the day, and to signal the major events of urban life, such as market openings and religious processions.³ In addition to housing the municipal bells and safeguarding the civic charter, belfries were used as observation posts for the city watch. The earliest belfries were freestanding structures, but later specimens "could rise over a gateway or be attached to a variety of structures, commercial, civic, or ecclesiastical."⁴ Whatever the building to which it was attached, the belfry formed an important focus for urban life.

By the thirteenth century belfries attached to mercantile halls had grown into large and impressive structures. In the cloth hall of Ypres, begun around 1250, a belfry tower seventy meters high punctuates the expanse of the main facade (fig. 9-1). An even more imposing belfry dominates Bruges with its octagonal crown, added in the late fifteenth century to the

³ See Walle, *Gothic Art in Belgium*, 46.

⁴ Swaan, *Art and Architecture*, 121.



9-2 Bruges, market hall.



9-3 Ghent, civic belfry and church of Saint Bavo.

earlier tower and market hall beneath (fig. 9-2).⁵ The whole structure vaguely recalls such Tuscan monuments as the Palazzo Pubblico in Siena, testimony to the close mercantile connections between the two regions.⁶ Communal belfries of this general type were constructed in many Flemish cities in the later Middle Ages, including Dendermonde, Kortrijk, Aalst, and Ghent. Ghent's impressive civic belfry, which now stands free, was constructed between roughly 1300 and 1376 (fig. 9-3).⁷

The construction of church towers and spires proceeded alongside belfry construction in thirteenth- and fourteenth-century Flanders. The church of Notre-Dame in Damme, begun by 1220, features a simple brick western tower, which now stands forty-three meters high, but which formerly carried a tall spire. In Bruges, a large spired tower was built between 1270 and 1297 beside the north flank of the church of Notre-Dame (fig. 9-4).

⁵ The lower part of the belfry was completed in 1296, the upper in 1482. See Walle, *Gothic Art in Belgium*, 48.

⁶ Swaan also makes this general point (*Art and Architecture*, 121).

⁷ Walle, *Gothic Art in Belgium*, 48.



9-4 Bruges, Notre-Dame.

With its height of 122 meters, it only narrowly misses the record for brick tower height now held by St. Martin in Landshut.⁸ The spire of Notre-Dame hardly qualifies as a great spire, with its simple octagonal spire cone placed unceremoniously atop a square tower, but its height established a standard that later spires in Brabant were intended to surpass. Similar spires were eventually erected at Notre-Dame in Huy, St-Bavo in Ghent and numerous smaller churches throughout the Netherlands.⁹ Another precedent for the Brabantine projects was the great west tower of Utrecht's Domkerk, an ambitious monument erected between 1321 and 1382 (fig. 9-5). The lacy octagonal superstructure of the Utrecht tower has more in common with Freiburg and other Rayonnant tower designs than with the spartan native architecture of Holland. The designer's name, Jan van Henegouwen (Hainault) may go

some way to explaining this unusual importation of southern forms.¹⁰ The tower of the Domkerk was not a municipal belfry, however. As in Cologne or Prague, the cathedral represented the power of the bishop, rather than the citizens. The tower of the Domkerk thus differed from the later great spire projects of Brabant, which typically represented both civic and ecclesiastical interests.

⁸ Marjan Buyle et al., *Architecture gothique en Belgique* (Brussels, 1997), 61-63.

⁹ The stone spire of Huy, begun in the 14th century, reached a height of 102 meters, but it collapsed in 1803. The western tower of St-Bavo in Ghent, constructed between 1462 and 1534, today reaches a height of 89 meters, even without the spire that once crowned it. See Buyle, *Architecture gothique*, 67, 90.

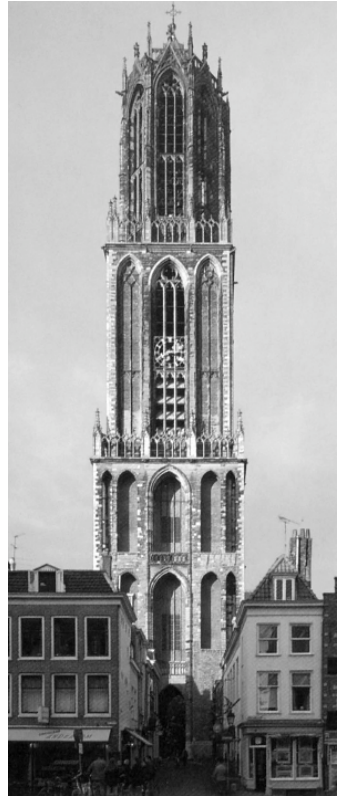
¹⁰ Swaan, *Art and Architecture*, 128.

As belfry and church towers grew in scale in the great mercantile cities of the Low Countries, city halls emerged as major monuments in their own right. The first of the new type was erected in Bruges between 1377 and 1387, on a square near the market hall and its belfry. Its simple boxlike form was relieved by luxurious texturing of the wall surface with tracery and statue niches, and the overall silhouette was enlivened with three large turrets. This building served as the model for the later Brabantine city halls of Brussels and Leuven. In Brussels, the city hall begun in 1402 by Jacob van Tienen fronted on the market square itself, incorporating the stump of a fourteenth-century communal belfry. It thus unified the functions of city hall and belfry expressed in Bruges in separate buildings.

The first major openwork spire project in the Low Countries involved an addition to the Brussels City Hall belfry. This elegant ninety-meter-high structure, constructed between 1449 and 1455, still dominates the skyline of downtown

Brussels (fig. 9-6). Its designer, Jan van Ruysbroek, cleverly solved the square-to-octagon transition problem by rotating the octagon through 22.5 degrees, so that its corners line up with the middle mullion of the double bay beneath. Both the geometry and the openwork design of this spire would go on to influence future Brabantine church tower projects. By 1453, meanwhile, van Ruysbroek had added a smaller openwork spire to the church of St-Gertrude in Leuven. Van Ruysbroek's work exemplified the growing ambition of Brabantine fifteenth-century spire builders, who were not satisfied with the simple forms typically seen in Flemish tower design.

Brabantine builders were prepared to embrace the openwork spire concept and other advanced architectural ideas from the German Empire in part because they had previously embraced the complexity and linearity of the



9-5 Utrecht, tower of Domkerk.



9-6 Brussels City Hall.

French Rayonnant style. In the early thirteenth century, already, the parish church of St-Gudule in Brussels had been begun along ambitious lines, in a manner that had far more in common with French cathedral architecture than it did with the relatively simple church architecture of Flanders. The early fourteenth century, moreover, witnessed the initiation of several major French-inspired building projects in the region, most notably the reconstruction of the choir of St-Rombout's church in Mechelen, which was undertaken by the Picard Jean d'Oisy after a major fire in 1342.¹¹ With its paneled wall surfaces, its brittle linearity, and its seamless linkage of the vault ribs with the wall responds, the Mechelen choir introduced a format

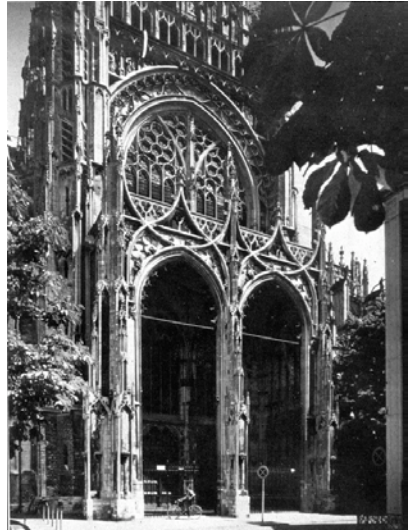
that would enjoy popularity in the region for centuries. Among its most important sequels were the choirs of Notre-Dame in Antwerp, the Janskerk in 's-Hertogenbosch, the Pieterskerk in Leuven, and St-Waudru in Mons. These, not coincidentally, were all buildings that played crucial roles in the later history of Brabantine Gothic tower and spire design. Colossal tower projects were begun in the fifteenth century at Mechelen, Antwerp, Leuven, and Mons; 's-Hertogenbosch, meanwhile, was the site for the first major intrusion of Parlerian and Ensinger motifs into the Low Countries.

The south transept facade of the Janskerk at 's-Hertogenbosch, constructed in middle decades of the fifteenth century, must have been designed by someone intimately familiar with the work of Ulrich von Ensingen and his Parlerian sources (fig. 9-7).¹² The interlaced arches on the transept porch, for example, recall those crowning Ulrich's tower at Strasbourg, and the overall form of the porch recalls Ulrich's tower porch at Ulm.

¹¹ Other French builders working in the region include Pierre de Savoy, active at Diest from 1321, and Jacques Piccard, active at Aarschot from 1337. See Buyle, *Architecture gothique*, 84-85.

¹² Wilson argues persuasively that the conception of the Janskerk's south transept should be dated to the 1430s, rather than to the later 15th century, as had previously been assumed. *Gothic Cathedral*, 242-43.

Significantly, therefore, Ulrich von Ensingen's tower projects appear to have been the crucial monuments whose charisma encouraged builders in the Low Countries to pay attention to the architectural achievements of the German world. It is interesting, moreover, that Ulrich von Ensingen's post-Parlerian architectural vocabulary was seen in 's-Hertogenbosch as an appropriate complement to the Brabantine Rayonnant articulation of the Janskerk's choir, which had been designed in the 1370s.¹³ This complementarity arose naturally, because Peter Parler and Ulrich von Ensingen, like Jean d'Oisy in Mechelen and his followers in 's-Hertogenbosch, were all engaging



9-7 's-Hertogenbosch, Janskerk, south porch.

more or less directly with the legacy of French Rayonnant design. All were working, in other words, in a tradition that favored complex and highly linearized forms, the tradition that had produced both the openwork spire form and, later, the elaborate buttressing pyramids of Germanic micro-architecture. The pattern of artistic reception at 's-Hertogenbosch suggests that Ulrich von Ensingen's spire projects were recognized in the middle of the fifteenth century as some of the most impressive manifestations of this tradition.

In the later half of the fifteenth century, Brabantine builders drawing on Ulrich von Ensingen's rich treasury of forms and motifs went on to develop their own complex Late Gothic manner, which Christopher Wilson has aptly dubbed the Brabantine Florid style.¹⁴ The most prominent exponents of this Florid style were members of the Keldermans family, who played a role in the Low Countries somewhat analogous to that of the Parlers in Germany a century earlier.¹⁵ The Keldermanses appear to have

¹³ 's-Hertogenbosch lies to the north of Brabant, but the choir of the Janskerk is usually considered to be a specimen of "Brabantine Gothic" because of it so closely resembles churches in Mechelen, Antwerp, and Leuven. See Wilson, *Gothic Cathedral*, 239.

¹⁴ Wilson, *Gothic Cathedral*, 242-43. See also Ethan Matt Kavaler, "Renaissance Gothic in the Netherlands: The Uses of Ornament," *Art Bulletin* 82, no. 2 (June 2000): 226-51.

¹⁵ See H. Janse et al., eds., *Keldermans: Een architectonisch netwerk in de Nederlanden* ('s-Gravenhage, 1987).



9-8 Mechelen, Hollar Plan,
upper section.

invented the Florid style while engaged with the design of their first great work, the colossal western tower of St-Rombout's church in Mechelen. The articulation of this tower was based on the serialization, miniaturization, and elaboration of the interlacing arch motifs inherited from the work of the Parlers and Ensingers. These forms appear even more prominently in the elaborate Florid-style termination schemes that the Keldermans clan developed for the Mechelen tower, of which one version was carefully recorded in the seventeenth century by Wenceslas Hollar (fig. 9-8).

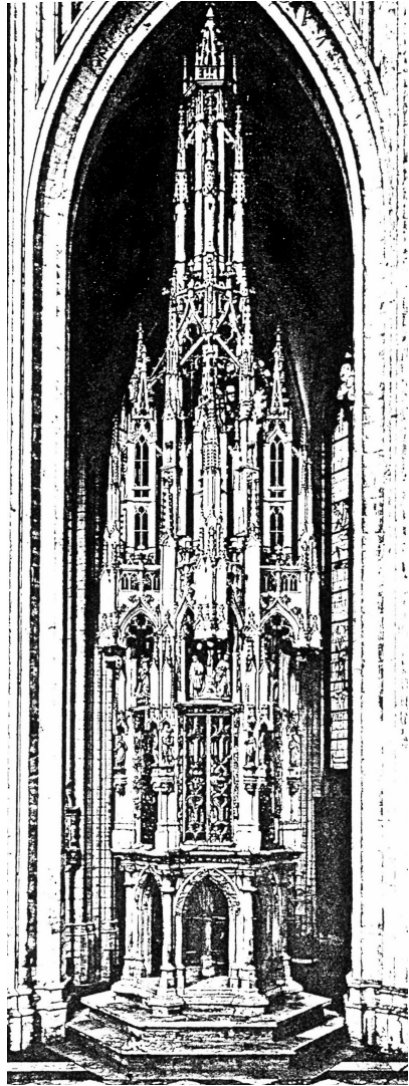
In many respects, the Brabantine tower projects at Mechelen, Zierickzee, Antwerp, and Leuven were the most ambitious sequels to the great spire projects of the German empire. The intended scale of these structures was even larger than that of their Germanic antecedents, both in absolute terms and relative to their host buildings. To an even greater extent than most German spires, moreover, these colossi would have resembled microarchitectural shrines. The Keldermanses planned, for example, to give the Mechelen tower termination a star-shaped plan similar to that of the elegant sacrament house of the Pieterskerk in Leuven, which had been designed in the 1450s by Mathijs de Layens (fig. 9-9).¹⁶ More obviously, the Mechelen design resembles the sacrament house in that it is essentially a stocky

¹⁶ Timmermann notes in "Staging the Eucharist," 84, that many of the precedents for the Leuven tabernacle may have been lost in the iconoclasm of the 15th century, and that the best evidence for buttressing pyramids in Netherlandish art of the early 15th century comes from paintings and manuscript illuminations; for example, the representation of Adam and Eve beside a spired Fountain of Life on folio 25v. of the *Très Riches Heures* of Jean de Berry (Musée Condé, Chantilly).

buttressing pyramid, rather than a conventional pyramidal spire. In a conventional spire, the process of geometrical transformation typically stops once an octagonal plan form has been achieved. In the Mechelen design, though, as in many late Gothic microarchitectural canopies, the plan keeps changing all the way up to the tip of the structure, while decorative flying buttresses articulate these transitions by linking the corners of successive stories.

Church tower design schemes of unsurpassed ambition were developed in Brabant late in the fifteenth century because of a uniquely favorable intersection of economic, sociological, and architectural circumstances. In Brabant, as in Flanders, the flourishing of urban culture fostered the production of great monuments as emblems of civic pride. By 1450, though, Brabant had displaced Flanders as the wealthiest region in the Low Countries. In Brabant, moreover, church architecture played a relatively more prominent role than it had in Flanders. In particular, the civic bells and watchmen were often installed in church towers rather than in separate civic belfries. Unlike the secular belfries of Flanders, therefore, the great church

towers of Brabant drew extensively on the legacy of medieval church design, as represented both by indigenous traditions and by the brilliant



9-9 Leuven, Pieterskerk, sacrament house.

work of the Parlers and the Ensingers.¹⁷ Enriched by these influences, and fueled by the energies of what were then the richest cities in northern Europe, the Brabantine tower projects became crucibles for the development of the Florid style, the most original contribution of the Low Countries to Gothic architecture. The fusion of civic and religious sentiment embodied in the great spires of Brabant took place in a variety of interesting ways, as the cases of Antwerp, Mechelen, and Leuven reveal.

Antwerp

Of all the elaborate spire projects planned in Late Gothic Brabant, only that of Notre-Dame in Antwerp was actually completed. The success of the Antwerp initiative reflects not only the fact that the spired tower in question was somewhat smaller than those planned for cities such as Mechelen, but also the fact that work on the Antwerp tower began somewhat earlier. The collegiate church of Notre-Dame had taken over the parochial rights for the whole city of Antwerp in 1124, and construction of the present Gothic structure began in 1352.¹⁸ Its choir, the first part to be built, recalls that of St-Gudule in Brussels, with its original five radiating chapels. The name of the original architect in Antwerp has not survived, but by the end of the fourteenth century the Antwerp workshop was being led by Jacob van Tienen, a follower of Jean d'Oisy who simultaneously oversaw the ongoing work at St-Gudule and at the Brussels city hall. The example of St-Gudule probably guided the Antwerp builders not only in their choice of choir layout, but also in their decision to equip their church with an impressive twin-towered west facade. Work on the northern and southern tower foundations began in 1420 and 1430, respectively, before construction of the nave proper had even started. The great western towers of Mechelen and Zierickzee, by contrast, would not be begun until the 1450s.

Antwerp's church of Notre-Dame grew rapidly in the fifteenth century thanks to active financial contributions from the local citizenry, guilds, and the city government itself, in addition to the support the project received from the church's own collegiate chapter.¹⁹ In 1406, already, the city

¹⁷ As a Belgian specialist, Walle understands this distinction typologically rather than in terms of international influence: "A secular belfry is different to a church tower in several respects. Firstly it generally has no buttresses. . . . The outline of a belfry is usually more elegant than that of a church tower, the latter often seeming to be crushed by its buttresses" (*Gothic Art in Belgium*, 47).

¹⁸ See W[illelm] Aerts, ed., *The Cathedral of Our Lady in Antwerp* (Antwerp, 1993), esp. "The Period 1124-1559," by Jos van den Nieuwenhuizen, 25-39; and "The History of Construction," by Linda van Langendonck, 107-25.

¹⁹ The financing of the project has been carefully studied by W. H. Vroom in *De Onze-Lieve-Vrouwekerk te Antwerpen: De financiering van de bouw tot de beeldenstorm*

magistrates had given up their allowance of winter clothing to help fund the completion of the choir.²⁰ Jacob van Tienen's successors Peeter Appelmans and Jean Tac, who served from 1419 to 1434 and from 1434 to 1439 respectively, were known as masons and master builders of the city. In 1455, as work on the church's enormously wide seven-aisle nave began, the city government levied a special tax on wheat to help finance the construction of the western tower block. By 1474, upon the death of Jean Tac's long-lived successor Everaert Spoorwater, the nave aisles were largely complete, the south tower stood to its present height, and the north story stood one story higher, up to the top of its square-planned section. That uppermost square story of the north tower, crucially, included the Antwerp's civic belfry, whose installation had been a high priority for the city government. Once that goal had been achieved, work on the tower lapsed for over two decades while the main vessels of the nave and transept were completed.²¹ The campaign to erect the complex termination of the north tower therefore began only in 1502.²²

By the first years of the sixteenth century, tower design in Brabant had progressed far beyond where it had been in the days of Jacob van Tienen, Peeter Appelmans, and the other initiators of the Antwerp facade project. The openwork spires of Jan van Ruysbroek, the invention of the Florid style by the Keldermans clan, and the establishment of colossal tower projects in cities such as Mechelen had all substantially advanced the state of the art. Herman de Wagemakere, who headed the Antwerp workshop between 1474 and 1502, took these developments into account when he developed his design for the north tower (figs. I-6 and 9-10). Like van Ruysbroek at the Brussels City Hall, he chose to rotate the tall octagonal story of his tower by 22.5 degrees, so that four of its corner flanges would line up with the buttress strips in the middle of the tower faces completed by Spoorwater, each of which was two bays wide. From the corners of the square tower story below, meanwhile, Herman de Wagemakere launched four slender pinnacles, which rise alongside the octagonal tower core before connecting to it with delicate decorative flying buttresses. Because this format ensures the alignment of verticals, both visually and structurally, it provides a somewhat more elegant solution to the problem of double-bay tower articulation than the traditional format seen at Cologne, which

(Antwerp, 1983), esp. 27-109. Vroom's detailed findings are briefly synopsized in Buyle, *Architecture Gothique*, 97. Langendonck, "History of Construction," 107, notes that municipal taxes were targeted particularly to construction of the north tower.

²⁰ Langendonck, "History of Construction," 108.

²¹ Langendonck, "History of Construction," 111.

²² For notes on an aborted 1501 project, see Langendonck, "History of Construction," 111.



9-10 Antwerp, Notre-Dame, tower.

involves a more dramatic visual disjunction as the window number on each tower face drops from two to one. The division between the square and octagonal stories remains sharply delineated at Antwerp, though, because of the prominent balustrade wrapping around the tower at this point. Such tower balustrades, which were far more prominent in Brabant than in Germany, framed the walkways used by the city watchmen. A second balustrade marks the upper margin of the octagonal tower story, whose overall geometry remains crisply defined.

In the uppermost section of the Antwerp tower termination, the geometry and the formal vocabulary both become far more elaborate. Eight major masonry uprights rise from the octagonal tower platform, but they do not form a regular octagonal array. Instead, the four shorter ones carry elaborately cusped flying buttresses pairs, which connect with the four corner flanges of the slender tower core formed by the four taller uprights. The plan of this core, therefore, is a small square rotated at 45 degrees

with respect to the main square of the tower base. The walls of this tower core are transparent mullion screens through which may be seen a central openwork staircase rising along the tower axis. This staircase rises above the tower core, where it is intersected by four single flying buttresses launched from the pinnacles growing out of the corner flanges of the tower core. The staircase emerges above four pairs of intersecting scissor arches, the descendants of those seen in the Strasbourg tower and the 's-Hertogenbosch porch. The staircase then rises to support two successively

smaller octagonal crowns of pinnacles beneath a stone knob, which in its turn carries the structure's final component, a metal cross. With its sophisticated formal sequencing, this tower termination presents a plan geometry nearly as complex as that of the most elaborate micro-architectural tabernacles. This remarkable structure, the only Florid Gothic tower termination actually completed, brings the overall height of the Antwerp tower to 123 meters, making it the tallest Gothic tower in the Low Countries.

Herman de Waghmakere's son Dominicus oversaw the construction of the Antwerp tower between his father's death in 1502 and the project's completion in 1520. The extent of his responsibility for the final design of the tower termination remains unclear, but he obviously took care to ensure that all of the detailing of the tower termination would be up-to-date, reflecting the latest developments in the Florid style. It may be significant in this context that Dominicus collaborated frequently with Rombout II Keldermans, one of the designers most closely associated with the Mechelen tower project. The most active phase of this collaboration, however, began only in 1518, when Rombout II moved from Mechelen to Antwerp.²³ By that time, the Antwerp tower was effectively complete. Herman and Dominicus de Waghmakere must have gained familiarity with the Florid style work of the Keldermans clan long before Dominicus and Rombout II joined forces.²⁴

The completion of Notre-Dame's north tower gave a spectacular focus to the skyline of a city that was rapidly becoming one of the wealthiest in Europe. By that time, seven new parishes had been established in the city alongside that of Notre-Dame, and the Waghmakers had begun the construction of a large axial tower for the parish church of St-Jacques. The intersection of social and artistic forces favorable to the construction of great Gothic church towers was soon disrupted, however, even in wealthy urban centers like Antwerp. As in Flanders previously, civic and mercantile buildings came to have at least as much prestige as church projects. Dominicus de Waghmakere and Rombout II Keldermans, for example, developed an elaborate Florid style designs for the city hall of Ghent, in addition to working independently on a wide variety of other secular projects.²⁵

²³ Langendonck, "History of Construction," 116-17.

²⁴ In 1506, for example, Anthonis Keldermans I inspected the Antwerp tower octagon. See Langendonck, "History of Construction," 116.

²⁵ See Buyle, *Architecture gothique*, 28, 180; and Kavalier, "Renaissance Gothic in the Netherlands."

Within the Notre-Dame workshop itself, meanwhile, programmatic changes were underway that, together with the religious conflicts of the sixteenth century, would leave the era of Gothic tower construction behind. Completion of the church's south tower may have been contemplated until 1521, when Emperor Charles V laid the first stone of an enormous new choir, designed by Dominicus de Wagemakere and Rombout Keldermans, whose construction promised to consume all the resources of the workshop for decades to come. Work proceeded rapidly for several years, before slowing in the years around 1530. After a major fire badly damaged the church in 1533, repair efforts took precedence over new construction.²⁶ By that point, moreover, the climate for church construction in the Low Countries was beginning to become less favorable, as the stresses of the Reformation challenged the established social and religious order in the region. Two Antwerp Augustinians who had embraced Lutheranism had already been burnt alive in Brussels in 1523, and tensions continued to grow in the following decades. In 1559 Antwerp was raised to episcopal rank, and Notre-Dame was promoted to cathedral status, but Protestant resistance to Catholic authority erupted just seven years later in a major outbreak of iconoclasm that heavily damaged the city's churches. Protestant rebellions in the southern Netherlands persisted into the 1580s, with Antwerp returning to Catholic control only in 1585.²⁷ Since the later years of the sixteenth century proved so turbulent, the builders of Antwerp's church of Notre-Dame were fortunate to have finished their great Florid bell tower by 1520. Other ambitious tower-builders in the region, however, were not so fortunate.

Mechelen

Perhaps the most elegant of the colossal Brabantine tower schemes ultimately abandoned in the tumultuous sixteenth century was that of Mechelen, the home city of the Keldermans clan.²⁸ As in Antwerp, construction of the Mechelen tower was promoted by a partnership of ecclesiastical and governmental interests. The history of the project

²⁶ The traces of the new choir suggest some conflict of visions within the Notre-Dame workshop, since the placement of the free-standing piers along simple circular arcs seems completely unrelated to the complex faceted outline of the exterior wall. Both sets of elements have usually been interpreted as parts of Dominicus and Rombout's 1521 plan, but it seems plausible, at least on formal grounds, that the piers may have been planted in the 1530s in accord with one of the three alternative plans that was presented after the fire of 1533. For the choir plan and mention of the 1530s plans, see Langendonck, "History of Construction," 112-13.

²⁷ Leon Voet, "Antwerp in an Ecclesiastical Context," in Aerts, *Cathedral of Our Lady*, 18-19.

²⁸ The crucial modern study of the Mechelen tower is Linda van Langendonck's 1984 dissertation for the Catholic University of Leuven, "De St. Romboutstoren te Mechelen."

therefore reflects both the power and the ultimate limitations of this partnership.

The great tower of Mechelen was the latest major addition to church of Saint Rombout, an institution that traced its roots to the origins of the Christian city. The monastery of St-Rombout was established in 992 on the right bank of the river Dijle, but moved in 1134 to the church's present location within the city, becoming its parish church in the same year.²⁹ This first parish church of St-Rombout was large, with roughly the same 13.5 meter nave span as the present building. During the thirteenth and early fourteenth centuries, a period of dramatic urban growth,³⁰ the church of St-Rombout was updated and improved. First, the nave and transept were rebuilt in the Gothic style. Although the squat proportions and cylindrical piers of the new vessel would have seemed old-fashioned by contemporary French standards, the ambition of the program would have been evident. On the exterior, the building boasted an axial tower and spire, nearly as wide at the base as the present version, although not so tall.³¹ This first Gothicized version of St-Rombout was consecrated in 1312. Following a fire in 1342, the nave was remodeled with higher vaults, and the choir was rebuilt by Jean d'Oisy. His innovative design, which blended indigenous touches with French Rayonnant influences, was copied by many later builders in the region. The Mechelen choir thus stands as a key monument in the phase of Brabantine architectural history when new formal ideas were still being imported from France rather than from the German Empire.

The great tower of St-Rombout's church would eventually become one of the main laboratories for the development and elaboration of the Brabantine Florid style, but this would not have been obvious when the project was undertaken in 1452. The lower stories of the tower are rather sober in style, not yet reflecting the complex Parlerian influences seen in the south transept frontal of 's-Hertogenbosch (fig. 9-11). In its earlier stages, therefore, the Mechelen tower project seems to have been conceived less as a sequel to the work of Ulrich von Ensingen than as a competitive response to other Netherlandish and Brabantine tower projects. The first Mechelen builders may have been particularly inspired by the Domkerk in Utrecht,

²⁹ *Nord et Est*, 88.

³⁰ Pierre Diriken, *Geoguide Mechelen* (Brussels, 1992), 15-16. See also *Nord et Est*, 88.

³¹ The details of this old tower's history are not well known. Langendonck notes its demolition in the later 15th century ("St. Romboutstoren," 59-63), but is silent about its date of construction. *Nord et Est* says that the Gothic church was built on the site of an older church, which was flanked by a western tower and spire (88). Diriken says that construction of the present church began circa 1200, but leaves out discussion of the old tower (*Mechelen*, 30). There were precedents for single large western towers in the 12th century, but the spire mentioned in *Nord et Est* must have dated from the 13th century at the earliest.



9-11 Mechelen, St. Rombout, western tower.

where the massive western tower had been crowned by a skeletal octagonal story in the late fourteenth century, and by the ongoing work at Notre-Dame in Antwerp, where the two-towered facade was rising smoothly in the 1440s. The master builder responsible for the earliest phases of tower planning may well have been Jan II Keldermans, whose descendants would dominate architectural practice in Brabant until the mid-sixteenth century. Jan II worked both as a church designer and as a city architect, building fortification walls and bridges.³² This would have given him the technical background to plan a large-scale project like the rebuilding of the St-Rombout's tower. Although he died in 1445, seven years before the first stone of the tower was laid, his influence on the early history of tower project may have been considerable; the sober style of the tower's lower stories suggests that they could have been designed by Jan II and

executed after his death.

The first master actually involved with the construction of the tower was Walter Coolman, an assistant to Jan II. An early historian of the Mechelen tower has argued that Coolman was a carver rather than a designer, and that he served only as Jan II Keldermans's professional executor during the minority of his sons Andries and Mathis Keldermans. Subsequent authors, however, have credited Coolman with more autonomy in the design of the tower's lower story.³³ Although planning for the St-Rombout's tower may

³² See Langendonck, "St. Romboutstoren," 82-84.

³³ Compare, for example, F. Steurs, *De Toren van Sint-Romboutskerke te Mechelen* (Mechelen, 1877); and G. van Doorlaer, "Y-a-t'il des raisons pour ne pas consider Gauthier

have gotten under way in the 1440s, the project was launched as a practical venture only in 1451, with the granting of a papal indulgence by Nicholas V. A second indulgence was granted by Callixtus III in 1455.³⁴ The faithful in and around Mechelen initially responded to these indulgences with great enthusiasm. Gifts from these pilgrims provided the largest source of revenue for the tower project until 1465, even though much of the money went to the Holy See, with the remainder being divided among Mechelen's seven city churches. Armed with this income, Walter Coolman and his masons began construction of the tower on 22 May 1452. Mechelen's mayor presided at the foundation ceremony.³⁵

The construction sequence of the lower tower stories was strongly affected by the presence of the older tower on the site. Instead of destroying this tower immediately, it was decided to build the walls and buttresses of the new tower around the older structure. This procedure probably permitted economies in scaffolding,³⁶ as well as permitting the city watchman to remain at his post on the tower throughout the early building campaigns. The presence of the old tower was also beneficial from the standpoint of foundation construction, since its weight had pre-compressed the soil under most of the new tower's base. Even so, the great weight of the new tower has caused differential settlement in the western bay of the nave. Like Ulrich von Ensingen at Ulm, the builders of the Mechelen tower underestimated the support requirements of their colossal tower.³⁷

The Mechelen tower differs in several respects from comparable German axial towers. It is even larger relative to the church, so that the tower and its buttresses extend to the full width of the aisles. The aisles therefore do not act as a visual "socket" as they do at Ulm or in the Regensburg drawing. The western portal is surprisingly modest, without any preceding porch. Each face of the tower is divided into two bays, with large staircase turrets on the lateral faces and a strong central mullion on the west. This bifurcation of each tower face is particularly insistent because the relatively

Coolman comme l'auteur du plan de la tour de S. Rombout?" ([BCAM, 1904], 239-50); both cited in Langendonck, "St. Romboutstoren," 78.

³⁴ Langendonck, "St. Romboutstoren," 65-66.

³⁵ Langendonck, "St. Romboutstoren," 57.

³⁶ Workers building the new structure could use the old tower as a scaffolding, and the mass of the old tower could serve in the interim to buttress the nave. This process recalls that later employed by Martin Chambiges in the facade of Troyes Cathedral. See Stephen Murray, *Building Troyes Cathedral: The Late Gothic Campaigns* (Bloomington, Ind., 1987), 92.

³⁷ Although the tower foundations are only three meters deep, the high water table evidently complicated their construction. The legend that leather was used to waterproof the foundations seems, however, to be based on a misinterpretation--piles were used instead, as in other local construction projects. Linda van Langendonck, conversation with the author, Mechelen, 16 December 1993.



9-12 Mechelen,
Chalon Plan.

small size of the west portal and the absence of side aisles allow this articulation to descend all the way to ground level. The dominance of the buttresses over the windows is particularly striking by comparison to Rayonnant tower designs, which usually echoed the articulation and bay division of the main vessel, as at Cologne. At Mechelen, however, the bifurcation of the tower faces does not reflect the presence of double aisles, as it does at Cologne or Antwerp, for example. The Brussels town hall, rather than the Antwerp facade, may therefore have served as the source of this idea.³⁸ These options should not be seen as mutually exclusive, since Jan II Keldermans and Walter Coolman were doubtless aware of both prototypes.

From a technical perspective, the Mechelen tower would have appeared unusual to a German or French mason because it was constructed primarily out of brick, with a thin veneer of stone. Only the sculpted details are carved from large blocks of ashlar. This gives the Mechelen tower the appearance of an actual stone tower, though most of its bulk consists of brick. While builders in Lübeck, Landshut, and Munich were content to build relatively simple brick churches with correspondingly simple brick towers, fifteenth-century builders in Brabant still preferred the complex forms of tabernacle-like great spires.³⁹ Because of the paucity of good building stone in the Low Countries, brick was used in most buildings, but this material was not frankly expressed in the most ambitious church projects, which required the apparent gravitas of stone construction.

Upon the death of Walter Coolman in 1468 the Mechelen workshop entered a new era, led by Andries Keldermans, son of Jan II. Like Coolman, Andries Keldermans trained as a sculptor.⁴⁰ While Coolman had preferred restrained forms such as simple pointed arches

³⁸ Wilson, *Gothic Cathedral*, 245

³⁹ Ulm represents an interesting intermediary case, in that the tower and spire are made of ashlar, while much of the church vessel is brick.

⁴⁰ He is recorded as assisting his father in the execution of the sculptural program of the Leuven city hall already in 1439. Langendonck, "St. Romboutstoren," 88.

and inscribed trefoils in his projects, Andries employed the full range of small decorative forms characteristic of the Brabantine Florid style: ogee arches, arches with bell-shaped heads derived from painting, mouchettes, soufflets, and interlaced arches inspired by the architecture of the Parlers and Ensingers. Indeed, Wilson credits Andries with the invention of the Florid style, although many of its ingredients had previously been assembled in the south transept porch of 's-Hertogenbosch.⁴¹ Under the direction of Andries Keldermans, therefore, the Mechelen tower workshop became one of the principal centers of Brabantine Late Gothic design.

The Florid Gothic articulation of the Mechelen tower above Coolman's entrance story is essentially seamless. This suggests that Andries Keldermans left behind an elevation drawing to guide work on the upper tower. In fact, two closely related designs for the tower and spire have been preserved: the so-called Chalon and Hollar Plans (figs. 9-12 and 9-13). Both appear to have been developed in the sixteenth century, but their many shared features suggest that they represent two versions of an original scheme probably developed by Andries Keldermans in the 1470s. In particular, they share an innovative plan geometry whose complexity typifies the Florid Gothic approach to spire design.

At Mechelen, the square-to-octagon transition is made by means of a star-shaped intermediary story. In this scheme, the diagonal sides of the octagon are linked to the corners of the circumscribing square, as in the spire plan of Freiburg. In addition, though, the eight corner points of the octagon are linked to the centers of the square's sides, making a sixteen- rather than twelve-sided star. Equivalently, the Mechelen tower plan may be seen as four large and four small triangles set around the octagonal core. This plan reflects the fact that each side of the square tower at



9-13 Mechelen,
Hollar Plan

⁴¹ Wilson, *Gothic Cathedral*, 243.

Mechelen is divided into two bays by a strong vertical support.⁴² When projected into elevation, the corners of the small triangles form vertical flanges that visually continue the line of these supports, just as the larger triangles continue the buttresses at the corners of the square tower.

Andries Keldermans appears to have arrived at this elegant scheme by drawing upon contemporary tabernacle design. In general, tabernacles could have more exotic plans than full-scale spires, mostly because of their independence from the square plan of supporting towers. From his work in Leuven as a young man, Andries would have known the star-planned tabernacle of the Pieterskerk, which was completed in the 1450s. His creative masterstroke was to realize that this plan geometry, which appears in mid-air at Leuven, could be integrated with a square tower if it were amplified from six-fold to eight-fold symmetry.

The plan of the uppermost stories at Mechelen also reflects the influence of tabernacle design. While French and German spire designers stopped altering the geometry of their spires once they had reached an octagonal section at the base of the spire cone, Brabantine designers like the Keldermanses kept on reducing the section through rotations and subtractions until there was nothing left. Florid Gothic tower terminations thus resemble tabernacles in having no spire cone per se.⁴³ The transition from square to octagon thus became just one in a series of geometric progressions. In this respect Brabantine Florid Gothic stands at the opposite extreme from English Gothic, where octagonal spire cones were often placed directly onto square towers with no geometrical transition. At Mechelen, a lantern with a Greek cross plan was to have risen from the corners of the octagon. A tiny octagonal spike surrounded by a crown of small pinnacles would have formed the final termination of the tower. These features are common to the Chalon and the Hollar plans, suggesting again that the overall scheme was originally determined by Andries Keldermans.

By the early 1480s, both the formal and administrative direction of the Mechelen tower project had been effectively established. Andries Keldermans, who oversaw the work until at least 1481, probably supervised the dismantling of the old tower that had formed the core of the

⁴² One of the plan drawings from Ulm Minster shows a similar disposition. It seems unlikely that there was a link between this little-known and unexecuted drawing and the work of the Keldermanses, but the question must remain open pending further research. See the discussion of Ulm, above, and Friedrich, "Risse zum Hauptturm."

⁴³ This may well have been a point of pride. Although Brabantine tower terminations look "unspirelike" to modern eyes, their close resemblance to tabernacles may have been intended as a return to the spire's typological roots. The multiplication of plan changes also provided greater scope for the demonstration of architectural and geometric virtuosity.

new construction, which took place in 1481 and 1482.⁴⁴ By this time the new tower would have reached a height of roughly fifty meters. Although this was less than a third the intended height of the entire structure, the work completed under Andries established the Florid articulation style that would guide subsequent construction on the tower. Andries Keldermans's tenure as master also witnessed major political developments in Mechelen and crucial changes in the financing of the tower project. In 1473 Mechelen had been chosen by Charles the Bold as site of the central parliament of the Burgundian Low Countries. Following the death of Charles the Bold in 1477, however, the Burgundian realm disintegrated. His widow Margaret of York took up residence in Mechelen, and his daughter Maria of Burgundy was married to Emperor Frederick III's grandson Maximilian, bringing Flanders and Brabant into the hands of the Habsburgs. Under pressure from the merchant cities of her territory, Maria of Burgundy was forced to grant the "Great Privilege" of 1477, according to which many centralized structures of the former administration, including the parliament of Mechelen, were dissolved.⁴⁵ Upon Maria's death in 1482, her young son Philip the Fair was named regent, but power effectively remained in the hands of local governments. In 1478, shortly after the granting of the "Great Privilege," the government of Mechelen revolutionized the funding of the Saint Rombout's tower project by levying taxes for its construction.⁴⁶ The papal indulgences for tower construction had run out in 1465, and donation rates had declined in any case. As in Antwerp, therefore, the Mechelen tower project depended directly on civic support.

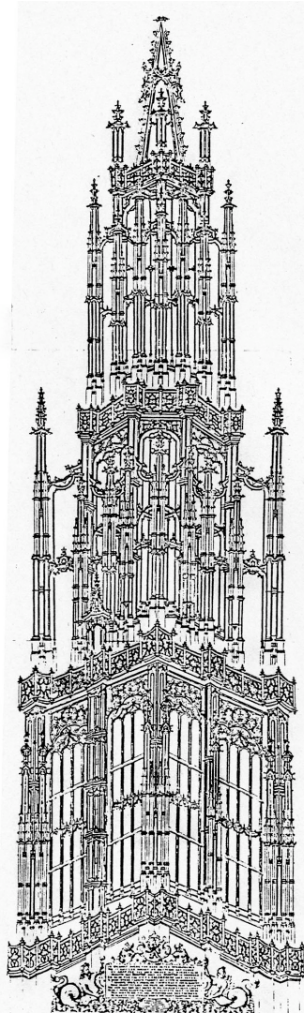
The establishment of local taxes to support construction of the tower of Saint Rombout attests to a commonality of interest between the government of Mechelen and the collegiate chapter of the church. Towers in the Low Countries were even more important as foci of civic identity than they were in other parts of Europe. Although the city hall of Mechelen had been rebuilt in the 1370s, it had no great tower that could vie with those of Brussels or Bruges. The belfry of the market hall had been left incomplete due to the fourteenth-century crisis of the textile industry.⁴⁷ The tower of Saint Rombout therefore became Mechelen's principal vehicle for architectural self-proclamation. Additionally, the tower was meant to hold the city's belfry and watchman. These were administered directly by the city government, though the rest of the tower was the property of the

⁴⁴ Langendonck, "St. Romboutstoren," 95, notes that the last explicit reference to Andries as master comes in 1481, but he may have died as late as circa 1500.

⁴⁵ Diriken, *Mechelen*, 17.

⁴⁶ Langendonck, "St. Romboutstoren," 67.

⁴⁷ Diriken, *Mechelen*, 95, 98.



9-14 Zierickzee, St-Lieven, unexecuted tower plan.

chapter.⁴⁸ From the perspective of the local government, levying taxes for the tower's construction would have been justified in terms of these important functional requirements. Once they were satisfied, however, the partnership between chapter and city government was bound to become more tenuous. Ultimately, the chaos of the Reformation would undercut this partnership entirely, leaving the tower termination of Saint Rombout's church incomplete.

Despite the contingent status of the church-civic alliance in Mechelen, construction of the St-Rombout tower proceeded rapidly in the 1480s and 1490s. With funding guaranteed by taxes, teams of workers under Andries Keldermans and his son Antoon I reached the height of the bell-chamber by 1491. The city government at that point bought two wooden frames to hang the bells and paid for their installation. Much of this progress was undone by a fire in May 1498, but the bells were soon replaced and repair work completed.⁴⁹ Progress on the building went forward for another two decades. The westernmost vault of the nave was completed in 1513, and the tower reached its present height by circa 1520.⁵⁰ Even after the turn of the sixteenth century, therefore, it appeared likely that the grandest visions of the Keldermanses might well be realized.

Although the overall design of the Mechelen tower had probably been

⁴⁸ Langendonck, "St. Romboutstoren," 9.

⁴⁹ Langendonck, "St. Romboutstoren," 67-68.

⁵⁰ Langendonck agrees with the 1520 date ("St. Romboutstoren," 126), although she also notes that this dating, widely cited by scholars, does not depend on any hard documentary evidence (71).

determined by Andries Keldermans in the 1470s, modifications seem to have been proposed by his grandson Rombout II, who took over as "master builder of the city and the tower" in 1515, following the brief tenure of his brother Antoon II.⁵¹ Rombout was perhaps the most prolific designer in his family, working on several major church towers as well as numerous secular projects. He designed the church of Saint Catherine at Hoogstraden, whose large western tower now carries a bulbous seventeenth-century termination,⁵² and he has generally been credited with developing the unexecuted design for the tower termination of Saint Lieven's church in Zierickzee, a project with which his family had been involved since the mid-fifteenth century (fig. 9-14).⁵³ The stylistic similarities between this design, as recorded in an engraving of 1619 by A. van der Willighe, and the plan for the Mechelen spire engraved in 1648 by Wenceslas Hollar, suggest that the Hollar plan was developed by Rombout Keldermans.⁵⁴ The somewhat more conservative Chalon design should probably be attributed to one of his ancestors.

Both the Chalon and Hollar plans show the Mechelen tower as a stylistically unified whole with up-to-date lower stories in lieu of the simpler structure actually built by Walter Coolman. Both show a diagonally-planted terrace in front of a richly encrusted portal zone, with complex cusping over the main portal arch. Only the Hollar plan shows diagonally planted arches and balustrades in the exterior angles of the corner buttresses, and the tracery is shown with a more exuberant plasticity than in the Chalon plan. Another clue to the Hollar plan's later dating is its use of the compound criss-cross arches to terminate the tower's octagonal

⁵¹ Langendonck, "St. Romboutstoren," 100.

⁵² The origins of this bulbous format, which enjoyed great popularity in the 17th century, have been investigated by Pablo de la Riestra in "Chapiteles bulbosos." De la Riestra believes that this format was developed already in the 15th century, as part of the same stylistic ferment that produced the fantasy architecture seen in Jan van Eyck's Ghent Altarpiece, the dome-topped towers of the Liebfrauenkirche in Munich, and other dome-topped German tower designs discussed in the previous chapter. As noted there, however, the Munich design may date only to the 16th century. De la Riestra's argument for the early origin of the bulbous format in the Netherlands, moreover, depends on his assumption that a surviving drawing of the Grote Kerk in Breda dates to 1468, when construction of the church's western tower began. This seems unlikely, for a variety of reasons. The upper timber portions of the Grote Kerk tower were added only in 1509, three years after construction of the masonry tower had been completed. The style of the drawing, moreover, suggests a date no earlier than circa 1500, since it includes both perspectival depth cues and shading. The form of the tower termination in the drawing, finally, almost perfectly matches that seen at Hoogstraden, where the timber bulb was added only in the 1640s (Buyle, *Architecture gothique*, 117). Thus, while Baroque tower builders were in a very literal sense building on the work of their Gothic predecessors, the particular bulbous tower forms seen in the 17th century appear to have arisen only after the end of the Gothic era.

⁵³ Langendonck, discussion with the author, Mechelen, 16 December 1993.

⁵⁴ According to Langendonck, this attribution was first suggested by G. van Caster ("St. Romboutstoren," 103). Langendonck discusses the design further in *ibid.*, 118.

story. The analogous zone of the Chalon plan shows a far simpler arch anchored beneath a balustrade. The most conspicuous difference between the two, however, appears in the silhouette of the uppermost stories. Although the plan geometries of both versions progress from star to octagon to Greek cross, Rombout Keldermans departed from the Chalon plan in making the Greek cross story of the Hollar plan considerably smaller than its analog in the Chalon plan, which was to have been inscribed precisely within the octagon. This breaks the vertical continuity of the two stories, forcing the terminal pinnacles of the octagon to a lower level in the overall composition. The resulting prickly silhouette recalls traditional spires and tabernacles, while the elegant but bizarre form of the Chalon plan appears more like an overgrown lantern. It is worth stressing that both of these designs would have been truly colossal, in the 165-170 meter class; the great spire of Ulm, by contrast, reaches "only" to 161 meters, and that of Strasbourg, the tallest actually built in the Middle Ages, to "only" 142 meters.

Ultimately, neither of these ambitious plans was realized. The abandonment of the St-Rombout spire project ironically coincided with Mechelen's greatest days as a political and economic power. In 1506 Philip the Fair had established the Great Council of Mechelen as the central court of justice in the Netherlands. When Philip died shortly thereafter, leaving his daughter Margaret of Austria to govern the Netherlands, she set up her court in Mechelen, building a new palace in the eastern part of the city. With its restrained decoration and brick construction, her palace already seems to belong to the world of the Renaissance--indeed, Dürer, Erasmus, and Thomas More were among Margaret's distinguished guests.⁵⁵ The meeting hall of the great council that Rombout Keldermans designed at Margaret's behest, however, was conceived as a masterpiece of Florid Gothic. Its construction was begun in 1526.⁵⁶ Like Perpendicular Gothic in England, Florid Gothic in Brabant remained a viable style long after the advent of humanist learning.

Despite the generally good fortunes of the city in Margaret's reign, growing religious tension soon eroded the partnership of civic and ecclesiastical interests that had facilitated rapid construction of St-Rombout's tower. Already in 1519 Protestants in Mechelen were being indicted and executed for heresy.⁵⁷ Such intolerance from the Catholic establishment accorded poorly with the more open-minded humanism of

⁵⁵ Diriken, *Mechelen*, 19.

⁵⁶ Construction stopped in 1547, however, and the building was completed according to the original designs only in the early 20th century. Diriken, *Mechelen*, 98.

⁵⁷ Langendonck, "St. Romboutstoren," 72.

Margaret's court and many members of Mechelen's ruling elite. In this charged environment, spending on the functionally extraneous termination of the St-Rombout tower lost its appeal. Emphasis was placed instead on the completion of the parts of the tower most useful to the city, namely the belfry and the watchman's lookout. After 1530, the declining fortunes of Mechelen and the religious wars in the Low Countries made realization of the Keldermanses' grandiose visions essentially impossible.

Because the Mechelen spire project died with a whimper rather than a bang, it is difficult to say whether it was definitively forsaken in the 1520s, or whether it was simply decided to defer the project until a more auspicious moment. A number of arguments favor the latter hypothesis. It has been claimed, for instance, that stones quarried for use in the Mechelen tower were confiscated by partisans of William of Orange and used to build the fortress of Willemstad in Zeeland.⁵⁸ More concretely, the fact that the masonry of the star-shaped spire story was carried above the watchman's balustrade suggests that continued construction was contemplated. Similarly, the enormous iron tie rods that bind the uppermost level of the tower together may well have been intended to resist the thrusts of the eighty-meter spire to be constructed above.⁵⁹ Clearly, however, it was considered advisable to complete the functional parts of the tower, namely the belfry, clockwork, and watchman's balustrade, before committing any further resources to the spire project.⁶⁰

As it turned out, construction of the spire was never resumed. Following Margaret of Austria's death in 1530, Mechelen's fortunes declined dramatically. The capital of the Netherlands was moved to Brussels, and

⁵⁸ Although no contemporary documents confirm it, the story appears already in the 18th century (Langendonck, discussion with the author, Mechelen, 16 December 1993). It should be noted, however, that the claim that the stones were already carved into their finished shapes is probably in error (see, for example, Sarah Crewe, ed., *Visionary Spires* [New York, 1986], 15). Such fragile and irregular stones would have been difficult to use in fortress construction, although they could have been used as rubble. Further, carving costs comprised a great deal of the total budget of medieval construction, especially in the Low Countries where so much building was in brick. The economic decline of Mechelen after the 1530s would have made this kind of expenditure for the tower difficult if not impossible. Finally, it would be strange to carve ALL the parts of the spire into finished shapes before installing any of them.

⁵⁹ The structure of the Mechelen tower is unusually hollow and boxlike by French or German standards. Several of the major floor divisions in the tower are simply wooden, not vaulted. Except for the vault of the nave's western bay, the only vaults in the tower are at the very top. It is possible that the iron ties were simply meant to resist the force of these vaults, which have a quite generous span of twelve meters or so.

⁶⁰ This thesis had already been advanced by Steurs in the late 19th century; see Langendonck, "St. Romboutstoren," 72. Despite the understandable privileging of the functional parts of the tower, however, it is hard to agree with Langendonck that the truncated tower was quickly accepted as a finished thing in itself. The fact that many spires were left truncated does not mean that their designers and patrons were satisfied with that result.

Mechelen became, as one local history says, "a quite common provincial town."⁶¹ In 1546 injury was added to insult as lightning struck a bastion being used for gunpowder storage, causing a catastrophic explosion that killed over two hundred people and devastated houses near the center of town. Mechelen suffered terribly in the wars of religion that shook the Low Countries following the abdication of Emperor Charles V in 1555. The establishment of Mechelen as an archdiocese in 1559 served only to inflame Protestant ire, culminating in the Iconoclasm of 1566. The city was looted in 1572 by the starving Catholic soldiers of Alba, the Spanish governor of the Netherlands, and then assaulted in 1580 by the invading Dutch. It was at this point, supposedly, that the stones from the spire were requisitioned for the construction of the fortress at Willemstad. Ultimately, Mechelen remained Catholic, enjoying a period of relative stability in the seventeenth century under the government of the Spanish archdukes, but by this time the spire project appears to have been definitively abandoned.

Mons

Despite these grievous setbacks in the decades after 1530, the reputation of the Mechelen workshop remained such that masons from other lodges would come to seek guidance on their own projects. As a consequence of one such consultation, the Keldermanses' tower enjoyed a strange afterlife that has complicated its historiography. The canonesses of St-Waudru in Mons had begun reconstruction of their church in 1450.⁶² Work proceeded from east to west, reaching the location of the proposed western tower by 1546.⁶³ At that point the canonesses decided to send observers to the tower worksites of Mechelen, Antwerp, and Leuven, to get a sense of available design options.⁶⁴ The Mechelen scheme was selected as the most reasonable prototype for the Mons project. The canonesses therefore asked that a drawing of St-Rombout's tower be sent from to Mons to serve as the point of departure for their designers.

This drawing was the Chalon plan. Because Chalon found the drawing in Mons, he published it in 1844 as "the original plan for the tower of Saint-Waudru in Mons," despite gross discrepancies between the drawing and the stump of the Mons tower. Not until 1889 was it demonstrated that the drawing actually represented the tower of Mechelen.⁶⁵ The fact that both the Chalon and Hollar plans seem to have been developed for Saint

⁶¹ Diriken, *Mechelen*, 18-22.

⁶² *Nord et Est*, 95.

⁶³ Lucy Tondreau, *La Collégiale Sainte-Waudru à Mons* (Mons, 1987).

⁶⁴ Langendonck, "St. Romboutstoren," 121-22.

⁶⁵ Langendonck, "St. Romboutstoren," 121.



9-15 Mons, St-Waudru.

Rombout's tower tends therefore to be overlooked.⁶⁶ It remains unclear why the Chalon and not the Hollar design was sent to Mons. Perhaps the Chalon plan was suitable for export because it had been superseded by the Hollar design. Alternatively, it is possible that the Hollar plan never displaced the Chalon plan, so that the Chalon plan was sent to Mons in good faith as the version favored by the Mechelen lodge.

With its single western window and simple articulation, the Mons tower departed dramatically from the Chalon plan (fig. 9-15). Despite these simplifications, work on the tower proceeded only fitfully. The first campaign lasted from 1546 to 1571, the second from 1618 to 1636.⁶⁷ By that time the tower had reached only the height of the nave, roughly twenty-two meters. By contrast, the intended height of the structure was supposedly 190 meters.⁶⁸ This would have made the tower of Mons by far

⁶⁶ Werner Gross, for example, identifies the Chalon plan as the design for Mechelen, and the Hollar plan as the design for Mons. See idem, *Gotik und Spätgotik* (Frankfurt am Main, 1969), 168. Conversely, others have associated the Chalon plan with Mons and the Hollar plan with Mechelen. See Crewe, *Visionary Spires*, 15.

⁶⁷ Tondreau, *Collégiale Sainte-Waudru*, 5.

⁶⁸ The 190 meter figure is given in by Gross in *Gotik und Spätgotik*, 168. In discussion with this author (Mechelen, 16 December 1993), Langendonck said that she knew nothing about the sources of such a figure. Perhaps Gross simply scaled up the Chalon plan to fit the dimensions of the Mons tower base, but this suggests an easier visual fit between the two designs than actually exists. A model of the Mons tower was apparently built in 1618 at the

the tallest structure in the world until the construction of the Eiffel Tower in 1889. Although this comparison may make the 190 meter figure seem implausible, projects of comparable scale had been proposed in Mechelen and Leuven, the way to such achievements having been paved by the lodges of Strasbourg and Vienna. This megalomaniacal vision was not definitively abandoned until 1686, when it was decided to cover the tower stump with a simple wooden roof.⁶⁹ At Mons, therefore, an essentially Gothic vision continued to dominate planning even in the lifetime of Bernini.

Leuven

One of the most unusual Brabantine spire projects was developed in Leuven. While the spire designers in Antwerp, Mechelen, and Mons had remained faithful to the traditional one- or two-towered church types, the builders of the Pieterskerk in Leuven began in the early sixteenth century to erect a three-spired westwork block no less than 140 meters tall. Although the final design can be criticized on aesthetic grounds, the story of its evolution offers valuable insight into the nature of late medieval city planning and self-representation. As Wilson has observed, the three-tower format of the Late Gothic design for the Pieterskerk had an important local precedent: the Romanesque and early Gothic westwork it replaced, an important civic symbol that had long been represented on the local coinage.⁷⁰ The rebuilding of the westwork at the Pieterskerk was, however, just one of a series of major symbolic projects launched by the city government in the fifteenth century. These projects should be understood in light of Leuven's competition with other cities in the region, notably Brussels.

Leuven had a proud history as the original seat of the duchy of Brabant.⁷¹ In the late thirteenth century, however, Duke John I had moved the capital to Brussels. For nearly a century thereafter Leuven remained prosperous, but the disruption of the wool trade in the Hundred Years' War and the growing primacy of Bruges and Antwerp conspired by the second half of the fourteenth century to deprive the city of its former glory. The economic health of Leuven began to recover early in the fifteenth century, thanks largely to the tastes of the Burgundian court, for which the city produced

beginning of the second campaign, perhaps providing another source for the 190 meter figure. See Tondreau, *Collégiale Sainte-Waudru*, 5.

⁶⁹ Tondreau, *Collégiale Sainte-Waudru*, 5.

⁷⁰ Wilson, *Gothic Cathedral*, 246.

⁷¹ Marc Derez, *Wonderful Leuven* (Tielt and Leuven, 1991), 8.

much luxury clothing. The establishment of the University of Leuven in 1425 further contributed to the city's prestige. As soon as it became economically feasible, attention turned to the improvement of the city's monuments. Rebuilding of the Pieterskerk's choir was begun in 1410. Its architecture represented a synthesis of precedents from Antwerp and Mechelen, but the project should probably be seen as a belated rejoinder to the church of St-Gudule in the upstart capital of Brabant, Brussels. Although the Pieterskerk was the first major monument in Leuven to be reconstructed, demolition of the symbolically laden three-tower westwork was put off until the end of the project.

The connection between the Pieterskerk workshop and the larger project of civic renewal became explicit in the later fifteenth century, as the same three masters served in succession as chief architects of the Pieterskerk and of the city council. The first was Sulpitius van Vorst, who had assisted in the construction of the Brussels city hall before becoming master of the Pieterskerk workshop in 1425. In 1438 van Vorst began construction of Leuven's great city hall immediately to the south of the Pieterskerk, but he died only a year later. His place was taken by Jan II Keldermans of Mechelen, who directed work at both buildings until 1445. The crucial player in the development of downtown Leuven was Mathijs de Layens, a former assistant to Sulpitius van Vorst, who served as city architect from the late 1440s until the 1480s. In his long career, Mathijs de Layens completed Leuven's city hall, built much of the transept and nave of the Pieterskerk, and drew up plans for both a new market structure on the main square and a colossal three-tower Gothic westwork for the Pieterskerk.⁷² In addition, he erected the tabernacle within the Pieterskerk (fig. 9-9), and his name has been associated with early planning for Saint-Waudru in Mons. Mathijs de Layens may not have been as committed a spire enthusiast as Ulrich von Ensingen, but the circumstances of architectural competition in Brabant drove him to produce a number of original tower schemes.

The 1450s were a crucial decade for tower and spire development in Brabant. In 1452 and 1454, respectively, ground was broken for the great towers of Mechelen and Zierickzee. By 1455 Jan van Ruysbroek had crowned the city hall of Brussels with a large openwork spire, having completed a similar spire at the church of St-Gertrude in Leuven in 1453.⁷³ Mathijs de Layens, as architect of Leuven's principal church and city hall, surely did not wish to be outdone by these new projects. In response, he greatly increased the sumptuousness of the Leuven city hall, and planned a

⁷² Derez, *Leuven*, 35.

⁷³ *Nord et Est*, 86.



9-16 Leuven, City Hall.

single great tower for the city hall that would outshine that of Brussels. The soil conditions, however, proved poor. In a resourceful move, Mathijs decided instead to decorate each terminal facade of the Leuven town hall with a triplet of openwork spires, symbolically evoking the venerable westwork at the Pieterskerk (fig. 9-16). It may well be this experience with the city hall that led Mathijs in 1459 to propose a colossal three-tower Gothic westwork for the Pieterskerk itself. Reportedly, the three spires were intended to stand apart from each other, each reaching the tremendous height of 170 meters.⁷⁴

Examination of the Leuven town hall sheds light on Mathijs de Layens's intentions for the facade of the Pieterskerk. Since the two buildings face one another, Mathijs

would have wanted them to complement each other visually and symbolically. Also, a revised version of the Pieterskerk design drawn by Mathijs's successor Joost Metsijs evokes the town hall, and the original resemblance was probably even closer. The facade of the Leuven town hall is organized into three very similar rows of windows, embedded in a rich surface of blind tracery panels and statue niches. The six spires of the lateral facades are delicate structures, not so much openwork cones as bundles of narrow ribs held together by decorated collars. The overall effect of the spires is spiky and brittle, but elegant in the context of the town hall.

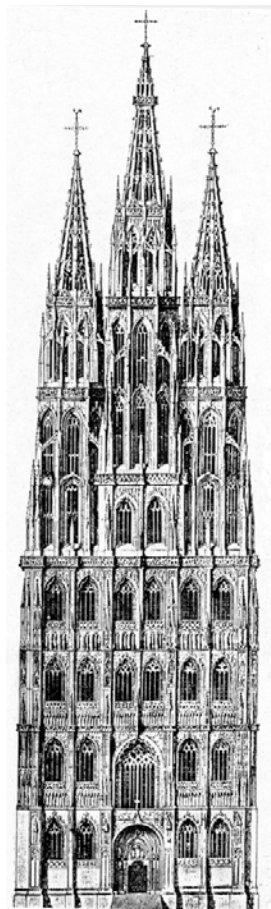
Mathijs de Layens himself could not immediately implement a similar vision at the Pieterskerk, as he and his crews were busy with other civic projects. In 1469 they completed the town hall, and in 1475 they finished

⁷⁴ The surviving design by Joost Metsijs has eclipsed the original three-tower concept of Mathijs de Layens, which tends to be mentioned rarely and in passing. Neither Wilson's *Gothic Cathedral* nor Langendonck's "St. Romboutstoren" provides information about the earlier plan. Derez discusses the equal tower heights (*Leuven*, 31-32).

vaulting the transept of the Pieterskerk. In 1480 the town council commissioned Mathijs to rebuild the so-called Round Table Hall on the market square, completing the suite of major public buildings in the area. With this coherent program of urban renewal well underway, attention turned to completion of the Pieterskerk. In 1481 a drawing of the contemplated westwork was displayed in the church, probably to drum up enthusiasm for the project.⁷⁵ The nave was completed in the last two decades of the century, and the south transept porch of the church was added in 1497 by Mathijs de Layens's successor Alard Duhamel.⁷⁶ In 1499 the old westwork was at last pulled down, making way for a colossal three-tower facade along the general lines evidently foreseen by Mathijs de Layens.⁷⁷ Construction began in 1507.

The man in charge of the sixteenth-century westwork project was Joost Metsijs, brother of the painter Quentin Metsijs and himself a clockmaker by trade. His design for the Leuven westwork has been preserved both as a drawing and as a large stone model erected between 1524 and 1525 (figs. 9-17 and 9-18).⁷⁸ Joost Metsijs modified Mathijs de Layens's design by bringing the three towers together into a tight cluster and reducing the height of the side towers relative to the central one. In addition, he depicted the westwork with an encrustation of up-to-date Florid Gothic details, such as the frill around the west window of the clerestory.

Although repetitive in its detailing, the design by Metsijs draws on an interesting range of sources. The lower stories suggest a cross-breeding of the Cologne cathedral facade and the Leuven town hall as completed by Mathijs de Layens. The formula of repeated



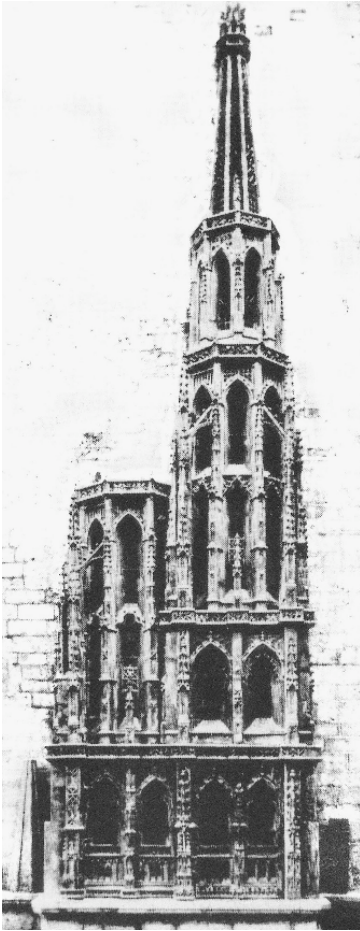
9-17 Leuven,
Pieterskerk, west facade
scheme.

⁷⁵ Wilson, *Gothic Cathedral*, 247.

⁷⁶ *Nord et Est*, 87.

⁷⁷ Langendonck, "St. Romboutstoren," 119.

⁷⁸ Wilson, *Gothic Cathedral*, 247.



9-18 Leuven, Pieterskerk, model of west facade.

rows of windows, elegantly consistent in the town hall, becomes rather monotonous when piled high in Metsijs's design. The central strip of double windows appears to have been pulled upwards, making room for the entry portal at ground level and providing a pedestal to raise the central tower above its otherwise identical neighbors. The tower octagons resemble that of Notre-Dame in Antwerp, with richly articulated ogee arches separating two stories articulated with thin mullions. The large pinnacles on the corners of the facade also recall Antwerp. The octagons themselves are oriented face-forward, however, and the small pinnacles between the two "aisle" bays recall Cologne. At the next level, the octagons are rotated a half turn, as double flying buttresses depart in Y-shapes from the terminal pinnacles of the primary octagons below. This rotation scheme was probably borrowed wholesale from the tabernacle erected by Mathijs de Layens in 1450. The spire cones resemble those of the town hall, with their prominent flanges and widely separated crockets, but their surfaces are rendered in openwork. Although this idea derives from the Germanic tradition, the tracery itself is

even more free and flamelike than Matthäus Böblinger's tracery at Ulm. Large metal crosses are shown terminating each spire, and a crow's nest balustrade crowns the central spire cone.

Work on this elaborate project proceeded slowly. By 1541 the structure was only fifty meters high. The reasons for this slowdown are not entirely clear. Religious discord seems to have played no major role, at least initially, for Leuven remained staunchly Catholic despite its reputation as a

center of humanism.⁷⁹ Nor was there a strong turn to Renaissance religious architecture in these years. In 1537, an emphatically Gothic tabernacle was erected in Leuven's church of Saint Jacob by Gabriel van den Bruynen. In 1547 builders from Mons visited Leuven, along with Antwerp and Mechelen, on a mission to inform themselves about tower projects in other cities.⁸⁰ The fact that these men chose to model their tower on that of Mechelen, rather than on the Pieterskerk suggests that the project of Joost Metsijs initially lagged more because it had failed to compel enthusiasm than because the competitive climate of Gothic building had dissolved.

By the late sixteenth century, however, the fate of the westwork was sealed. By that time religious warfare in the surrounding territory had begun to chill the climate for large-scale construction, even in Leuven. Then, in 1570, much of the structure collapsed because of the inadequacy of the foundations and the poor soil conditions. Plague struck the city in 1579, and more of the westwork collapsed in 1606.⁸¹ In 1613 the structure was broken down to its present height of roughly thirty meters for the sake of safety.⁸² An earthquake in 1750 caused further damage, however, and efforts directed at repairing and maintaining the westwork continue even today.⁸³

Even in their truncated state, the massive tower stumps of Leuven, Mons, and Mechelen, together with the lofty spire of Antwerp, bear witness to the importance of towers and spires in the architectural culture of the Low Countries, as well as to an impressively creative engagement with influences from Germany. In Spain, as in Brabant, German achievements in spire-building helped to catalyze the development of a new Late-Gothic idiom. The cases of Spain and Brabant both offer evidence, therefore, that German-style spire design and French-style vessel design were seen as complementary developments worthy of importation.

Spain

Spanish assimilation of northern Gothic practice tended to proceed in two basic steps. In the first, northern designs were emulated fairly directly, as at the French-inspired cathedrals of Burgos, Toledo, and León in the thirteenth century. In the second, the imported forms were deployed in new ways to produce dramatically original designs. This process may be traced in the development of Catalan Gothic architecture in the fourteenth century.

⁷⁹ Indeed, professors from the University of Leuven were among the first to condemn Luther (Derez, *Leuven*, 51).

⁸⁰ See discussion of Mons above.

⁸¹ Derez, *Leuven*, 31-32, 55.

⁸² Langendonck, "St. Romboutstoren," 120.

⁸³ *Nord et Est*, 87.

Great churches such as Santa Maria del Mar in Barcelona and the cathedral of Palma clearly depend on French and Castilian precedents, but Gothic technique was employed to create an architecture of cavernous space rather than highly articulated skeletal structure.

This process recurred in the later Middle Ages, but by the fifteenth century France was no longer the primary source of new ideas in Gothic architecture. At the cathedral of Seville, for example, the influence of Peter Parler's work at Prague may be discerned in the prominent interior balustrade.⁸⁴ It was in Castile, however, that the traditions of Germany and the Low Countries achieved their greatest impact in the late Middle Ages. The flowering of the Hispano-Flemish style in painting and sculpture was paralleled by the importation of German and Flemish architects.⁸⁵ Spires never achieved the popularity in Spain that they enjoyed in Germany and the Low Countries, but the spire projects of Burgos, Toledo, and León played an important part in bringing Late Gothic architecture into the Iberian Peninsula, preparing the way for Spain's impressive burst of Gothic construction in the late fifteenth and early sixteenth centuries.

Burgos

The importation of German Gothic spire forms into Spain can be traced with atypical clarity in the case of Burgos. The bishop of Burgos, don Alonso de Cartagena, had attended the Council of Basel in the 1430s.⁸⁶ In Basel itself, he would have seen the spires designed by Ulrich von Ensingen, and he may have seen the spire of nearby Freiburg as well. Evidently impressed, he hired a master named Johann of Cologne to add similar spires to the cathedral of Burgos. The spires of Burgos, built by this "Juan de Colonia" between 1442 and 1458, were the first openwork spires constructed on the Iberian Peninsula (fig. 9-19). Like all openwork spires, those of Burgos may be seen as descendants of Cologne's Plan F, but Juan de Colonia was not simply copying the forms first laid down in parchment in his home town, as some authors have implied.⁸⁷ Although the tracery panels of the Burgos spire cones appear somewhat retardataire by the standards of mid-fifteenth-century German spire design, they do not exhibit the same reliance on inscribed circles seen in Plan F. In general, the

⁸⁴ Wilson also notes a possible relationship between Seville and Florence (*Gothic Cathedral*, 285).

⁸⁵ This idea of a "drive to the north" in Castile, contrasted with the "drive to the east" in Aragon and Catalonia, comes from Charles D. Cuttler, *Northern Painting: From Pucelle to Breugel* (New York, 1968), 237.

⁸⁶ José María Azcárate, *Arte Gótico en España* (Madrid, 1990), 125.

⁸⁷ See, for example, John Harvey, "The Mason's Skill: The Development of Architecture," in *The Flowering of the Middle Ages*, ed. Joan Evans (New York, 1966), 117.

Burgos tracery reads as a simplified version of Freiburg's. The upright lancets in the lowest tracery panels, however, together with the balustraded decks near the top of the spire cones, suggest the influence of Ulrich von Ensingen's Ulm Plan A.⁸⁸

Unlike those of Cologne, Freiburg, and Ulm, the spire cones of Burgos emerge directly from the square towers below, without an octagonal tower story to soften the transition. In this respect the Burgos spires resemble those of Rothenburg ob der Tauber and other smaller German cities that appropriated the openwork spire cone format without the complexity of the full-blown great spire type. At Burgos, Juan de Colonia was constrained by a two-towered west front inherited from the thirteenth century, and there may have been concern that adding octagonal tower stories would strain the existing structure as well as the resources of the fabric fund.

While the western spires of Burgos represent an essentially direct importation of a German building type into Castile, the subsequent projects of Juan de Colonia and his family display an increasingly Spanish character. Following the completion of the western spires, Juan de Colonia began to construct a great lantern tower over the cathedral's crossing. Crossing lanterns were essentially unknown in German Gothic architecture, but they remained popular in Spain, where Moorish vaulting and Romanesque towers like that of the old cathedral at Salamanca continued to command respect. The crossing lantern begun by Juan de Colonia was completed by his son Simón in 1502, but it collapsed in 1539. The present crossing lantern of Burgos has been attributed to Simón's student



9-19 Burgos Cathedral, west facade.

⁸⁸ Hugo Kehren makes the point that Burgos emerged from a general southwestern German milieu; the spires of Burgos were not direct copies of a given German building. See *Deutschland in Spanien* (Munich, 1953), 69.



9-20 Toledo Cathedral, west facade and tower.

Juan de Vallejo.⁸⁹ Simón de Colonia's vocabulary synthesized Germanic and local precedents, as can be seen in the famous Constable's chapel that he added to the east end of Burgos in the years around 1500.⁹⁰ As the son of a German father and a Castilian mother, Simón embodied the synthesis of influences that played an important part in the development of Spanish Late Gothic architecture.⁹¹

Toledo

In Toledo, as in Burgos, the appointment of a northern master of works has been associated with completion of a great spire project. Master Hanequin Egas of Brussels was summoned to Toledo by Alvaro de Luna, Constable of Castile and half-brother of Toledo's archbishop Juan de Cerezuela.⁹² The Constable's Chapel erected by

Hanequin in the 1430s was the first structure in Toledo completed in the modern northern Gothic style. By the time Hanequin took over as master of cathedral works in 1443, the square sections of the cathedral's northeast tower were rising. One of his first tasks was to provide this tower with a

⁸⁹ See Marcos Rico Santamaria, *La Catedral de Burgos* (Vitoria, 1985), 199. Juan's grandson Francisco de Colonia may also have been involved with the project.

⁹⁰ This was the chapel of Constable don Pedro de Hernandez de Velasco. Although light shines through its openwork vault today, Wilson explains that this effect is due to the 20th-century glazing of the ceiling (*Gothic Cathedral*, 286).

⁹¹ The claim that Simon's mother was a Spaniard is made in Swaan, *Art and Architecture*, 171. For a more architecturally grounded perspective on the impact of northern builders in Spanish Late Gothic, see, for example, Pablo de la Riestra, "La Catedral de Astorga y sus trazas germanas," in *Actas del Simposio: La Catedral de Astorga* (Astorga, 2001); and Javier Gómez Martínez, *El Gótico español de la edad moderna: Bóvedas de crucería* (Valladolid, 1998).

⁹² Juan de Cerezuela had been the bishop of Seville, where he evidently saw northern masters at work (Wilson, *Gothic Cathedral*, 285). It may have been this familiarity with northern practice that motivated the half-brothers to invite Hanequin to build first the personal chapel, and subsequently the whole church. See Diego Peris Sánchez, ed., *Arquitecturas de Toled*, vol. 1, *Del romano al gótico* ([Toledo], 1991), 458ff.

suitably grand termination. The Toledo spire he built between 1445 and 1452 clearly derives from northern great spire precedents, although a number of its features are unique (fig. 9-20).

At Toledo, as in many northern churches, an octagonal tower drum softens the transition between the squared-off tower below and the spire cone above. Its design is fairly generic, with gabled lancets on each of the octagon's faces and bladed flanges ending in pinnacles on the corners. Four larger pinnacles occupy the corners of the square tower in the usual manner. The northern roots of this design are obvious in a general sense, but overly specific claims about the antecedents for Hanequin's work should be viewed with caution.⁹³

While the octagonal drum of the Toledo tower appears conventional, the spire cone is *sui generis*. Surrounded by three crownlike rings of spikes, it was perhaps meant to evoke a papal tiara; if so, this might be read as a reference to the cathedral's position as metropolitan church of Spain. The faces of the cone are solid, making the composition seem much earthier than the openwork spires of Burgos, an impression heightened by the rough stonework. It has therefore been proposed that Hanequin's design was executed by Castilian masons unfamiliar with northern building methods. There seems little reason to doubt that the spire honors Hanequin's vision, however, and questions about the sources for the design remain. Given the prominence of Flemish painting in the fifteenth century, antecedents should perhaps be sought in painting rather than in architecture, as in the case of Frankfurt am Main.

At Toledo, as at Burgos, the northern master charged with completing the great spire project made perhaps his greatest contribution to Spanish architecture by training younger men in his workshop. While Juan de Colonia's son Simón and grandson Francisco went on to build the Constable's Chapel and crossing tower of Burgos and the church of San Pablo in Valladolid, Hanequin's French-born student Juan Gaus went on to become one of the most important Castilian architects of his day, designing the royal complex of San Juan de los Reyes in Toledo and the

⁹³ Peris Sánchez, for example, suggests that Hanequin's work was influenced by the spire of the Brussels town hall, and the octagonal terminations supposedly planned for the Brussels cathedral of St-Gudule (*Arquitecturas de Toledo*, 458). The Toledo octagon looks nothing like that of the town hall, however, with a different orientation, arrangement of pinnacles, and overall silhouette. Moreover, the town hall spire was not constructed until the 1440s, years after Hanequin had left Brussels for Spain. Also, the towers of St-Gudule appear to have been planned all along with square terminations. Azcárate, meanwhile, proposes a connection between the Toledo tower and the Breton spire known as the Kreisker in Saint-Pol-de-Léon (*Arte Gótico*, 116), even though the two monuments appear entirely dissimilar in their design and conception. Instead of being seen as a copy of these monuments, Hanequin's design for the Toledo octagon should be understood as a workmanlike distillation of the conventional northern great spire formula, as expressed at Freiburg, for example.



9-21 León Cathedral, west facade.

Monastery of Santa Cruz in Segovia, and remodeling the castle of Manzanares el Real.⁹⁴ Such works, as Wilson points out, included "a very large mixture of the fantastic Brabant Florid forms introduced into Spain by the invading army of Low Countries artists responsible for the reredoses and choir stalls commissioned by practically every important church in the fifteenth century."⁹⁵ Having been trained in the northern methods of building and design, men like Simón de Colonia and Juan Gaus were well qualified to apply such forms to full-scale buildings. Their Hispanicized style would not have prevented a northerner like Ulrich von Ensingen from appreciating the line of influence running from his work to theirs through the great spire projects of Burgos and Toledo.

León

Significantly, the only other northern-style spire project in fifteenth-century Spain was that of León Cathedral (fig. 9-21). Like Burgos and Toledo, León had been strongly influenced by French Gothic prototypes in the thirteenth century. This reinforces the general notion that great spires were seen by medieval builders as natural completions of the French-style cathedral package. The designer of the León spire was evidently master Josquin, identified by John Harvey as Joosken of Utrecht but perhaps born in Spain to Flemish immigrant parents.⁹⁶ Active in Toledo and in Tordesillas in the late 1420s and 1430s, Josquin became master of works at León in 1440.⁹⁷ Having completed the square part of the cathedral's southwest facade tower or Tour de Reloj, Josquin turned to the

⁹⁴ Swaan, *Art and Architecture*, 171.

⁹⁵ Wilson, *Gothic Cathedral*, 288.

⁹⁶ John Harvey believes he came directly from the Netherlands. See *The Cathedrals of Spain* (London, 1957), 96. José María Villanueva Lázaro, however, argues that he may have been born in Spain. See *La Ciudad de León: El Gótico* (León, 1986).

⁹⁷ Azcárate, *Arte Gótico*, 127.

construction of its openwork spire in 1458, the same year that the spires of Burgos were completed. Like them, the León spire consists of a simple openwork cone placed directly atop a square tower without a mediating octagonal story. Although probably inspired by the Burgos project, Master Josquin appears to have arrived at the details of his design independently, since the netlike grid of tracery on the sides of the León spire cone differs considerably from the polyfoil forms of Juan de Colonia's tracery.⁹⁸ The ring-like crockets of León are another unusual touch. Most if not all of the León spire was constructed by Josquin's student and successor, Alfonso Ramos, who completed the work in 1472.⁹⁹ He, in turn, trained Juan de Badajoz, who developed medieval Spain's last openwork spire project, that of Oviedo Cathedral.¹⁰⁰

Oviedo

At Oviedo, attention turned to the construction of the cathedral's west facade in 1500, the vaguely French-inspired nave having been completed in 1498.¹⁰¹ At the request of the chapter, the masters of Oviedo, Burgos, and León submitted drawings of their designs for the project, and that of Juan de Badajoz of León was approved. Unfortunately, these designs have not been preserved, but recent scholarship suggests that Juan de Badajoz planned a twin-tower facade for Oviedo. Relatively early in the building process, however, the north tower seems to have been abandoned on economic grounds.¹⁰²

Construction at Oviedo proceeded slowly, in part because a disastrous fire ravaged much of the town and the cathedral in 1521. Juan de Badajoz had died in 1511, but his design appears to have been followed by his successors. The spire of the cathedral was completed in 1551, and a large metal cross was attached to its summit a year later. In 1576, however, lightning damaged the spire so badly that it had to be reconstructed. A new

⁹⁸ This fact does not by itself decisively undercut the revisionist attribution of the León tower to Juan de Colonia, which has been proposed by José Luis Blanco Mozo in "La Torre de la catedral de León: Del maestro Jusquín a Hans de Colonia," *Anuario del Departamento de Historia y Teoría del Arte*, 40 (1999): 29-57. Blanco Mozo's thesis remains controversial, however, in large part because of the clear differences of articulation between the Burgos and León spires.

⁹⁹ The masonry evidence suggests a break in work near the base of the spire, according to Villanueva Lázaro (*La Ciudad de León*).

¹⁰⁰ More correctly, Oviedo was the last of the medieval Spanish openwork spires. Openwork spires were built at the cathedral of Barcelona in the late 19th century, but these were not based on medieval designs.

¹⁰¹ Harvey points out that the nave closely resembles Norman work of the early 15th century (*Cathedrals of Spain*, 140).

¹⁰² The most authoritative source on Oviedo, from which this account has been synthesized, is Francisco de Caso Fernandez, *La Construcción de la Catedral de Oviedo, 1293-1587* (Oviedo, 1981). For this phase of planning, see *ibid.*, 340ff.



9-22 Oviedo Cathedral, west facade.

design for the upper tower was prepared by Rodrigo Gil de Hontañón, one of the greatest Spanish architects of the sixteenth century. Comfortable in both the Gothic and classical vocabularies, Rodrigo designed an octagonal drum encrusted with Renaissance detailing to serve as the base for his openwork spire. Juan de Cercedeo the Younger and Diego Velez completed the rebuilding project in 1587; Rodrigo appears to have provided only the plans.¹⁰³

Oviedo's openwork spire, the last such structure to be completed before the nineteenth century, represents a synthesis of influences from Burgos, Toledo, and León (fig. 9-22). Like the twin spires of Burgos, it has compass-based tracery rather than the simpler netlike forms of León. As at Toledo, a drumlike octagonal story softens the transition between the

square tower and the spire cone. The vertical flanges on the tower face and the odd ringlike crockets on the spire cone recall León. The relation between the present design and the original vision of Juan de Badajoz remains somewhat unclear, however. In particular, it is not known whether the original design called for an octagonal drum story, or whether the spire cone was simply to sit atop the square tower as at Burgos or León. Clearly Rodrigo Gil de Hontañón was responsible for the present version of the drum with its Renaissance detailing, but an analogous transitional story may well have been part of the design from the very beginning, as the elegant taper of the tower suggests. Certainly the overall form of the structure, with its tall bladed tower and relatively short openwork spire, seems to reflect Juan's experience at León.

¹⁰³ Caso Fernandez, *Construcción de Oviedo*, 397-400, 406-7. The structure has required extensive restorations since that time, in part because the stone from which it is constructed is soft and weathers quickly. See Rosa María Esbert and Rosa María Marcos, *Las Piedras de la Cathedral de Oviedo y su deterioración* (Oviedo, 1983).

With their spiky northern appearance, Oviedo's spire and its antecedents in Burgos, Toledo, and León remained anomalous within the architectural culture of later medieval Spain. Far more typical were octagonal chapels, reredos-like facades, and brand-new cathedrals like those of Seville, Salamanca, and Segovia, all executed with a mixture of austerity and lavish detailing that was largely foreign to the designers of great northern spires.¹⁰⁴ Just as the cavernous fourteenth-century churches of Catalonia departed from the French fashion imported in the thirteenth century, so the final phases of Spanish Gothic architecture largely abandoned the Germanic spire type that had been imported in the fifteenth century. Like the earlier experimentation in the French manner, however, this flirtation with the great spire type proved fruitful for later Spanish architecture. The northern masters in charge of these spire projects trained a generation of men who were able to blend modern Germanic influences with local and even Islamic traditions in a potent new synthesis. Above and beyond their intrinsic interest, therefore, Spain's great spire projects deserve study because their story helps explain the country's emergence as a major power in Late Gothic architecture.

England

In England, the place of spires in the architectural scene could hardly have been more different than in Spain. Spires were commonplace. Indeed, Late Gothic spires continue to play an important part in defining the English landscape. Spire design in England remained essentially static from the early fourteenth century on, however, engaging little if at all with the dramatic formal developments for which English Late Gothic architecture is otherwise famous. In particular, England's flourishing tradition of micro-architectural design appears to have exerted no appreciable influence on the design of full-scale spires. Although spire-like Eleanor crosses had dotted the countryside since the late thirteenth century, the late Gothic church spires of England were essentially smaller copies of the colossal but extremely simple pyramids of London, Lincoln, and Salisbury. The great spires of Germany appear to have made no impact on English builders.

¹⁰⁴ It would be incorrect to say that such mixtures were foreign to all northern designers, since many churches in Germany especially had their decoration localized in zones around the altar or in the vaulting patterns, for example. By their very nature, however, great spires tended to be complex throughout.



9-23 Boston, St. Botolph's church, the "Stump."

Demographic and political as well as artistic factors help to explain this separation. English patterns of settlement were not as centralized as those on the continent. Medium-sized towns and villages could not plausibly undertake spire projects that would vie with those of Vienna or Strasbourg. The relative provinciality of such towns made the emulation of large but simple English prototypes on a smaller scale a natural and attractive option. In terms of politics and trade, meanwhile, England was connected more closely to France and Flanders than to the areas of Germany where great spires flourished.¹⁰⁵

The influence of Brabantine great spire design, however, may perhaps be seen in the octagonal lantern erected at Boston in the early sixteenth century, which turned the church tower into both a lighthouse and a symbol of civic pride (fig. 9-23).¹⁰⁶ Unlike most English towers, the Boston example includes an octagonal story crowned with pinnacles. Although far simpler in its details, this overall form recalls the Chalon plan for the larger tower of Mechelen.¹⁰⁷ In both designs, small flying buttresses arranged in four Y's connect the octagonal lantern to the corner pinnacles of the square tower. Lacking a spire and known today as the Boston Stump, the Boston tower provides only a weak exception to the

¹⁰⁵ There were of course close mercantile ties between England and the Hansa cities of the North German coast, but great spires were not built in this region either, as the example of Lübeck demonstrates.

¹⁰⁶ For Boston functioning as a lighthouse, see Green, *Towers and Spires*, 16. Swaan, meanwhile, proposes that "it was the unfortunate appearance of the three-stage composition--together with a touch of the megalomania that had seized tower-builders, particularly in those parts of Northern Europe with which Boston had such close mercantile ties--that prompted the erection in the first quarter of the sixteenth century of yet another stage" (*Art and Architecture*, 42).

¹⁰⁷ Even in its truncated form, the tower stump of Mechelen is 30 feet taller than the Boston lantern.

general rule that England resisted influences from continental great spire design.

Ironically, the English fascination with tower design as a goal in itself may have played a role in preventing the development of an indigenous tradition of great spire design. The boxlike tower terminating in four corner pinnacles became a common and prestigious type, of which the “Bell Harry” crossing tower of Canterbury is perhaps the most famous example (fig. 9-24). Even in the greatest projects, west facades with square-topped towers were acceptable, as the examples of Wells, York, and Beverly demonstrate.¹⁰⁸ Such



9-24 Canterbury Cathedral, “Bell Harry” tower.

facades may have been intended as rejoinders to earlier facades of rival France, like that of Notre-Dame in Paris, but they also harked back to a venerable Anglo-Norman tradition, exemplified by Durham. The emphatically foursquare profile of most English towers tended to prevent integration with the spires above. The faces of English towers often appear to be stretched between the corner buttress clusters, remaining visually separate from the spire. Because English builders rarely added octagonal stories between their square towers and their spires, the separateness of the tower and spire was never seriously challenged.¹⁰⁹

The simple pyramidal form of English spires also worked against integration of the tower and spire zones. Spire cone design in England had

¹⁰⁸ Supposedly Wells was the first English cathedral to be explicitly designed without spires. See John Harvey, “The Building of Wells Cathedral, 1307-1506,” in L. S. Colchester, ed., *Wells Cathedral: A History* (Somerset, 1982), 90.

¹⁰⁹ Several English spires, admittedly, did have octagonal stories, as at St. Mary's church in Wilby, St. Bartholomew's church in Cornwall, and St. Michael's church in Coventry, which was heavily damaged in the Second World War. At St. Patrick's church in Patrington, moreover, a screen of vertical mullions wraps around the spire base. For illustrations of these spires, see Charles Wickes, *Spires and Towers of the Medieval Churches of England*, 2 vols. (London: Weale, 1853-55). These cases, though, provide only weak exceptions to the English tendency to superpose spires directly on square towers. At Coventry, for instance, the octagonal story was so short that it almost disappeared between the far larger square tower and slender spire.



9-25 Louth, church of Saint James.

stagnated since the early fourteenth century, when the huge projects at Lincoln and Salisbury were completed. Countless spires were constructed in England in the later Middle Ages, but their overall form remained conservative. As a result, the junction between the tower and spire remains clearly drawn, even when the designer allowed small flying buttresses to jump from the four corner pinnacles to the spire cone, as at Louth (fig. 9-25). This format, common in England and in English-dominated regions of France, appears to have arisen independent of the main line of continental great spire development. Slender "broach" spires like those of Louth are undeniably elegant, but they lack the quasi-organic geometrical complexity characteristic of the great spire type.

Although most Englishmen would not have seen the great spires of Germany and Brabant with their own eyes, aesthetic volition rather than ignorance of continental prototypes likely proved the most important factor preventing the development of great spires in England.¹¹⁰ As noted in the previous chapter, the blurring of lines between spires and micro-architecture could proceed only so far, and the English may simply have chosen to draw that line more clearly than their fellows on the continent. A parallel desire for clarity may explain the English refusal to make complex elisions

between towers and spires. The Perpendicular style was marked by a certain severity, even in its most lavish manifestations, and its ascendancy from roughly 1350 onwards may have chilled the climate for the three-dimensional geometric play characteristic of great spire design.¹¹¹

¹¹⁰ Wilson suggests awareness of continental "burgher cathedrals" on the part of the parishioners of Saint Mary Redcliffe in Bristol (*Gothic Cathedral*, 216).

¹¹¹ This claim must clearly be made with care. There is certainly a high degree of three-dimensional imagination at work in Perpendicular masterpieces like the vault of the Henry VII chapel at Westminster Abbey, or the tomb canopy of Edward II at Gloucester. For the most part, however, the Perpendicular era seems to have been less friendly to three-dimensional play than the earlier Decorated period.

Alternatively, it might be argued that the unrelatedness of English spires to the towers below them re-enacted on a vertical axis the sense of assemblage evident in the horizontal dimension throughout the history of English Gothic architecture.¹¹² With their sprawling proportions, English cathedrals typically comprised many units laid end to end, and a similar aesthetic may have influenced spire design. For whatever precise reasons, however, English builders proved remarkably indifferent to the great spire type, though they erected many smaller and simpler spires in the later Middle Ages.

Italy

In Italy, the great spire type made few significant inroads. This is not surprising, because great spires, with their complex geometries and surging verticality, exemplified northern Gothic design tendencies that received at best an ambivalent reception in most of Italy.¹¹³ As Marvin Trachtenberg has emphasized, Italian medieval builders remained more interested in historicism and local tradition than in the systematic modernism of northern Gothic design.¹¹⁴ To the limited extent that northern ideas about spire design were accepted in Italy, they were accepted piecemeal, or at small scale. Some Sienese reliquaries of the mid-fourteenth century, for example, echo the gabled octagonal drum forms seen in northern great spire schemes.¹¹⁵

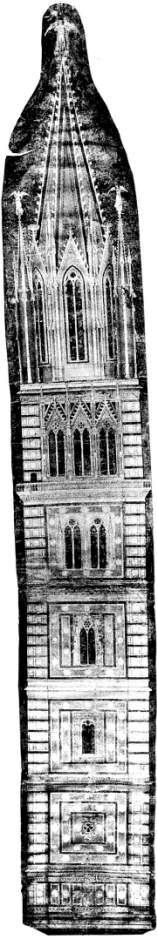
One of the only Italian documents to propose the creation of similar spire forms at full scale is an elevation drawing now preserved in Siena, which shows a slender spired campanile (fig. 9-26). The lower portions of the campanile are articulated as a series of stacked boxes, a format that had enjoyed great popularity in Italy even in the Romanesque era. Here, as in many earlier Italian towers, the window openings in the upper stories are larger than those below, reflecting the overall lightening of the structure as it rises, but the exterior walls remain purely vertical. In a northern Gothic

¹¹² Wilson observes that already by the late 12th century "heterogeneity had become established as the English norm. Complete rebuilding schemes were undertaken only very rarely The English tradition of partial rebuildings allowed innovation to continue untrammelled by any undue regard for overall unity" (*Gothic Cathedral*, 85-86, 191).

¹¹³ It is necessary in this context to distinguish between the present-day borders of Italy, on the one hand, and the cultural and linguistic borders of Italy in the Middle Ages, on the other. It thus makes sense to discuss the openwork spire of Bozen, designed by Burkhardt Engelberg, in the context of Germanic tradition, even though Bozen is today part of Italy, and known to the Italians as Bolzano.

¹¹⁴ See Marvin Trachtenberg, "Gothic/Italian Gothic: Toward a Redefinition," *Journal of the Society of Architectural Historians*, 51 (1992): 261-87.

¹¹⁵ Roland Recht argues on this basis, in fact, that the spire zone of Strasbourg Plan B was drawn only in the mid-14th century, on the basis of contacts with Italy. See *Le Dessin*, 62-63. This suggests the vitality of Italian 14th-century shrine design, even if one rejects Recht's argument in favor of the early dating for the Plan B spire zone proposed in Chapter 5 above.



9-26 Tower plan,
now in Siena.

tower, by contrast, the tapering of salient buttresses would typically express this lightening. Thus, despite the uniform use of pointed arches in the drawing, its lower zone remains closely dependent on venerable Italian traditions. The upper zone of the drawing appears far more modern in conception. Narrow pinnacles rising from the tower corners and surmounted by angel statues flank an octagonal story crowned with crocketed gables and surmounted by a slender crocketed spire. The corner flanges of the octagonal story are shown as Gothic buttresses terminating in compound pinnacles. In a very general sense, this format recalls that seen at Freiburg and Cologne, although the Italian drawing makes no provision for an openwork spire cone. More specifically, and more tantalizingly, both the drawing and the present Freiburg tower include statues of angels atop their main corner pinnacles, an unusual feature seen in few other designs.¹¹⁶

Unfortunately, the precise circumstances of the drawing's creation have never been rigorously established. In view of the close resemblance between its lowermost story and the analogous zone of the cathedral campanile in Florence, it has often been seen as an early study for that tower, and it has sometimes even been attributed to Giotto, who began construction of the tower in 1334, just three years before his death. Given its presence in Siena and its resemblance to Siennese microarchitectural shrines, however, it is also conceivable that the drawing was developed for or in nearby Siena.¹¹⁷ In practice, however, neither the campanile of Florence Cathedral nor that of Siena Cathedral were built in close conformity with the

¹¹⁶ The possible connection between Freiburg and the Italian drawing was first made by R. Blume in "Der Turm des Münsters in Freiburg und der Campanile des Domes in Florenz," *Freiburger Zeitung*, 3 March 1929; see also H. Klotz, "Deutsche und Italienische Baukunst in Trecento," *Mitteilungen des Kunsthistorischen Institutes in Florenz* 12 (1966): 173ff; both cited in Marvin Trachtenberg, *The Campanile of Florence Cathedral: Giotto's Tower* (New York, 1971), 19. Trachtenberg points out that even if Freiburg had been completed by 1320, it would still have been an unusually up-to-date source in the context of Giotto's work (*Campanile*, 45). Statues atop pinnacles would eventually appear at the cathedral of Milan, as noted below, and statues standing free atop buttresses appear in the aisle walls of Siena Cathedral.

¹¹⁷ For a brief discussion of the literature on the drawing, see Ascani, "Le Dessin," in *Recht, Bâtisseurs*, 266-68; also Trachtenberg, *Campanile*, 19, 29-30, and 45.

drawing. The Siena tower at least has corner pinnacles and a squat octagonal roof pyramid, but it lacks the octagonal drum story and slender proportions seen in the drawing; the Florentine tower, for its part, was left square topped. Whatever interest the drawing's creator may have had in northern great spire design was apparently too anomalous in its local context to inspire the long-term support of Florentine and Siennese patrons.

Northern design, and Germanic spire design in particular, proved to be a far more important factor in the workshop of Milan Cathedral than it had in Tuscany. Begun in 1386 under the auspices of Gian Galeazzo Visconti but funded by donations from the citizenry, the Milan Cathedral project looked more frankly to northern prototypes than any other in Italy.¹¹⁸ As is well known, however, the Lombard masters held their ground against northern experts as renowned as Ulrich von Ensingen and as stubborn as Jean Mignot.¹¹⁹ Like the cathedral as a whole, therefore, its crossing tower evolved from an unusual hybridization of influences.

The first northern master to work at Milan was a German named Hans, or Anechino de Alemania, who evidently provided the first model of the cathedral. Because this model does not survive, his vision of the cathedral's towers remains unknown. By 1389 the Frenchman Nicolas de Bonaventure was at work constructing the piers of the crossing, but he was let go because the local builders did not believe that these piers would support the characteristically Lombard lantern tower that they intended to erect.¹²⁰ Initially the lantern was to be square, as a famous plan drawing attributed to Antonio de Vicenza shows.¹²¹ Following the intervention of Hans Niesenberger, Ulrich von Ensingen, and Jean Mignot, however, it was decided to construct an octagonal lantern tower instead.¹²²

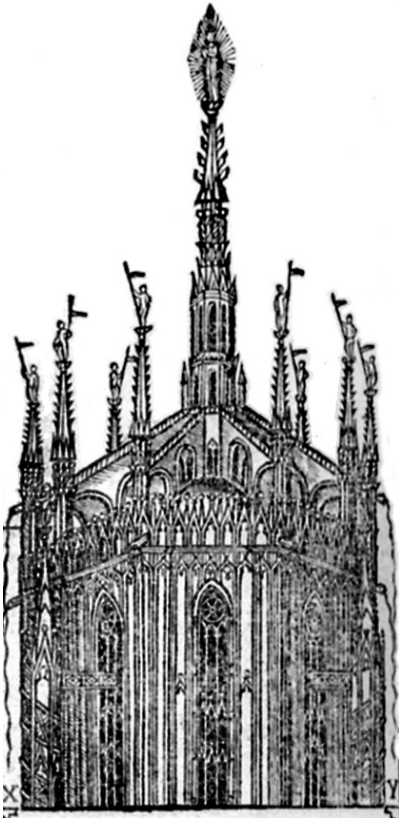
¹¹⁸ Carla Ghisalberti, "Le Chantier de la cathédrale de Milan," in Recht, *Bâtisseurs*, 112-26.

¹¹⁹ See James Ackerman, "Ars Sine Scientia Nihil Est: Gothic Theory of Architecture at the Cathedral of Milan," *Art Bulletin* 31, no. 2 (June 1949): 84-111.

¹²⁰ Ghisalberti, "Le Chantier," in Recht, *Bâtisseurs*, 121.

¹²¹ For this drawing, see Recht, *Bâtisseurs*, 416. For context, see Ghisalberti, "Le Chantier," in *ibid.*, 121.

¹²² It is difficult to say precisely what role each of these northerners may have played in this decision. Hans of Freiburg and Ulrich von Ensingen were first hired in 1390-91, working in what has been considered the first phase of construction. The arrival of Heinrich Parler from Ulm in 1392 marked the beginning of the second phase, but his plans to treat Milan as a scaled-up version of Cologne were quickly rejected. All of these men would have been familiar with the octagonally-planned great spires of Germany. According to Ghisalberti, however, the decision to adopt an octagonal tower play at Milan was not taken until 1399, when Jean Mignot arrived as a consultant. See Ghisalberti, "Le Chantier," in Recht, *Bâtisseurs*, 122-24; and *ibid.*, 416-17. The idea of the square crossing tower did not fully die out even then, however; both square and octagonal variants appear in the 1521 drawings of Milan Cathedral by Cesare Cesariano, of which fig. 9-27 is just one detail. On Cesariano's relationship to the Milan project, see Frankl, *The Gothic*, 280-84.



9-27 Milan Cathedral, crossing tower scheme (16th-c. drawing).

Working out the details of the lantern design was the principal creative task of the Milan workshop in the fifteenth century. Although the project was carried forward by a variety of Italian masters, northern expertise was again called upon in the 1480s. Significantly, the Milanese chose to consult two masters from Strasbourg, Hans Hammer and Conrad Vogt, and one from Freiburg, Hans Niesenberger.¹²³ Clearly the openwork spires of Strasbourg and Freiburg commanded respect in tower-building circles. A drawing made by Cesare Cesariano in 1521 shows the northern flavor of the lantern tower foreseen at that time (fig. 9-27). Sloping skirts of tracery like those seen in the apse of the cathedral link the slender central spire to the octagonal drum of the lantern. Large crockets and a belt of statues in pinnaced niches decorate the spire, and a statue of the virgin atop the spire forms the apex of the whole composition.¹²⁴

The Milan crossing spire was completed only in the nineteenth century, to a design by Francesco Croce (fig. 9-28). With its central spiral staircase and pinnacle, this project vaguely recalls Hans Hammer's designs for the southwest spire of Strasbourg. Like much of the cathedral's exterior, which also dates from the nineteenth century, Croce's crossing spire conveys a satisfying impression of the fifteenth-century builders' intentions. This delay in the completion of Milan meant, however, that no

¹²³ For Hammer and Vogt, see Recht, *Bâtisseurs*, 416-17; for Niesenberger, see Wilson, *Gothic Cathedral*, 236. The Strasbourg Municipal Archives preserve a letter of 1482 from the Milanese duke Sforza to the mayor of Strasbourg, asking for expert help with the construction of the Milanese crossing tower. See Recht, *Bâtisseurs*, 354.

¹²⁴ See Ascani, "Le Dessin," in Recht, *Bâtisseurs*, 260.

great spires as defined in this study were constructed in medieval Italy. This fact must be understood in light of the ambivalent Italian response to the Gothic style as a whole.

Great spires tended to be built by workshops already conversant with the principles of Gothic design developed in thirteenth-century France, as the examples of Burgos, Toledo, and León suggest. England, however, developed a flourishing tradition of Gothic design largely independent of France, and so remained unreceptive to the great spire type. For most Italian workshops, Germanic great spire design was even less relevant. The perfect harmony of such spires with the Rayonnant style meant little in a country where the Rayonnant had never been popular. French builders, conversely, developed a variety of creative responses to the challenges of great spire design in the later Middle Ages.



9-28 Milan Cathedral, crossing tower and spire.