

Chapter 7: Burgher Initiatives in the Southwestern Empire

In both formal and sociological terms, the most direct heirs to the pioneering openwork spire project at Freiburg were the many openwork spire projects undertaken by Ulrich von Ensingen and his successors in the southwestern Empire in the fifteenth century. In major cities such as Ulm, Strasbourg, Basel, and Bern, and in many smaller centers such as Esslingen, the growing wealth and power of the citizenry proclaimed itself through the pursuit of ambitious spire-building schemes, just as it had at Freiburg a century earlier. The scale, visibility, and elegance of the Freiburg spire set a high standard for civic display that other communities in the surrounding region could ill afford to ignore when their social and economic circumstances made spire construction both desirable and practical. For a variety of reasons, including the devastation of the Black Death and the generally disrupted political circumstances on the upper Rhine in the middle and later fourteenth century, in which the conflict between Freiburg and its counts was just one episode, favorable circumstances came together in most of these cities only in the decades around and after 1400. By that time, the elegant but fairly straightforward Rayonnant detailing of the Freiburg spire had become rather outmoded, thanks in large part to the innovative work of the Parlers. The fundamental artistic achievement of Ulrich von Ensingen and his followers, therefore, was to combine up-to-date Parlerian detailing and articulation with the compelling openwork spire format introduced at Freiburg. More broadly, their sophisticated spire projects played an important role in vitalizing the architectural culture of the western Empire, setting the stage for the spread of Germanic design ideas into the rest of Europe. Altogether, therefore, this flourishing of openwork spire construction stands out as one of the most fruitful and significant chapters in the overall history of the Gothic spire-building phenomenon.

Ulm

It was in Ulm that the first and largest of these spire projects was begun. Although the Ulm spire was completed as the world's tallest church spire only in 1890, the abandonment of the project in the late Middle Ages initially reflected structural problems with the tower foundation rather than a failure of social will. Indeed, the history of Ulm in the later Middle Ages beautifully illustrates the central place of church and spire construction in



7-1 Ulm Minster.

the fashioning of civic identity. Politically, the spire was intended to embody the pride and ambition of Ulm's wealthy merchant citizens and of the Swabian league of cities which they led. As at Freiburg, the Ulm spire was planned not as part of a cathedral but as part of a parish church. This fact helps to explain the shared morphology of the two buildings, which referred back to upper-Rhenish Romanesque parish church precedents by including a large western axial tower and two smaller choir towers (fig 7-1). It is also interesting to note that the parish churches of both cities were completed as basilicas rather than as hall churches. In the case of Freiburg, this may be explained by reliance on the precedent of Strasbourg Cathedral, but the case of Ulm suggests that a more complex process was involved. By appropriating the spired basilican format traditionally reserved for the most prestigious cathedrals, the burghers of Ulm announced that they were not mere *nouveau-riches*, but proud inhabitants of a free and unvanquished city with a greatness of its own.

Although Ulm grew to be a great cultural and artistic center in the later Middle Ages, its power was mercantile first and foremost. The city's location near the source of the Danube River favored trade, as the Romans had recognized by founding a *castrum* near the site.¹ Because this *castrum* withered upon the withdrawal of imperial troops in the fourth century, no diocese was established in the area. Burgher power thus grew unchecked in later centuries, while in the larger and more cosmopolitan city of Cologne, the power of the archbishops tended to oppose the autonomy of the citizenry. Thus the very provinciality of Ulm's early history may ironically have set the stage for its later growth. From its foundation until the close of the Middle Ages, Ulm was intimately involved in imperial politics. The development of Ulm *per se* began with the establishment of a Carolingian palace complex, next to which a market soon arose. By order of Charlemagne, the nearby sixth-century church of Saint Mary's Across the Fields was made a dependency of Reichenau Abbey in 813. Throughout the eleventh and twelfth centuries, Ulm grew through fruitful association with first the Salians and then the Hohenstaufen. In 1164 Frederick I Barbarossa granted Ulm its *Stadtrecht*, or civic rights. He also fortified the city with new defensive walls, which were strengthened in the early thirteenth century by Frederick II.

By the time of Frederick II's death in 1250, Ulm had grown beyond the need for imperial patronage. Girded by strong walls, fueled by a growing mercantile economy, and governed by an active town council, Ulm was prepared to chart its own course; in 1274 Ulm became a free imperial city.

¹ See Herbert Pée, *Ulm* (Munich, 1967).

Ulm grew so rapidly in the early fourteenth century that new walls had to be constructed in 1316, which encompassed four times the area of the old city.² In 1321 Ulm joined the first Swabian League of cities, which supported Emperor Ludwig the Bavarian in exchange for their freedom from feudal vassalage. The only significant obstacle to Ulm's continued success was internal conflict between the patricians and the guilds. This occasionally bloody dispute was partially resolved in 1345 by an agreement, mediated by the emperor, in which the rights of the guilds were officially recognized.³

Following the death of Emperor Ludwig in 1347, Ulm and the other cities of the Swabian league came into conflict with the new emperor Charles IV. Charles purchased noble support for his Golden Bull of 1356 largely by upholding the rights of feudal magnates over the cities of the empire. Called upon to support his knightly vassals in their battles against the city league, Charles IV laid siege to Ulm in 1376, only to find his imperial army thrown back from the city's mighty walls. In 1377 the city league won official recognition from the emperor by defeating the forces of his ally the Duke of Württemberg. This conflict formed the political backdrop for the construction of Ulm's great parish church, which was begun in the same year.

The man most directly responsible for the establishment of the new parish church was Lutz Krafft, Ulm's leading citizen and frequent mayor.⁴ Descended from a long line of civic leaders, Krafft was elected to succeed his father as mayor in 1368. Lutz Krafft's policies continued to guide Ulm well after his death in 1397, in part because his many junior lieutenants continued to hold office throughout the first half of the fifteenth century. In all probability Lutz Krafft was the mastermind behind the new city constitution of 1397, which proved so successful that it remained in effect until 1548. This so-called Gross Schwerbrief gave extensive rights to the city's guilds, and has been hailed as one of the first democratic constitutions in Germany.⁵ Krafft worked to establish Ulm as a great power not only by forging a spirit of unity among the citizens but also by liberating the city from external domination. The construction of the new parish church and spire at once contributed to and symbolized this ambitious program.

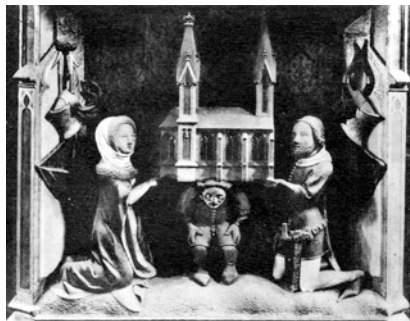
² Braunfels, *Urban Design*, 137.

³ Pée, *Ulm*, 9.

⁴ See Hans Peter Koepf, "Lutz Krafft, der Münstergrunder," in *600 Jahre Ulmer Münster: Festschrift*, ed. Hans Eugen Specker and Reinhard Wortmann (Ulm and Stuttgart, 1977), 9-58.

⁵ See Pée, *Ulm*, 9-10.

Charles IV's siege of Ulm paradoxically offered Lutz Krafft an opportunity to liberate the local church from the dominance of Reichenau Abbey. Prior to the siege, Ulm's citizens had no church to truly call their own. They worshipped outside the city walls at the small sixth-century church of St. Mary's Across the Fields. It seems clear that by the early 1370s Lutz Krafft and his colleagues had begun planning a



7-2 Ulm Minster, donation plaque with Lutz Krafft and church model.

new and larger parish church that would function as a civic monument, even though the Abbey of Reichenau was loath to relinquish control over Ulm's church. The emperor's siege resulted in the destruction of St. Mary's, and thus provided Ulm's government with an ideal pretext for the establishment of a new church within the walls. Although negotiations continued until 1446,⁶ Lutz Krafft's political purpose was largely accomplished when he laid the first stone of the new minster on 30 June 1377. From the moment work began, Ulm's citizens recognized that the parish church symbolized their independence. Money for the construction was raised purely from private donations, with no recourse to the tithe or other taxes.

Ulm Minster as originally foreseen by Lutz Krafft and his colleagues differed substantially from the church as executed. In the first place, the building was begun as a hall church, not a basilica. In addition, the axial western tower was originally intended to be no larger than those flanking the choir. These features may be clearly seen in the relief commemorating the foundation of the building in 1377, which shows Lutz Krafft and his wife beside the proposed church (fig. 7-2).⁷ The first designers of the building, Heinrich I, Michael, and Heinrich II, were members of the famous Parler family of masons, although their place on the Parler family tree remains somewhat unclear.⁸ Similarities of style between the Ulm

⁶ Braunsfels, *Urban Design*, 137.

⁷ In fact, there are two such reliefs, one inside the church and one outside. For more information on their relative chronology, see Koepf, "Lutz Krafft," 10ff.

⁸ See Schock-Werner, "Die Parler," in Legner, *Die Parler*, 3:10. Schock-Werner notes that if the first Heinrich in Ulm was Peter Parler's father, he would have been quite old when work began. Meanwhile, it is not clear whether the Michael from Ulm was Peter's brother, better known for working alongside Peter in Prague. However, it seems clear that it was Ulm's second Heinrich who was summoned to Milan for a brief period in 1391-92 as a consultant.

choir and Peter Parler's work in Prague show that architectural ideas were shared between the Swabian and Bohemian branches of the family. By hiring builders from the same family as the emperor's, the citizens of Ulm perhaps intended to broadcast their power and the official recognition that they had just won from Charles IV. Despite its impressive size, however, the hall church initially planned by the Parlers belonged clearly to a more modest class than the French-inspired cathedrals of Cologne, Strasbourg, and Prague.

Work according to this original design had proceeded for scarcely a decade when Lutz Krafft and his compatriots decided that something more grandiose was called for. A basilican elevation was created by raising the center aisle and slightly lowering the outer ones.⁹ In addition, the equal triad of towers was abandoned in favor of an arrangement with a single monumental western tower that would dwarf the choir towers. These modifications introduced in the years around 1390 make the church more closely resemble a great cathedral, suggesting a new pretension to "patrician taste"¹⁰ on the part of the Ulm city government.

The intended grandiosity of the redesigned building was most likely meant to trumpet Ulm's greatness in the face of continued harassment by local nobles, notably the Duke of Württemberg. The proposed colossal spire would serve this purpose particularly well, since it would visually command much of the surrounding area when completed. Christopher Wilson, for instance, sees the spire project as "not merely an assertion of Ulm's leadership of the Swabian league of towns but a gesture of defiance in the face of the rout the the League's forces by the Duke of Württemberg in 1388."¹¹ In point of fact, this defeat at the Battle of Döffingen marked only a slight setback for the Swabian league, which returned to defeat the nobles in 1395. Ulm in particular continued to enjoy a strong strategic position thanks to its wealth and large population, but the embarrassment of Döffingen must have made the need for a suitably grand civic monument all the more pressing. Like the Apollo moon rocket program six hundred years later, the Ulm tower project should ultimately be seen as an assertion of spiritual, technical, and economic greatness in a challenging political climate.

⁹ As Reinhard Wortmann has shown, the adoption of the basilican elevation took place during the tenure of the Parlers at Ulm, at the end of the 1380s. See "Hallenplan und Basilikabau der Parlerzeit in Ulm," in Specker and Wortmann, *600 Jahre*, 101-25. As completed in the mid-15th century, the nave rises to a height of 42 meters, as tall as Amiens. See Luc Mojon, *Der Münsterbaumeister Matthäus Ensinger: Studien zu seinem Werk* (Bern, 1967), 72-73.

¹⁰ Friedhelm Wilhelm Fischer and J. J. M. Timmers, *Spätgotik: Zwischen Mystik und Reformation* (Baden-Baden, 1971), 87-88.

¹¹ Wilson, *Gothic Cathedral*, 234.

Although the change to a basilican elevation was begun by the Parlers, the man most closely associated with the first campaigns on the Ulm tower was Ulrich von Ensingen, one of the most committed and prolific spire-designers of the Middle Ages. Little is known of Ulrich's early career or the precise reasons why he was chosen to replace the second Heinrich Parler as master of the Ulm workshop. It is clear, however, that his pyrotechnic style and bold vision were ideally suited to the character of the Ulm commission. Evidently a native of the Swabian town of Ensingen, young Ulrich seems to have gained an early familiarity with the architecture of Prague and Bohemia.¹² While still a young man he applied to be master of works at the gigantic cathedral of Milan, testimony both to his own feelings of self-worth and to the high salaries offered in Lombardy. Then, in 1392, he was called to Ulm for a five-year contract. Although the nave of the great parish church had scarcely been begun, Ulrich turned his attention to the design of the great western tower and its spire, the project from which all of his subsequent work evolved. Following a brief visit to Milan in 1394, he was appointed master for life in Ulm in 1397--the same year that the Gross Schwerbrief was signed. Although he would soon move to Strasbourg, Ulrich von Ensingen and his descendants remained in control of the Ulm workshop for nearly a century.

Ulrich's vision of the Ulm tower and spire can be seen both in the lower stories of the tower itself, and from a series of drawings which have been preserved in Ulm, Vienna, and London.¹³ Although Freiburg was clearly the single most important source for the idea of an axial openwork spire, numerous other influences may be seen in Ulrich's work. In general terms, he seems to have been drawn to the verticality and boldness of traditional High Gothic, while at the same time incorporating the virtuoso detailing of his most advanced contemporaries. This approach may be seen in each level of the Ulm tower.

Unlike the front face of Freiburg's tower, which stands one bay in advance of the rest of the church, the front of Ulm's tower belongs to the same plane as the western terminal walls of the side aisles, as at

¹² See Barbara Schock-Werner, "Ulrich d'Ensingen, maître d'oeuvre de la cathédrale de Strasbourg, de l'église paroissiale d'Ulm, et de l'église Notre-Dame d'Esslingen," in Recht, *Bâtisseurs*, 204-8. A more extensive but largely outdated source is A. W. Fr[iedrich] Carstanjen, *Ulrich von Ensingen: Ein Beitrag zur Geschichte der Gotik in Deutschland* (Munich, 1893). The forthcoming dissertation from Dirk Zimmermann, of the Technical University at Berlin, should provide valuable new perspectives on Ulrich's career.

¹³ The most authoritative source on the Ulm drawings is still Karl Friedrich, "Die Risse zum Hauptturm des Ulmer Münsters," *Ulm und Oberschwaben* 36 (1962): 19-38. See also Recht, *Bâtisseurs*, 409-11; Legner, *Die Parler*, 1:326-27; and Koepf, *Gotischen Planrisse*, 17ff.

Reutlingen.¹⁴ Ulrich thus intended to integrate the tower into the space of the nave and aisles, following the same High Gothic vision pursued at Reims and Cologne a century earlier. At the same time, however, he planned a boldly modern entrance vestibule between the tower's western buttresses. With its triple arch, complex vault, and twin free-standing supports, it belongs to the type first developed at Prague cathedral in the 1360s. As at the Vienna Stephansdom, however, the Ulm vestibule is situated between the buttresses of a monumental tower, rather than displaced to the side of the tower as at Prague.¹⁵ At Ulm, the space above the triple arch of the vestibule is occupied by a row of statues whose staggered baseline makes the whole composition appear agitated. The biased placement of the enormous and strongly bladed tower buttresses also contribute to the impression of dynamism so characteristic of Ulrich von Ensingen's work.

The next story of the tower, at the level of the nave clerestory, displays a similar mixture of High Gothic and contemporary references. The influence of the Strasbourg facade manifests itself both in the boldly vertical articulation of the tower buttresses in this story and the use of free-standing tracery "harpstrings" screening the window into the upper nave, the Martinsfenster. The openwork spiral staircases flanking the Martinsfenster, however, reflect Ulrich's knowledge of recent work at Prague and Freiburg.¹⁶ Although completed after Ulrich's death with slightly more attenuated proportions than he had foreseen, the design of this section conforms substantially to his original intention as recorded in drawings.¹⁷

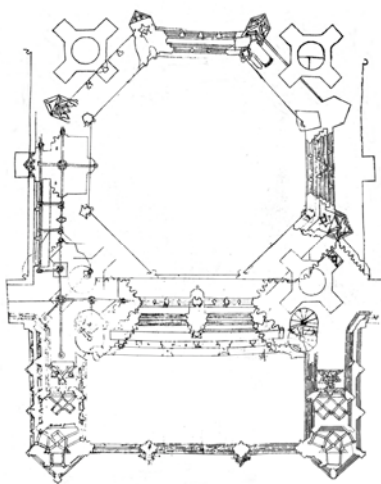
¹⁴ Bruno Grimschitz argued in the 1940s that the tower at Ulm was originally intended to be salient, but he appears to have been misinterpreting one of the plans preserved in Vienna. For this drawing-based critique of Grimschitz's view, see Koepf, *Gotischen Planrisse*, 16.

¹⁵ Marlene Zykan dates the Vienna vestibule to the 1390s, making it dependent on Prague but NOT on the drawings of Ulm that are now preserved in Vienna. These drawings date from the 1450s at the earliest, and so could not have influenced the construction of the Stephansdom. Conversely, Ulrich von Ensingen's close familiarity with the work of the Parler circle and with Prague Cathedral in particular makes it unnecessary to assume Viennese influence at Ulm. See "Baugeschichte des Hochturms," 52.

¹⁶ Many scholars consider Peter Parler's openwork staircase at the south transept of Prague Cathedral to be the source for Ulrich's stair turrets (see, for example, Wilson, *Gothic Cathedral*, 234). Openwork stairs also occur, however, in the tower octagon of Freiburg, which Ulrich von Ensingen clearly knew. The stair motif also appears in Plan B1 for Strasbourg which Recht plausibly dates to the early 14th century (*Bâtisseurs*, 388).

¹⁷ No single surviving drawing adequately depicts Ulrich's design for this story. However, the harpstrings of the Martinsfenster can be seen in one of Ulrich's early plans now in London, and the triple gables above the harpstrings are still visible in the surviving portion of Ulm Plan A. The original proportions of the Martinsfenster story can be read from Moritz Ensinger's Plan B, the lower portions of which appear to be traced from Plan A. See Friedrich, "Risse zum Hauptturm," and Koepf, *Gotischen Planrisse*.

An intriguing plan drawing now in Ulm's Münsterbauamt likely records one of Ulrich von Ensingen's early designs for the tower project up to the level of the spire base, complete with a careful representation of the system of horizontal iron ties and cramps that was meant to insure the tower's structural integrity (fig. 7-3).¹⁸ The Martinsfenster may be discerned even in this early plan, although with intermediate mullions between its "harpstrings." The next level of the tower also appears similar to the structure as built, with triple lancets in each of the two bays on each tower face, although further details are hard to read. At the level of the

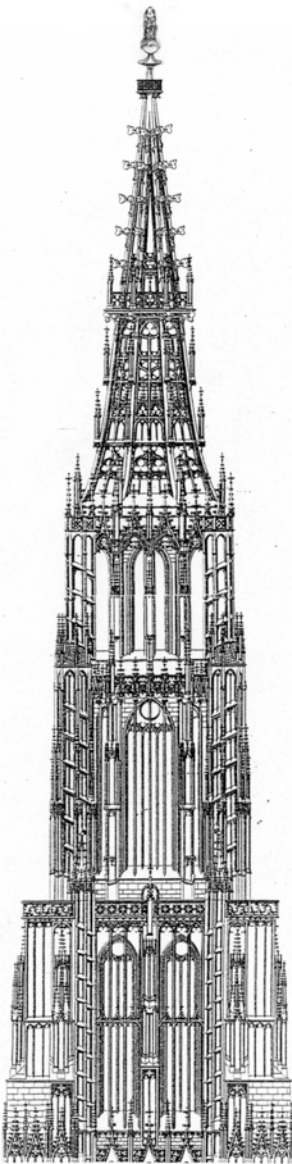


7-3 Ulm Minster, early plan for western tower.

tower octagon four corner turrets are shown as diagonally planted Greek crosses. In this design, the inboard turret flanges intrude awkwardly into the faces of the tower core. This problem may have been recognized as the drawing was executed, since details of the area in question were left incomplete. In his later designs, Ulrich von Ensingen would adopt the more elegant triangle-based geometry of Freiburg, which allows large corner turrets to be built without encroaching on the octagon.

Ulrich's final design for the Ulm tower and spire is known from the surviving upper half of a magnificent elevation drawing now in the Ulm City Archive (fig. 7-4). This so-called Ulm Plan A was surely intended as a presentation drawing, unlike the previously mentioned plan which would have been directed at a technical audience. The self-conscious restlessness of Ulrich's design comes through clearly in the tower story immediately above the Martinsfenster, whose triple gables mark the bottom of the surviving fragment of Plan A. Rather than mark this level by a single unified stringcourse, Ulrich introduces several competing horizontal markers on and between the tower buttresses; similar mannerisms occur earlier both in the Freiburg upper tower and in the closely related Strasbourg lower facade. The twin lancets of the belfry are screened by thin

¹⁸ This is one of the first drawings to explicitly show such a reinforcement scheme. The attribution of the drawing to Ulrich's early tenure as master comes from Friedrich, "Risse zum Hauptturm," 31.



7-4 Ulm Minster, Plan A
(19th c. redrawing).

harpstring mullions, which, characteristically, are offset from the tracery behind. The tower buttresses themselves, articulated as at Strasbourg with slender triple lancets, seem to slam up against the emphatic horizontal of an openwork balustrade. This balustrade clearly forms the dividing line between the upper and lower halves of the structure. Even in his ideal design, therefore, Ulrich von Ensingen chose to recreate the dramatic effect produced at Freiburg by the juxtaposition of the slender upper tower and the squared-off mass of the lower tower base.

Between the balustrade and the spire cone of Plan A, Ulrich planned a two-story octagonal tower flanked by four boldly free-standing openwork stair turrets. In these general terms, Plan A anticipates Ulrich's later design for the north tower of Strasbourg. In Plan A, however, the stair turrets do not continue straight up the entire height of the tower; instead they step inward to hug the tower core at the junction between its two comparably large stories. In the lower of these sections, the elaborately articulated turrets closely resemble those of Strasbourg, and each face of the tower core is veiled by a screen of harpstring mullions, terminating in a row of interlaced ogee arches that can be seen as miniaturized cousins of the large interlaced arch over the transept frontal of Prague Cathedral. In the upper section, the turrets are smaller and simpler, and the tower core lurks behind a cylindrical screen of sixteen gabled lancets. Significantly, the upper stair turrets in Plan A terminate abruptly in square-topped balustrades rather than pinnacled canopies, which would have given the spire a

dramatically punctuated profile when seen on a diagonal. Ulrich von Ensingen's fascination with truncation therefore led him to reject the ideal of seamlessness evident in most earlier great spire design.¹⁹

Ulrich also worked to subvert the rigidity of traditional Rayonnant forms, as his design for the openwork spire cone of Plan A shows. Although clearly based on Cologne and Freiburg, the Plan A spire departs from these examples with its innovative concave profile, sinuous openwork tracery, and complex articulation. A large "crow's nest" observation deck with an elaborate pinnacled balustrade punctuates the spire cone halfway up, as at Reutlingen and Meissen. Below this balustrade, the eight major corner flanges of the spire cone carry pinnacles like candles on an old-fashioned Christmas tree, while the upper flanges are decorated with enormous salient crockets. A large statue of the Virgin Mary standing atop a sphere was meant to crown the whole composition.²⁰

On the whole, Ulrich von Ensingen seems to have had little interest in coherent formal systems such as those developed in Cologne's Plan F. Instead, he used the sheer vertical drive of the spire motif to weld together units that otherwise seem clearly differentiated from each other. If Cologne appears syllogistic and Freiburg elegantly rhetorical, Ulrich's design for Ulm seems like a collage of impassioned sound-bites. Like many Late Gothic masters, Ulrich rejected the gable in favor of the balustrade, thereby minimizing elision between stories. Similarly, Ulrich used pinnacles to emphasize focal points rather than to ease visual transitions. The junction between the spire base and tower octagon is frankly expressed in Plan A, not shrouded in large pinnacles as at Cologne and Vienna. This direct stacking of components lends great clarity to the design. Within these clearly defined modules, however, Ulrich allowed complex and visually ambiguous forms to run rampant. At each level of the tower, for instance, complex tracery screens seem to slide across the surface of essentially cubic stories.

Ulrich's treatment of the spiral stair turrets offers a brilliant example of this compositional technique. On the scale of the entire structure, the turrets read as simple static cylinders. At the same time, however, the helical structure of the staircases within animates each cylinder with

¹⁹ Great spires, like the south spire of Chartres or the west spire of Freiburg, are in this context especially to be distinguished from lesser spires in which the ad hoc addition of a conical spire to a square-topped masonry tower might produce an effect of punctuation almost by accident.

²⁰ This may simply have been because Ulm Minster was dedicated to Mary, but it may also have been a reflection of the ancient iconography of Mary herself AS a tower. Carstanjen's 1893 redrawing includes the full Virgin, but the original drawing is now truncated at the sphere. See Carstanjen, *Ulrich von Ensingen*, inside cover; and Recht, *Bâtisseurs*, 410.

restless energy. The staircase motif also provides a convenient yardstick against which to measure the colossal scale of the whole spire, because the viewer can recognize his own place within the staircase structure. In the mind of a medieval audience, the spiral stair turrets may well have been recognized as representations of Jacob's ladder.²¹ This powerful combination of formal, psychological, and symbolic impact clearly appealed to Ulrich von Ensingen, who made the motif one of the most prominent in his formal vocabulary.

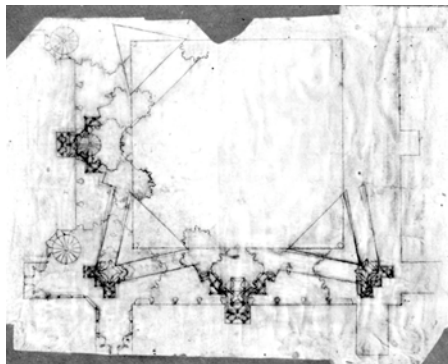
Ulrich's tendency to pile complex units into enormous spires seems to reflect a personal quest to combine the pyrotechnics of Late Gothic detail with the grandeur and vertical drive of the High Gothic. Far more than his thirteenth-century predecessors, however, he viewed spires as goals in themselves. This attitude reflected not so much a sudden rupture with tradition as a slow and steady evolution of architectural priorities in the empire. In Cologne's Plan F, the twin-tower facade had been brought back into scale with the church vessel, at least on paper, but the facade remained very much integrated with the rest of the building. At Strasbourg, the lavish burgher-funded west facade project had already by the turn of the fourteenth century begun to outshine the ambitious Rayonnant nave. At Freiburg fifty years later, the first openwork spire ever completed dwarfed the relatively modest nave. Ulrich von Ensingen's decision to concentrate on the design and construction of great spires rather than church vessels merely took this trend to its logical conclusion. The success of his career proves that many patrons of the day appreciated the value of a committed spire-specialist.

In 1399, not long after he must have completed Plan A, Ulrich was called from Ulm to head the lodge at Strasbourg Cathedral. He returned only rarely to Ulm, leaving his son-in-law Hans Kuhn in charge of the work. At the time of Ulrich's death in 1419, the lowest story of the tower and its porch stood to a height of thirty meters, or just above the lower sill of the Martinsfenster. In the decades that followed, the tower rose only slowly as the rest of the church was completed and furnished. Ulrich von Ensingen probably would have deplored this loss of focus, yet the period 1430-70 witnessed Ulm's great flowering as a center of sculpture and stained glass design. In the Minster itself, Hans Multscher's superb Man of Sorrows and Hans Acker's choir windows stand out as particularly fine examples of this phase of local artistic production. By comparison, the architecture of the minster during these years seems merely workmanlike. A bizarre and

²¹ See Lützel, *Turm*, 41.

highly original alternative plan of the tower may date from this period, however (fig. 7-5).²²

Actual construction of the minster in the early fifteenth century followed slowly and even timidly in Ulrich von Ensingen's footsteps. Between 1419 and 1446 Hans Kuhn and his son Kaspar oversaw construction of the western tower at the level of the Martinsfenster. They honored Ulrich's Plan A in general terms, while slightly increasing



7-5 Ulm Minster, alternative plan of western tower, upper stories.

the story's height and decorative richness.²³ In 1446, the same year that the church of Ulm won official independence from Reichenau Abbey, Ulrich's son Matthäus Ensinger took over as master builder. During his tenure many of the minster's vaults were completed: the choir's in 1449, and those of the north and south nave aisles in 1452 and 1455, respectively. Matthäus also raised the western tower a few more meters, completing the large and ornate row of three gables above the Martinsfenster. Matthäus was succeeded by his son Moritz, under whose direction the nave vault was completed in 1470. The keystones of these vaults stand fully forty-two meters above the pavement, the same height as at Amiens cathedral; the fresco covering the eastern wall of the nave is the largest north of the Alps.²⁴ Despite these generous proportions, however, the Ulm nave makes only a weak impression. The spartan elevations inherited from Freiburg offer little of visual interest, and the blank surfaces of the walls seem to dwarf the clerestory.

²² This fascinating and poorly understood drawing in London's Victoria and Albert Museum clearly deserves further study. Friedrich does not even venture a guess as to its date. Grimschitz believes that it was drawn in 1418 by the young Hans Puchsbaum before his departure for Vienna, but Koepf thinks it must have been the work of a more mature master. See Friedrich, "Risse zum Hauptturm," 32; Grimschitz, *Hanns Puchspaum*; and Koepf, *Gotische Planrisse*, 17. It is hard to imagine that this drawing was seriously advanced for the consideration of the Ulm city council, given the strong constraining force of Ulrich von Ensingen's legacy. Probably it was a pure design study. Intriguingly, the geometry of this plan recurs in the great spire of Mechelen, designed no earlier than 1468 and discussed in chapter 9, below. The connections between German and Brabantine spire design altogether remain lamentably unexplored.

²³ See Mojon, *Münsterbaumeister*, 70ff.

²⁴ Wolfgang Lipp, *Guide to Ulm Cathedral*, trans. John R. Weinlick and Michael Foster (Ulm, 1991), 10.



7-6 Ulm Minster, 19th-century photo showing flanges on wall where flying buttresses would be installed.

Despite the simple and even dull character of the nave interior, there exists clear evidence that Ulrich von Ensingen's vision of a richly Gothicized building remained in effect. Significantly, Moritz Ensinger seems to have planned to construct flying buttresses over the aisles of the nave. The large openwork flyers now visible on the exterior were added only in the nineteenth century, but brackets in the nave walls show that similar struts had been foreseen in the Middle Ages (fig. 7-6). As the stability of the church in the intervening centuries demonstrates,

these flying buttresses were intended principally as decorative rather than structural elements. The decision to erect such arches probably dates from the late fourteenth century, when the basilican elevation and the great tower plan were established by the city council and Ulrich von Ensingen. All of these features were designed to make Ulm's overgrown parish church appear more like a traditional cathedral. The buttress stumps show that Moritz was still trying, albeit with limited success, to realize his grandfather's vision of a boldly "re-Gothicized" architecture.

Moritz Ensinger's plan for the Ulm west tower and spire, the so-called Ulm Plan B, derives clearly from Ulrich von Ensingen's Plan A (fig. 7-7).²⁵ Indeed the lower portions of Plan B seem to have been traced from the lost bottom half of Plan A, since the squat proportions of the Martinsfenster as shown in the drawing had already been modified in the days of Hans and Kaspar Kuhn. The general morphology of Plan B was therefore entirely unoriginal. On the other hand, Moritz Ensinger deserves credit for developing a rich vocabulary of forms that elegantly brings Ulrich's design up to the decorative standard of the late fifteenth century. Plan B incorporates updated tracery screens, a series of interlaced ogee arches along the main tower balustrade, and small round-headed canopies at

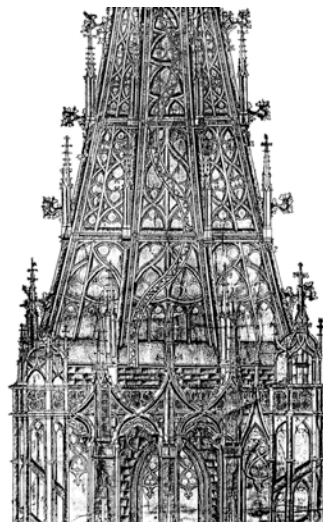
²⁵ Riss B itself has only survived in two fragments: the lower tower is shown in the piece now in London's Victoria and Albert Museum (inv. no. 3547), while a section of the spire cone is shown on the piece now preserved in Ulm's Evangelische Gesamtkirchengemeinde. The entirety of the Plan B design, however, has been preserved in a highly precise 16th-century copy at quarter scale. See Friedrich, "Risse zum Hauptturm," 29-30; and Recht, *Bâtisseurs*, 409-11.

the terminations of the main stair turrets.²⁶ The interlocking crown in place of Plan A's simple "crow's nest" offers particularly strong evidence for Moritz's progressive taste in matters decorative.

Like Laurenz Spinning, who included a similar ogee wreath in his final design for the north spire of the Viennese Stephansdom, Moritz Ensinger apparently kept abreast of the most recent developments in the articulation of micro-architectural shrines. Indeed, Achim Timmermann has recently argued that Moritz Ensinger won his place at the head of the Ulm workshop by designing the Minster's enormous sacrament house, the largest and most extravagant micro-architectural tabernacle built in late medieval Germany (fig. 7-8).²⁷

Involvement in such micro-architectural projects helps to explain the decorative richness of Moritz's Plan B articulation scheme.

If Moritz had simply updated the details of his grandfather's design, his success would probably have been assured. Instead, however, he decided to modify the proportions of Plan A by reducing the scale of the octagonal tower story and reducing the curvature of the spire cone's concave sides. As a result the spire shown in his Plan B would have been substantially shorter than Ulrich's design had promised, and only a hair taller than the north spire of Strasbourg Cathedral, which had been completed in 1439. This turn away from the grandiosity of the original design may have played a role in alienating Ulm's city council. Despite a supposedly lifetime contract, Moritz Ensinger was dismissed from the project in 1476. He worked for a time in Constance, but he died soon after his arrival.²⁸

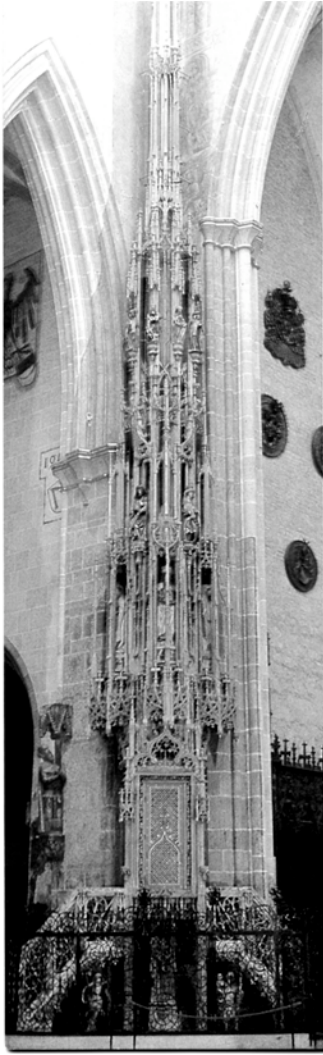


7-7 Ulm Minster, Plan B, detail of spire base.

²⁶ The sinuous line of foliate decoration winding through the central panels of the Plan B spire pyramid may have been intended to represent the helical form of a spiral staircase winding its way up from the spire base to the "crow's nest" observation deck. See Friedrich, "Risse zum Hauptturm," 29-30. Such staircases were later built at the Frauenkirche in Esslingen and, in the 19th century, at Ulm itself.

²⁷ Achim Timmermann, "Staging the Eucharist: Late Gothic Sacrament Houses in Swabia and the Upper Rhine" (Ph.D. diss., Courtauld Institute of Art, University of London, 1996), 100-102.

²⁸ Friedrich, "Risse zum Hauptturm," 32.



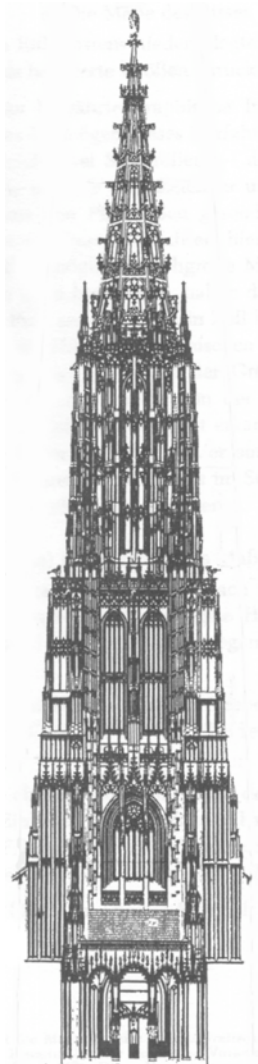
7-8 Ulm Minster, sacrament house.

Moritz Ensinger's place at the head of the Ulm workshop was taken by his assistant Matthäus Böblinger, who had worked alongside his father Hans Böblinger to complete the west tower of Esslingen's Frauenkirche before coming to Ulm. Under Böblinger's leadership, the western tower rose rapidly, growing from forty to seventy meters in height between 1477 and 1494 before problems with the foundation brought construction to a halt. As it turned out, this "temporary" halt would last until 1881. The scale of Ulm's projected spire was such that even this mighty seventy-meter pile reached to less than half of the structure's intended height. Böblinger's vision of the entire spire is known from the so-called Plan C of 1477 which, despite a few small discrepancies, substantially governed the completion of the building in the nineteenth century (fig. 7-9). Although Böblinger adopted many of the florid decorative motifs developed by Moritz Ensinger, his work seems in many respects more akin to that of Ulrich von Ensingen. Whether because of conditions imposed by his patrons or as homage to his famous predecessor, Böblinger designed his spire to rise to precisely the same height that Ulrich had planned in Plan A. Böblinger's use of certain unusual motifs, such as the boldly truncated stair turrets, further underlines his dependence on Ulrich's work in general and on Plan A in particular. This is not to say that Böblinger lacked original ideas.

While Moritz Ensinger had concerned himself mostly with the redecoration of his grandfather's design--the fateful change of proportions notwithstanding--Böblinger reinterpreted the Ulm spire as a whole.

In its general outlines Böblinger's design appears more concise than Ulrich's Plan A, possibly reflecting the influence of Ulrich's later work on the north tower of Strasbourg cathedral. The stair turrets in Böblinger's Plan C rise in one straight thrust, as at Strasbourg, while the octagonal tower core is treated as a single tall and elegant story, rather than two as in Ulrich's designs.²⁹ Böblinger, like Ulrich, assembled his spire from largely self-contained units such as stair turrets, but he put a greater premium on simplicity and clarity of outline than did the earlier master. This may also be seen in the design of his spire cone, which has straight rather than concave sides.³⁰ Similarly, Böblinger chose to submerge the corner buttresses of the upper tower core within its overall octagonal form, rather than expressing them as salient bladed flanges.

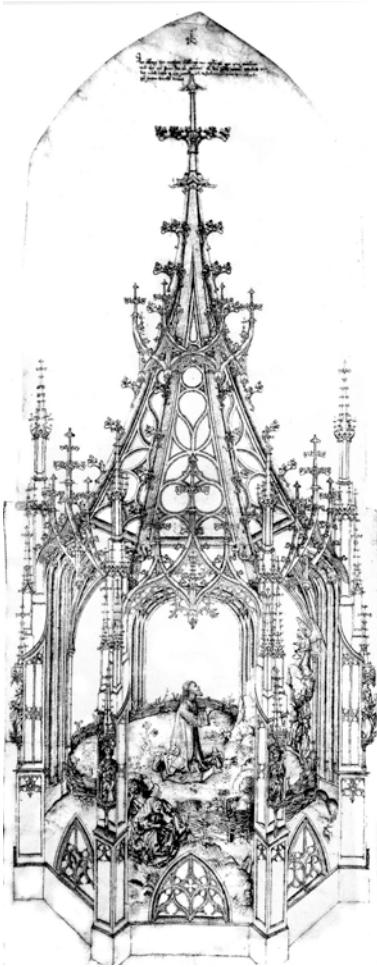
Despite the concise and almost puritanical clarity of its overall outline, Plan C conveys an impression of great richness because of Böblinger's lavish use of decorative detail. Böblinger enthusiastically adopted the florid forms developed by Moritz Ensinger in Plan B, but he deployed them to very different effect. In Plan B, for example, Moritz had used a single crown of interlaced ogee arches as a visual climax near the top of his spire, a usage Böblinger quoted in his famous drawing of the Mount of Olives as an outdoor tabernacle shrine (fig. 7-10). In Plan C, however, interlaced crowns of this type wrap the spire cone at every level. They thus lose their individuality through repetition, and become merely another element in the elaborate texturing of the spire cone, like the crockets and panel tracery. The overall



7-9 Ulm Minster, Plan C (redrawing).

²⁹ To compensate for the fact that his single octagonal tower story would be slightly shorter than the stack of two more squat stories foreseen by Ulrich, Böblinger increased the height of the lower square portions of the tower. See Friedrich, "Risse zum Hauptturm," 38.

³⁰ This trend is already visible in Moritz's Plan B.



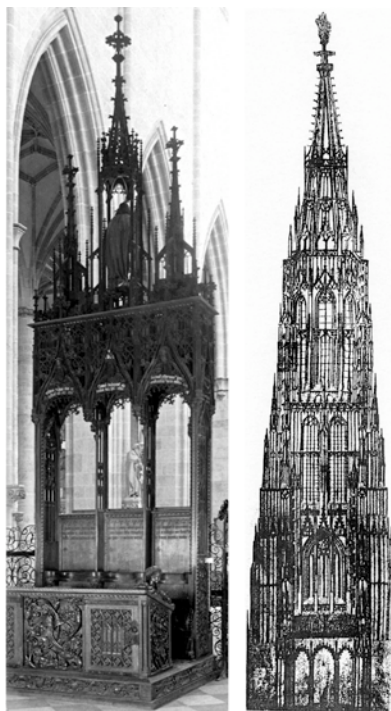
7-10 Ulm, Mount of Olives shrine, drawing by Matthäus Böblinger.

impression of Plan C therefore becomes more systematic and less lyrical than the earlier spire designs of the Ensingers.

Böblinger's rich vocabulary of decorative forms cannot be explained simply in terms of borrowings from the Ensingers. The flickering flamelike forms of tracery in Plan C, in particular, suggest dialog between Böblinger and Jörg Syrlin the Elder, the master joiner responsible for Ulm's magnificent choir stalls (fig. 7-11). Like the great spire project itself, these choir stalls played an important part in the self-definition of the community, reflecting ambition more than functionalism.³¹ These choir stalls had been carved by Jörg Syrlin the Elder and his assistants between 1468 and 1474, and would just have been completed when Matthäus Böblinger took over as master mason. The round-headed arches and flickering tracery panels of these choir stalls therefore could well have influenced Böblinger's choice of surface articulation in his Plan C. Perhaps Böblinger even chose these patterns deliberately to reinforce the connection between the external form of the building and its contents.

³¹ One may well wonder, in Braunfels's words, "How does a set of choir stalls with eighty-nine places fit into a church with only one parish priest, two vicars, and an unspecified number of chaplains? The idea was to unite all the clergy of the city into a community of worship, and furthermore, to give the minster the appearance of a cathedral. The importance of the city's center of religious life was to be made evident. The minster proclaimed the highest aspirations of its time, as did, among other things, the choir stalls within it." *Urban Design*, 139.

After a dispute between Böblinger and Ulm's city council in 1482, Jörg Syrlin himself offered up a drawing of the spire (fig. 7-12). In this so-called Plan D, details of Böblinger's design are modified to achieve a more streamlined overall profile. Syrlin planned, for example, to soften the bold horizontal of the main tower balustrade by cladding the tower corners in a forest of pinnacles. By reinstating the two-tiered stair turrets of Plan A, Syrlin nudged the tower profile further in below the base of the spire cone. The articulation of the spire cone itself is greatly simplified, returning to the pinnacles-and-croquets scheme of Plan A. With its relatively small croquets, airy appearance, and crisp ogee-arch articulation, however, the spire of Plan D captures the mood of Syrlin's own choir stall canopies. Despite its visual interest, Syrlin's drawing was not



7-11 & 7-12 Ulm Minster, choir stall canopies (left) and Plan D for the western tower (right).

so much a finished design as an elaborate sketch. In his study of the Ulm tower drawings, Karl Friedrich argues that the Ulm city council never took Plan D seriously, and that it was grouped with the other designs only as a courtesy to Syrlin, who had served the town so well as a joiner.³² In fact, Syrlin's experience in woodworking would hardly have prepared him to direct construction of a colossal spire in stone, as the council must have realized. Such a project demanded the skills of a trained master builder like Böblinger, with whom the city council wisely re-established cordial relations.³³

³² Freidrich, for his part, believes that Syrlin could not have even drawn Plan D without the assistance of Matthäus Böblinger, who would not have considered him a serious rival ("Risse zum Hauptturm," 37).

³³ The line between architectural and micro-architectural practice, admittedly, was not strict. Moritz Ensinger probably designed the Ulm sacrament house as well as the Minster's vaults, and Matthäus Böblinger designed the small Mount of Olives shrine as well as the Minster's tower. Syrlin, although trained as a joiner, in 1482 designed the stone fountain

In the late 1480s, Ulm seemed poised for another phase of brilliant cultural and political leadership. A spire destined to be the world's largest was growing rapidly under the skilled guidance of Matthäus Böblinger. Although Ulm had lost its edge as a center of stained glass manufacture, the city's sculptors and carvers enjoyed an unsurpassed reputation, thanks to masters like Jörg Syrlin father and son, and Michel Erhart. The economy continued to thrive, and the moribund Swabian league of cities was reformed, achieving a great success in the rescue of the future Emperor Maximilian I, who had been taken captive in the Netherlands. For Ulm's propagandists and planners, the future must have appeared bright indeed.

In 1493, however, the discovery of rapidly spreading cracks in the minster's tower struck a troubling blow at the city's most important monument. Loosened stones began to fall off the structure. Matthäus Böblinger, who had guaranteed the tower's continued integrity, was summarily dismissed. A panel of twenty-eight outside experts was called in as consultants. One member of the panel, Burkhard Engelberg of Augsburg, soon emerged as the dominant personality, taking over as master of the workshop in 1494.³⁴ Over the course of his tenure, which lasted until 1512, Engelberg successfully consolidated the minster's structure, significantly modifying its spatial format in the process. In the first place, he subdivided the building's enormous side aisles with rows of narrow cylindrical columns and constructed new star-vaults above them, since the originals had been damaged by the tower's motion. In addition, he substantially reinforced the tower piers, effectively building a partition wall between the bay under the tower and the rest of the nave. Although the modified aisles are perhaps the most striking features of the building's interior, these measures disrupted the unified spatial flow that Ulrich von Ensingen had sought a century earlier.

Ultimately, it was Ulrich von Ensingen and not Matthäus Böblinger who was responsible for the tower emergency of 1493. Ulrich's enthusiasm for spire design was not matched by a similar attention to foundation design.

structure known as the Fischkasten that now stands in Ulm's market square. It should not be inferred from this, however, that all sculptors and stonecarvers would have been trained as builders. Professional culture in late 15th-century Ulm remained largely medieval, and the Renaissance notion that an architect might have gained his training as a goldsmith or locksmith would have probably seemed foreign, as well as contrary to good sense. The joiners of Ulm belonged to the guild of carpenters, not of masons. For more on Ulm guild regulations, see Michael Baxandall, *The Limewood Sculptors of Renaissance Germany, 1475-1525: Images and Circumstances* (New Haven, 1980), 106-16.

³⁴ On Engelberg and his work, see, Franz Bischoff, *Burkhard Engelberg. "Der vilkumstreiche Architector und der Statt Augsburg Wercke Meister": Burkhard Engelberg und die süddeutsche Architektur um 1500* (Augsburg, 1999).

He thereby condemned his own grandiose vision to failure, at least until nineteenth-century builders returned to the Ulm spire project with their more advanced technologies and engineering methods. Ulrich's failure to provide an adequate foundation for the Ulm tower is all the more disappointing because firm bedrock sits only three meters below the site.³⁵ There was no need to build an elaborate foundation pad like the one so lovingly constructed at Cologne at the turn of the fourteenth century.

In a sense, however, Ulrich von Ensingen was not playing in the same league as the designers of Cologne Cathedral. Cologne Cathedral was from its very inception intended to be the most magnificent building in Europe, and the workers involved in its construction were exceptionally thorough. Many of them had been trained in the sophisticated French tradition of cathedral construction and stone cutting. This experience was crucial because, in a period with no analytical understanding of structural forces, the only adequate preparation for building large churches was building other large churches. Because Ulrich von Ensingen lived in an era when drawing had already substantially supplanted workshop practice as a tool of design and medium for the transmission of ideas, he was able to design the world's tallest structure on paper, even though his previous experiences as a builder had not fully prepared him for the challenges of its construction. The foundation and internal supports built by his workshop were therefore too weak for their role, and it is only thanks to the efforts of Burkhard Engelberg and teams of nineteenth- and twentieth-century engineers that these reinforced structures now succeed in carrying the world's tallest church spire.

Ultimately, social as well as technical factors contributed to delaying the realization of this magnificent vision. Ulm's economy finally began to decline after centuries of prosperity. Work on the minster lapsed after Engelberg's death in 1512. The Reformation came to the city in the third decade of the sixteenth century, represented most notably by the preacher Konrad Sam, who railed against the extravagance of the city's church and its furnishings. On 20 July 1531, an iconoclastic riot destroyed many of the church's priceless treasures, including no less than sixty altars, although the choir stalls, tabernacle, and recently completed pulpit canopy by Jörg Syrlin the Younger were spared.³⁶ The city's favorable period for great spire construction had clearly passed. In 1543, as soon as a tentlike wooden roof was erected to protect the stump of the tower from the

³⁵ See Karl Friedrich, "Die konstruktiven Sicherungen am Hauptturm des Ulmer Münsters (1927-1934), mit einem Beitrag zu den Fundamenten Ulrichs von Ensingen," in Specker and Wortman, *600 Jahre*, 525.

³⁶ Lipp, *Guide*, 15.

elements, construction activity on the minster was terminated by decree of the city council.³⁷ It would not resume until 1844.

Taken together, the story of Ulm minster provides a remarkably vivid illustration in microcosm of the medieval spire phenomenon as a whole. Although a project of its singular scale cannot be called typical, the forces that shaped its history affected many other smaller efforts similarly. As at Freiburg, the Ulm spire project was supported by a citizen government intent on displaying its wealth and power in the face of a hostile nobility. As at Freiburg also, the Ulm spire was the crowning glory of a basilican parish church with architectural pretensions to cathedral status. The decision to erect a single magnificent western spire rather than a two-tower cathedral-style facade may have been intended initially to acknowledge a difference of ecclesiastical rank, although wildly ambitious designers such as Ulrich von Ensingen certainly would not have seen their buildings as second-rate. For over a century, the patrons of Ulm minster remained committed to the idea of their great spire, despite the need to complete and furnish the rest of the church. The project was halted initially not by a failure of will but by structural failure, as the building of any similarly unprecedented late medieval structure might be. Long before these technical problems arose, though, the Ulm spire project had exercised a decisive impact on the architectural culture of Swabia and the Upper Rhine. By 1399, Ulrich von Ensingen had already been called to Strasbourg, where he would add dramatically to the great cathedral facade that had been begun more than a century before.

Strasbourg after 1350

By the middle of the fourteenth century, the first great wave of facade construction at Strasbourg Cathedral had ground to a halt. Three principal factors had contributed to this slowdown: the involvement of the city government in other large building projects; the strife between the city's governing oligarchy and the disenfranchised guilds, culminating in the urban revolutions of 1332 and 1349; and the essentially complete indifference of Strasbourg's wealthy churchmen to the facade project. Even in this troubled period, however, the Strasbourg Cathedral workshop managed to remain on the cutting edge of Gothic design, as shown by the construction of the remarkable Saint Catherine Chapel in the early 1340s. The driving force behind the chapel's establishment was Bishop Berthold von Bucheck, who, despite his disinterest in the burgher-dominated facade scheme, wanted to create an impressive personal monument to his

³⁷ Pée, *Ulm*, 14.

episcopate.³⁸ When the second great wave of facade construction began following the popular revolution of 1349, the burgher fabric administrators turned to the same Master Gerlach responsible for the design of the bishop's chapel.³⁹ It is therefore appropriate to briefly discuss the architecture of the Saint Catherine Chapel before considering the application of its themes to the facade project.



7-13 Strasbourg Cathedral, upper wall of Saint Catherine Chapel.

The Saint Catherine Chapel nestles into the junction between the south nave aisle and west transept wall of Strasbourg Cathedral. From the exterior it appears conventional at first glance, its simple boxlike form articulated with slender buttresses and gables not unlike those developed a few decades earlier by Cologne Cathedral's master Arnold (fig. 7-13). With its quicker visual rhythms and drier overall mood, however, the chapel appears more closely related to the lower stages of the Strasbourg Cathedral facade. In fact, the chapel's window lancets adopt the same extremely attenuated proportions as the blind tracery panels of the facade. The most interesting aspect of the chapel exterior, and the visual clue to the spatial arrangement of the interior, is the syncopated rhythm of the fenestration: across the south face of the chapel the number of lancets in each window goes as 2,3,2,2,3,2. This arrangement stems from the geometry of original chapel vaults, which were among the first star vaults constructed on the region.⁴⁰

Within each of the chapel's square bays, Master Gerlach constructed an octagonal vault canopy. In order to provide vertical support at each corner of these octagons, he erected two narrow columns within the space of the chapel, as well as a series of perimeter buttresses which would not have been necessary with conventional quadripartite vaulting. These additional buttresses give the chapel exterior its quick visual rhythm. The three-lancet windows occur where the sides of the octagons coincide with the chapel

³⁸ Indeed, because he intended to make the chapel site of his own elaborate tomb, he declared new prebends to support its rapid construction. Recht, *L'Alsace gothique*, 67.

³⁹ Recht, *L'Alsace gothique*, 66ff.

⁴⁰ See Nussbaum and Lepsky, *Gotische Gewölbe*, 224. For a set of plans comparing these vaults to those of English chapter houses and drawings from Villard de Honnecourt, see Wilson, *Gothic Cathedral*, 229.

perimeter, while the two-lancet windows correspond to the "leftover" corner spaces. The elegance of the chapel made Master Gerlach the obvious choice to direct work on the cathedral facade when construction resumed following the troubles of 1349.

Master Gerlach's involvement with both the chapel and the facade should not obscure the divergent purposes of the two projects: while the Saint Catherine Chapel had been constructed largely as a personal monument to Bishop Berthold, the cathedral facade had effectively become the collective property of Strasbourg's citizenry. Indeed, Kraus notes that by 1350, "church representatives were no longer even allowed to sit in on fabric meetings, so alien had they grown to its activities."⁴¹ While the much-romanticized twelfth-century "cult of carts" has been presented as a manifestation of humble piety, the better documented but equally extraordinary levels of burgher donation to the Strasbourg fabric fund seem instead to reflect civic pride. Construction of the cathedral facade was destined to become the outstanding collective enterprise of Strasbourg's wealthy citizenry in the later Middle Ages. Ecclesiastical interests were pushed aside by a city government eager to proceed with the construction of the cathedral as a civic monument. An attempt by Bishop Friedrich von Blankenheim to regain some control over the lucrative fabric fund ended in 1394 after a confrontation with the well-armed and well-organized citizens. The Rat outlawed gifts to the Dominicans in 1394, helping to make the facade project the main beneficiary of burgher donations. The decision to emphasize construction of the cathedral facade "was hardly accidental but was fostered by a simultaneous and vast upswelling of appreciation and love for the beautiful cathedral. . . . There must have been the feeling at Strasbourg that can only be called forth by something in whose making one has shared."⁴²

In 1349, at the beginning of this wave of communal endeavor, the cathedral still had no towers. The stump of the facade, with its superb skin of free-standing tracery, stood to the top level of the rose window. Master Gerlach then began to erect towers closely related to his Saint Catherine Chapel, with the 2-3-2 lancet rhythm appropriate to his characteristic octagonal star vaults (fig. 7-14). The structural supports in these towers are cleverly disguised behind the wall plane, stepping back into the dark space screened by the mullions of the lancet tracery. It remains unclear whether he originally intended to crown these towers with spires, because no

⁴¹ Kraus, *Gold was the Mortar*, 128.

⁴² Kraus, *Gold was the Mortar*, 129.

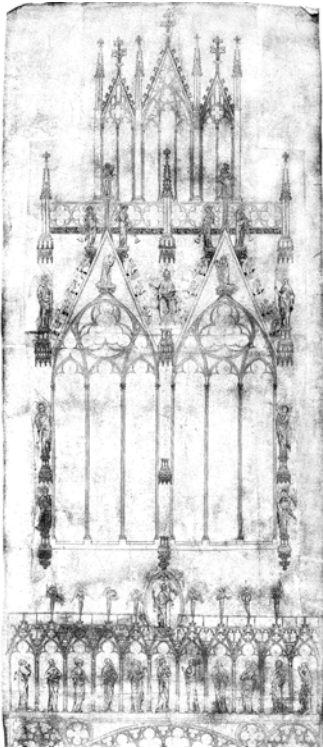


7-14 Strasbourg Cathedral, west facade, upper portions of towers with belfry story above rose window.

drawings of the completed facade survive from his tenure.⁴³ Large spired towers had been foreseen in Strasbourg Plan B and B1, but these drawings had ceased to govern work on the building early in the fourteenth century. It is therefore conceivable that Gerlach meant simply to erect two square-topped towers, giving the Strasbourg facade the appearance of an updated Notre-Dame de Paris. By the time both towers were completed in 1365, however, this traditional format had been superseded by a new vision in which the towers would be joined with a large belfry to form a single clifflike mass.

The adoption of the belfry scheme can be clearly traced in the masonry of the towers. Although begun later, the south tower was completed first, with all four sides carefully finished as though they would be exposed to public view. On the north tower, however, the decorative details on the face now obscured by the belfry were eliminated halfway up. This strongly suggests that the belfry project was conceived during a pause in the construction of the north tower. Although the star vaults of the towers conform to Gerlach's design, it seems unlikely that he developed the belfry

⁴³ The syncopation of the tower supports for the octagonal vaults lends itself well, both visually and structurally, to the construction of tall octagonal structures above. By itself, this does not guarantee that Gerlach planned to build spires, but the strength of the tower supports suggests that Gerlach expected towers or spires to be added to the facade eventually.



7-15 Strasbourg Cathedral,
Plan C, detail of belfry story.

scheme himself. He would have been an old man by 1365, and the insertion of the belfry grossly alters the two-tower morphology that he had embraced.

The earliest known representation of the belfry project happens to be one of the most spectacular architectural drawings of the Middle Ages, although it could hardly be more different than Strasbourg's own Plan B or Cologne's Plan F. This belfry drawing, known as Plan C, shows a vertical slice of the Strasbourg facade only as wide as the central nave vessel from ground level to the top of the belfry (fig. 7-15). In addition to the usual depictions of statue niches and other architectural ornament, the drawing includes beautiful color renderings of the statues in their niches.⁴⁴ The style of these figures suggests close links with Bohemian manuscript illumination of the 1370s, a date usually considered viable for the Strasbourg drawing as well.

The belfry as shown in this Plan C differs in several respects from the belfry as executed. Most crucially, it would not have reached to the full height of the twin towers. A small shrine resembling a tiny copy of the Saint Catherine chapel would have perched atop the belfry. Thus, the upper margin of the facade would have been uneven and syncopated, leaving some vestige of the traditional two-tower format. The actual belfry, however, rises to the same height as the towers, with which it is linked by the bold horizontal of a terminal balustrade. This gives the facade as a whole the appearance of a single clifflike mass, or Wandfassade.⁴⁵ This scheme was probably

⁴⁴ It is unclear whether the artist of the figures is the same draftsman responsible for the architectural framework. See Recht, *Bâtisseurs*, 393-97.

⁴⁵ Schock-Werner believes that the Wandfassade idea predates Michael's arrival at Strasbourg ("Die Parler," in Legner, *Die Parler*, 3:9); Recht, on the other hand, believes that it was Michael who was responsible for adding the last small part of the belfry story, bringing its upper margin into line with the tops of Gerlach's towers (*L'Alsace gothique*, 76, 80). Because this final step erases the vestigial idea of the two-tower format, Michael may deserve credit for the Wandfassade idea after all.

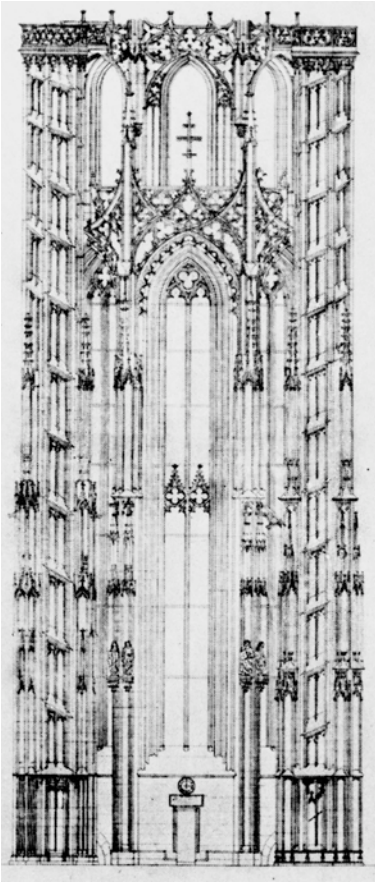
developed by Michael Parler, under whose direction the belfry was completed between 1383 and 1388.⁴⁶

It has been suggested that the belfry was intended to support a single large axial tower and spire, like those of Freiburg and Ulm.⁴⁷ This seems wildly unlikely. In the first place, the builders of most full-fledged cathedrals would probably have preferred to avoid the axial tower format typical of mere parish churches, although the burgher control of the Strasbourg project muddies the waters somewhat. More tellingly, as Plan C makes clear, the belfry project was conceived initially with only a small shrine as termination. Finally, the belfry was constructed with no structural provision to carry the heavy load of a spire. Although it appears at first glance to be integrated with Master Gerlach's towers, in fact there are continuous air gaps separating the upper half of the belfry and the older adjacent masonry. The upper balustrade forms the only physical bridge between these structures. If an axial spire had been seriously contemplated, the stones of the belfry would have been keyed into the reinforced piers of the towers all the way up.

Although Strasbourg's builders rejected the axial tower format, other aspects of the Freiburg and spire projects did influence the evolution of the cathedral's facade. In the first place, the successful realization of the openwork spire scheme at Freiburg had dramatically raised the standard against which other spires would be judged. The builders of Strasbourg cathedral could hardly afford to ignore this precedent, especially since Freiburg had formerly been dependent upon the Strasbourg workshop; only seventy kilometers separate the two cities. Similarly, the scale and grandeur of the spire planned for Ulm by Ulrich von Ensingen threatened to eclipse even the mighty cliff of the Strasbourg facade. Both cases illustrate the shifting balance of patronage within the Empire, as the parish churches of wealthy free cities came to rival even the greatest cathedrals. Buoyed by their own thriving mercantile economy, the burgher fabric administrators of Strasbourg responded to these challenges in the most direct possible way: they hired Ulrich von Ensingen away from Ulm.

⁴⁶ Other discrepancies between the actual building and Plan C include the increase from three lancets to four in each the belfry's two bays, and the related elimination of the large trefoil rosettes in the major lancets.

⁴⁷ Wim Swaan speaks of "the cliff of masonry linking the third stages of the towers, intended to carry a single, centrally placed tower, as shown on Master Michael Parler's ink drawing on parchment of c. 1385, preserved in the Musée de l'Oeuvre Notre Dame" (*Art and Architecture*, 141-42). In *Gothic Cathedral* (New York, 1984), 165, Swaan further claims that "the magnificent drawing . . . shows a single central tower in the German manner." The rose shown, however, comes from Plan C, which shows the belfry but certainly NOT a central tower or spire.



7-16 Strasbourg Cathedral,
elevation of north tower.

Ulrich von Ensingen must have relished his appointment at Strasbourg. He rarely left the city between his appointment in 1399 and his death in 1419. His lifetime appointment as master of the Empire's greatest cathedral workshop brought not only prestige, but also the opportunity to indulge his great love of height. At Ulm, Ulrich had been able to construct only the lowest stories of the tower porch and foundations, but at Strasbourg he was able to construct the upper extension of the north tower, since the facade had already reached a considerable height. By the time of his death this superb pile reached nearly to the base of the spire cone.

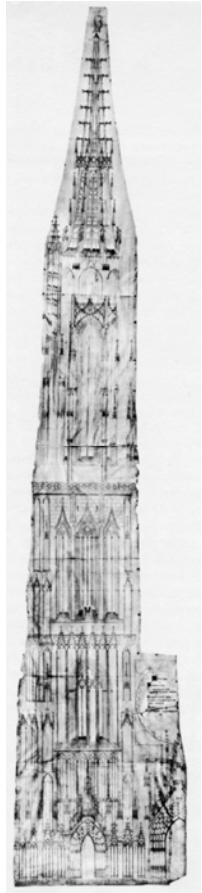
In the north tower of Strasbourg, Ulrich von Ensingen further developed many of the themes explored in Ulm Plan A. Once again openwork stair turrets flank the corners of a slender two-story octagonal tower core, and once again bladed flanges, interlacing arches, and complex pinnacles conspire to make the hefty structure seem weightless and energized (fig. 7-16). It also appears that Ulrich meant to crown

this tower with a concave spire cone very similar to the one shown in Plan A, at least if a drawing probably made by his son Matthäus Ensinger and currently preserved in Bern may be taken as evidence of the father's intention as well (fig. 7-17).⁴⁸ There are, however, significant differences

⁴⁸ Recht, *Bâtisseurs*, 402-3. Since the spire of the Bern Plan terminates in a statue of Virgin Mary, to whom Strasbourg Cathedral was dedicated, Marc Schurr suggests that the famous statue of Ulrich von Ensingen gazing upwards from the Strasbourg tower platform was meant to be worshipping the Virgin rather than admiring his own architectural handiwork. See "Die Architektur der Esslinger Frauenkirche: Form und Funktion im Mittelalter," in Ulrich Knapp, Karin Reichardt, and Marc Carel Schurr, *Die Esslinger Frauenkirche*:

between the Ulm and Strasbourg designs. Some of these, notably the slimmer proportions of the Strasbourg tower, simply reflect the exigencies of building on a smaller facade than Ulm's purpose-built tower platform. Others, though, seem to reflect the evolution of Ulrich's taste and formal vocabulary.

Generally speaking, the Strasbourg tower appears more streamlined and more boldly sculptural than the earlier Ulm Plan A design. By carrying the corner stair turrets to their full height without interruption, and letting the first story of the tower grow tall and slender at the expense of the second, Ulrich enhanced the verticality of the composition.⁴⁹ These slender proportions, combined with the elimination of flat tracery screens, make the Strasbourg tower appear like a cluster of vertical supports. Complex and deeply undercut archivolt moldings run up the interiors of these supports uninterrupted by capitals, while bladed flanges and slender pinnacles articulate the exteriors. At the junction of the two tower stories Ulrich amplified the interlaced ogee motif to colossal scale, further contributing to the richly sculptural appearance of the tower. It was probably this conspicuous use of interlaced arches that inspired later builders in Brabant to adopt the motif as a central element of their "Florid Style."⁵⁰ Generally considered one of the greatest masterpieces of Late Gothic architecture, Ulrich's Strasbourg tower seems to combine the flamboyance of the Ulm design with a more original and mature sculptural sensibility.



7-17 Strasbourg Cathedral, the Bern Plan.

Architektur, Portale, Restaurierungsarbeiten, vol 18 of *Esslinger Studien: Schriftenreihe Herausgegeben vom Stadtarchiv Esslingen am Neckar* (Sigmaringen, 1998), 36-38.

⁴⁹ The dialog between the two-story tower core and the uninterrupted verticals of the stair turrets gives the whole composition an impressive thrust, as though the elements were vaulting past each other in a race heavenward. This effect is not achieved in Ulm Plan A, where all the verticals are punctuated at the same level, nor in Böblinger's Ulm Plan C, where there is no punctuation at all in the one-story octagon. It is also interesting to observe that the corner turrets of the Strasbourg tower recover the triangular geometry of the corner pinnacles at Freiburg im Breisgau.

⁵⁰ Wilson, *Gothic Cathedral*, 242-43. The probable source for the interlaced arches of Ulm and Strasbourg, meanwhile, was probably the upper transept of Prague cathedral.



7-18 Strasbourg Cathedral, view up from spire base.

Upon Ulrich von Ensingen's death in 1419, control of the Strasbourg lodge passed to his foreman Johannes Hultz of Cologne. Ulrich's son Matthäus Ensinger was probably passed over simply because of his youth, rather than because of any conflict with the fabric administrators.⁵¹ Matthäus eventually returned to Strasbourg, having proven himself competent as master of the lodges in Ulm and Bern. In the meantime, however, Johannes Hultz had constructed a spire cone that exceeded all other

medieval spires in complexity and conceptual rigor (fig. 7-18). This north spire of Strasbourg cathedral, completed in 1439, was destined to remain the tallest masonry structure erected in the Middle Ages, and the tallest medieval structure of any kind to survive to the present day.

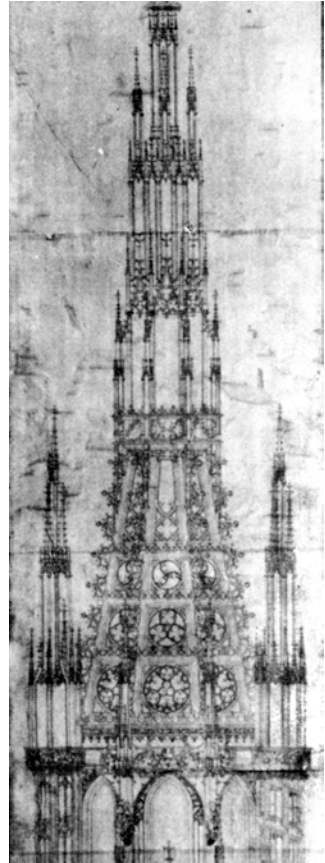
The early phases of Hultz's work on the Strasbourg tower show little hint of the originality to come. Hultz first set about completing the short upper story of Ulrich von Ensingen's tower. Although Matthäus Ensinger's drawing shows the four large stair turrets crowned with canopies, Hultz left them square-topped, as in Ulrich's Ulm Plan A. It was also probably Hultz who decided to leave the vault of the first tower story incomplete, so that one can look straight up from the level of the belfry balustrade to the delicate skeleton vault that he built at the level of the spire base. For the most part, however, his work on the tower core simply completed the work of his predecessor.

The impression that Johannes Hultz began his career fairly conservatively is based on the existence of a drawing in Strasbourg frequently identified as Hultz's first design for the cathedral's spire cone (fig. 7-19). Certainly the design seems conservative compared to the earlier work of Ulrich von Ensingen: the sides of the spire cone are straight rather than curved, and all the tracery infill is inscribed into circles and rectangular panels as in the century-old Cologne Plan F. Nevertheless, recent scholarship suggests that

⁵¹ Barbara Schock-Werner, *Das Strassburger Münster im 15. Jahrhundert: Stilistische Entwicklung und Hüttenorganisation eines Bürger-Doms* (Cologne, 1983), chap. 6.2.

the design should be seen as the work of Ulrich rather than Hultz.⁵² If so, this was the latest and most extreme example of Ulrich's drift toward more concise and sculptural forms. Whichever the case may be, the drawing clearly suggests that a new geometric rigor was displacing free-flowing curvilinearity in the Strasbourg workshop in the years around Ulrich's death in 1419.

The strange mix of rich decoration and simple geometry in this design illustrates the challenges faced by Late Gothic spire designers as they sought to outdo the precedents of Freiburg and Cologne. There seems to have been some backlash against the fanciful curvilinearity of Ulrich's early designs, which had purchased creative freedom at the cost of a certain arbitrariness. In this later Strasbourg design, a boldly thrusting compound pinnacle sits atop the spire cone, giving it a taller and more complex profile. The corner flanges of the spire cone carry rows of bladed cusps rather than crockets, while bands of similar cusps encircle the spire at the level of each tracery panel. In addition, large slender pinnacles are shown rising from the corner stair turrets of the towers. Generally speaking, this design seems to represent an attempt to get the best of both worlds by combining the geometrical rigor of early openwork designs like Cologne Plan F with the more engaging compositional complexity of Ulrich's early work. In practice, this amounted to piling extra subassemblies onto a simple pyramidal spire



7-19 Strasbourg Cathedral, early plan for north spire.

⁵² Barbara Schock-Werner, in her monograph on the 15th-century Strasbourg cathedral lodge, *Strassburger Münster*, accepts the traditional attribution to Hultz, citing the Hultz shield on the drawing as decisive evidence for this claim (305). Roland Recht, though, asserts that the shield actually represents the Ensingen clan (*Bâtisseurs*, 399-400). To make matters more complex, the drawing in question is only a 19th-century calque of a lost original, raising the possibility that the shield was miscopied, since the attribution to Hultz dates from before the copy was made.

cone. The results in this case were not terribly impressive, and Hultz soon developed a far more compelling design.

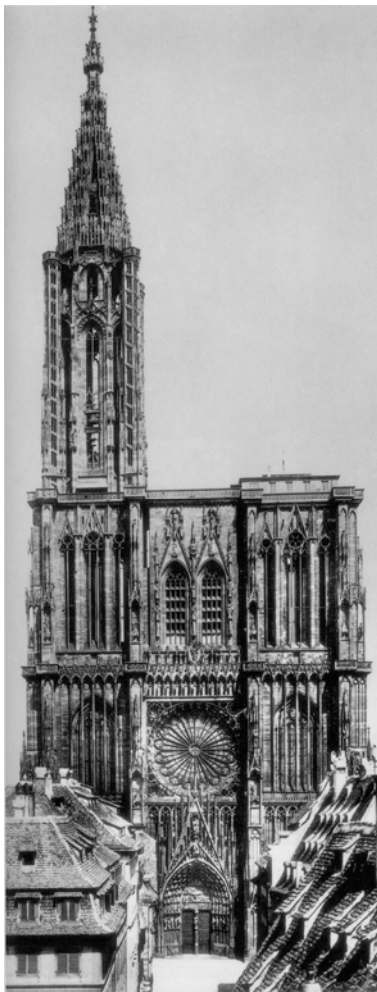
The daunting geometric complexity of Hultz's final design, the one that was actually built, obscures its kinship with this earlier design. Underneath the clusters of staircase tabernacles that define its silhouette, the present Strasbourg spire cone is simply a straight-sided openwork pyramid of the Freiburg type. By piling spiral stair canopies rather than just decorative cusps onto the corner flanges of this simple spire cone, Hultz succeeded in attaining the mix of rigor and elaboration that had been sought in the earlier design. Although this use of stair tabernacles was a brilliant masterstroke, the principles of composition were not so different than in the earlier design. Because the stair canopies reached so high above the outside of the spire cone proper, and because of the complexity of knitting them together into one termination, Hultz found it unnecessary to add an extra pinnacle assembly above the whole.⁵³ This uncanny combination of baffling intricacy and rigorous systematic consistency make Hultz's spire cone one of the greatest triumphs of medieval design. Its successful construction, moreover, must rank as one of the greatest accomplishments of the medieval builder's craft.

The Strasbourg spire has elicited widespread praise ever since its completion in 1439. In 1457, soon before his election as Pope Pius II, Aeneas Silvius Piccolomini described the Strasbourg spire as "an admirable work that hides its head in the clouds," concluding that the Germans surpassed all other peoples in architecture. Two years later the assembled master masons of the German world chose Strasbourg as the supreme lodge of the Empire, in large part, no doubt, because the construction of the spire was such a conspicuous triumph. The Strasbourg humanist Jacob Wimpheling built on Piccolomini's writings in his 1502 *Epitome Rerum Germanicarum*, which praised the spire as the eighth wonder of the world. This literary tradition eventually informed Johann Wolfgang von Goethe's 1772 essay *Von Deutscher Baukunst*, one of the seminal works of the German Neo-Gothic movement.⁵⁴

⁵³ At the upper terminations of the four primary stair turrets of the tower, slender bridges jump across from the turrets to the diagonal faces of the tower core. At each of the eight corners of the tower, a snaking spiral staircase of alternating curvature knits its way upward through six linked openwork tabernacles mounted on the corner flanges of the spire cone. The eight uppermost tabernacles are then paired to four more tabernacles at the crown of the spire. Because these are oriented towards the four cardinal directions, this crown assembly is rotated 45 degrees with respect to the tower below. Originally a statue of Mary crowned the composition, reflecting the cathedral's dedication, but this was replaced in 1488 by the present large ball-and-Kreuzblume finial.

⁵⁴ On Piccolomini and Wimpheling, see Paul Frankl, *The Gothic: Sources and Literary Interpretations through Eight Centuries* (Princeton, 1960), 246-51.

The completion of Hultz's spire gave Strasbourg Cathedral one of the most impressive tower terminations in history, but the building's Late Gothic patrons may not have been fully satisfied with the strikingly asymmetrical facade format that resulted (fig. 7-20). Admittedly, medieval builders insisted on exact symmetry less than their successors. More often than not, medieval two-tower facades are slightly asymmetrical. Nevertheless, a glance at Plan F or the lower stages of most cathedral facades should dispel the notion that medieval designers cared little for bilateral symmetry. Because construction of large spires was inevitably a slow process, one was typically completed before a second was begun, as at Strasbourg. This order of operations insured that an impressive height was reached relatively quickly. Only in the nineteenth century, with the advent of rapid mechanized construction, did it become practical to simultaneously erect two great spires on one building. By the time medieval builders were ready to build their second spire, one master had typically succeeded another. Thus, the subtle asymmetry of most Gothic two-tower facades reflects the pride of designers



7-20 Strasbourg Cathedral, west facade and spire.

engaged in a formal dialog with their predecessors, rather than a romanticized medieval disregard for symmetry. Surely one of the great advantages of the axial tower format was that a building would appear complete and perfect even with only one spire completed. Although the bold asymmetry of the Strasbourg facade gives the whole composition a certain character and restless energy, it is entirely unsurprising that Hultz's

medieval successors contemplated adding a second tower and spire. Nor is it surprising that several decades passed between the two spire projects, since other parts of the fabric demanded attention as soon as money became available. Matthäus Ensinger returned to Strasbourg to aid with maintenance work, while Master Jodok Dotzinger worked to renew the vaults of the nave in the 1460s. Further repairs were made in the early 1480s by Master Konrad Vogt.⁵⁵

Construction of a south tower and spire became a high priority for Hans Hammer, who worked at Strasbourg from 1471 to 1490 and again from 1513 until his death in 1519. He began as a sculptor, designing and carving the cathedral's sacrament house and probably its chancel during his first period in the city. Later he turned to architecture, becoming involved after his return to Strasbourg with the design of the chapel of Saint Lawrence, the northern counterpart to Master Gerlach's chapel of Saint Catherine. In addition, he produced a large elevation drawing of a tower and spire very similar to those already erected on the north of the cathedral facade (fig. 7-21).⁵⁶ In Hammer's drawing, large pinnacles crown the four major tower staircase turrets, a large spiral staircase turret flanked by four pinnacles emerges from the top of the spire cone, and the proportions of the upper tower story are somewhat more svelte than in the north tower. Hammer clearly intended his drawing as a respectful but critical rejoinder to the design of the earlier structure.

Until recently, it had not been clear whether this drawing was part of an earnest proposal for a second cathedral tower, or whether it was simply an advanced design exercise. However, in her monograph on the fifteenth-century history of the Strasbourg lodge, Barbara Schock-Werner convincingly argues that Hammer actually undertook preliminary construction of such a tower.⁵⁷ Hammer's use of pseudo-perspectival visual cues, combined with the overall quality of the drawing, suggests that this was a presentation drawing meant to drum up support for the south tower project. In addition to this elevation drawing of the tower and spire, Hammer made a series of plans of the lower facade block, with particular emphasis on the junction between the facade and the nave walls. There he constructed a large flying strainer arch to relieve stress in the facade foundations. The appearance of cracks in the fabric of the facade made these reinforcements a necessary prerequisite to the construction of a second

⁵⁵ Schock-Werner, *Strassburger Münster*, chap. 6.5.

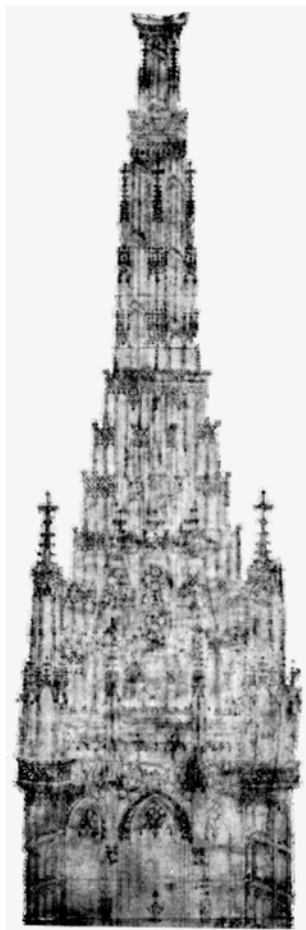
⁵⁶ Recht, *Bâtisseurs*, 401-2. Recht dates the drawing to before 1490.

⁵⁷ Schock-Werner, *Strassburger Münster*, 181-5.

tower. A few courses of the tower itself were evidently put into place, but work was abandoned soon thereafter.⁵⁸

The precise dating of this work stoppage remains in question, although it might plausibly be associated with Hans Hammer's departure from the Strasbourg lodge in 1490.⁵⁹ This dating would accord well with the close stylistic similarities between the tower drawing and Hammer's drawing of the chancel, dated to 1484. Placing the tower drawing in Hammer's first stint in Strasbourg would also tally with Otto Kletzl's claim that the south tower project was supported by Geiler von Kaiserberg, a humanist preacher popular in Strasbourg who died in 1510.⁶⁰ Although Gothic design principles would have recommended the construction of a south tower in any case, von Kaiserberg's familiarity with humanist literature may have led him to promote symmetry as an ideal of beauty.

The reasons for the abandonment of the south tower project remain unclear, but several possibilities may be suggested. In the first place, there may have been concern that the cracking of the facade would become catastrophic if the weight of another tower was added. In addition, there may have been the feeling that one tower was enough for Strasbourg, both functionally and



7-21 Strasbourg Cathedral, plan for south spire.

⁵⁸ See Schock-Werner, *Strassburger Münster*, 183. There exists a drawing of the facade platform drawn by Daniel Specklin in 1587, showing some sort of construction on the site of the south tower. This physical evidence was destroyed during the construction of the present watchhouse in 1782. According to Schock-Werner, Kletzl believed that the engraving showed the remains of the bell turret which had been erected in 1494 and destroyed by storm in 1533. Schock-Werner points out, however, that this turret stood in the center of the facade, atop the large belfry, making it likely that Specklin's drawing actually shows the first courses of Hammer's south tower.

⁵⁹ Kletzl argued that Hammer's drawing must date from before 1488, since it shows a terminal socket for a statue, like the statue of Mary that crowned the north spire from 1439 until it was replaced in 1488 by the present chalice and patten (cited in Schock-Werner, *Strassburger Münster*, 185). Recht dates the drawing to before 1490 (*Bâtisseurs*, 401-2).

⁶⁰ Kletzl, as cited by Schock-Werner, *Strassburger Münster*, 183.

iconographically. Bells could be hung and watches could be posted using the north tower alone, and it may have been argued that Strasbourg minster, having been adopted by the citizenry, really needed only the traditional number of towers for a parish church, not a cathedral. Moreover, it must not be forgotten that great spires were tremendously expensive to build. With their one superb spire complete, the citizens of Strasbourg had already outdone all their competitors. The Strasbourg tower was both larger and more elaborate than those of Freiburg and Vienna, while the towers of Cologne, Ulm, and Prague remained mere stumps. Great tower projects were brewing in Brabant, but none yet threatened to overtop Johann Hultz's masterpiece. Pouring more money into a second spire would have been extravagant, risky, and unnecessary. Frustration over this decision might well have precipitated Hans Hammer's departure from Strasbourg in 1490. After his return in 1513 he occupied himself principally with the construction of the Saint Lawrence Chapel, an interesting but altogether more modest structure. By the time of Hammer's death in 1519, Gothic church construction in the Empire was grinding to a halt, leaving Strasbourg cathedral with its boldly asymmetrical facade block.

Although Hans Hammer must have been disappointed that his plan to complete the second Strasbourg tower was never implemented, even he must have appreciated that the substantial completion of the facade, north tower, and spire represented one of the proudest achievements of medieval architecture and patronage. The citizens of Strasbourg, like their peers in Freiburg and Vienna, had managed to see a wildly ambitious great spire project to completion, creating a peerless civic monument for their burgher-controlled city-state. Even more than these other monuments, the Strasbourg facade was a work of consummate quality, a collage of brilliant fragments. The lower story, based on Plan B, clearly demonstrated that the Rayonnant style could blend vertical drive and colossal scale with virtuoso detailing. The second story, with its two-layer tracery screen and delicate "harpstring" mullions, opened new horizons in facade articulation while also pioneering the large-scale use of iron dowels and cramps to support free-standing structure. Despite their relative dryness, Gerlach's towers deserve note for their early use of star-vaults, while the belfry project shows a bold originality of composition. Ulrich von Ensingen's tower and Johann Hultz's spire, meanwhile, set a standard that won the Strasbourg lodge its place as Master Lodge of the Empire. Altogether, this heritage of design excellence, supported by the lavish donations of Strasbourg's rich citizenry, combine to make one of the most singularly impressive ensembles in the history of architecture.

Smaller Openwork Spire Projects in the Southwestern Empire

The work of Ulrich von Ensingen at Ulm and Strasbourg, not surprisingly, attracted the attention of patrons in many other cities in the region. Ulrich himself was called to Esslingen in 1398 to develop a tower and spire plan for the local Frauenkirche, and he also designed the north spire of the cathedral of Basel, for which he submitted a plan in 1414. His son Matthäus was hired in 1420 as the principal architect of Bern Minster, another building meant to feature a large spired tower. In the wake of these directly Ensinger-related projects, openwork spires were built by the early sixteenth century in nearby towns such as Rothenburg ob der Tauber, Rottenburg am Neckar, Meisenheim, and Thann. All of these projects, like the larger spire-building initiatives at Freiburg, Ulm, and Strasbourg, demonstrate the prestige of openwork spire construction in the southwestern Empire.

The connections between spire construction and civic identity stand out with particular clarity in the case of Esslingen. The town's original parish church, dedicated to Saint Dionys, had been placed under the administrative control of the Speyer Cathedral chapter in the reign of Frederick II. Because this situation tended to erode Esslingen's religious autonomy, the city council voted in 1321 to reconstruct and enlarge the local chapel of the Virgin Mary.⁶¹ The choir of the new Frauenkirche was completed by 1335, with the eastern portions of the hall nave following by 1365. This church effectively supplanted St. Dionys as the site for burgher and civic display, especially after the promulgation of a new and more liberal civic constitution in 1376.⁶² Following a pause occasioned by the plague and the need to demolish a number of houses that stood between the new church and the city wall, the construction of the western nave and tower base began around 1400, in accord with designs made by Ulrich von Ensingen.

At Esslingen, as at Ulm, Ulrich von Ensingen's vision continued to inform and constrain the planning of his successors. As at Ulm, also, Ulrich planned to integrate the base of the western axial tower with the space of the nave, supporting the eastern tower wall rather precariously on two free-standing piers. The smaller scale of the Esslingen tower, however, spared its builders the structural problems that plagued the Ulm project later in its history. Since Ulrich von Ensingen lived in Strasbourg between

⁶¹ Two recent and valuable sources on the building's early history are Birgit Hahn-Woernle, *Die Frauenkirche in Esslingen* (Esslingen, 1997), esp. 2-6, and Schurr, "Die Esslinger Frauenkirche," esp. 15-22.

⁶² Schurr, "Die Esslinger Frauenkirche," 74-77.



7-22 Esslingen, Frauenkirche.

1400 and his death in 1419, his supervision of work at the Frauenkirche was indirect, with a local team of masons responsible for implementing his plans. Ulrich's son Matthäus, who worked principally in Bern and Ulm, played much the same supervisory role until his own death in 1463. In the meantime, local leadership of the Esslingen workshop had passed from Matthias Ensinger, another of Ulrich's sons, to Hans Hülín of Basel, and then, in 1440, to Hans Böblinger, whose son Matthäus Böblinger would go on to produce Plan C for the Ulm tower.

Given this strong overlap in the dramatis personae, it is not surprising that the Esslingen tower scheme comes across as a reduced paraphrase of the Ulm design (fig. 7-22). The lowest portion of the Esslingen tower features an entry porch with a sloping shed roof, a simplified version of the triple-arched porch at Ulm. The sloping walls over the side aisles meet the tower at the same angle they do at Ulm, thanks to a reduction in the pitch of the roof in this westernmost

bay of the nave; the tall roof covering the rest of the hall nave soars higher, reaching the top of the square-planned tower section. This portion of the tower was completed by 1445 or so. Construction halted in 1448 because of strife between the citizens of Esslingen and the Duke of Württemberg over tolls on the river Neckar, but work on the octagonal tower story resumed in 1454 under the direction of Hans Böblinger. In this zone, as in the analogous section of the north tower of Basel cathedral that had been designed decades earlier by Ulrich von Ensingen, a single openwork staircase turret flanks the octagonal tower core, instead of the four turrets

seen in the larger towers of Ulm and Strasbourg. In its relatively squat proportions, too, this octagonal tower story recalls Basel more than Ulm or Strasbourg. The tall, straightsided Esslingen spire cone, though, recalls Matthäus Böblinger's Ulm Plan C far more than it does Ulrich von Ensingen's strongly concave spire designs.⁶³ This resemblance is not surprising, since Hans Böblinger was involved in constructing the Esslingen spire in the 1470s, precisely when his son Matthäus was developing his plans for Ulm. Hans Böblinger had nearly completed the spire before his death in 1482. The final campaigns on the Frauenkirche were completed by 1507 under the supervision of his sons and sons-in-law, including, after his dismissal from the Ulm project in 1494, Matthäus. With its overall height of seventy-two meters, the Esslingen spire was scarcely one half as tall as the great spire of Strasbourg Cathedral. On its appropriately smaller scale, though, it emphatically expresses the pride and autonomy of the burgher community that had financed its construction.

The architectural and social circumstances at the Basel Cathedral were very different from those at Esslingen's Frauenkirche, but Ulrich von Ensingen's input proved just as pivotal in Basel as it had in Ulm, Strasbourg, and Esslingen. Construction of Basel's present cathedral began in the 1180s in the Romanesque style, with completion of the nave following by 1225.⁶⁴ Much of the facade was rebuilt following a fire in 1258, but the building was substantially damaged in an earthquake in 1356, which destroyed not only its choir and crossing tower, but also the upper stories of the four towers flanking its choir and crowning its west facade. Reconstruction of the choir proceeded fairly rapidly under the direction of Johannes Parler of Gmünd, thanks largely to the prosperity of the city. The growing wealth of Basel's citizenry, in fact, overshadowed that of the bishops so decisively that the latter were forced, over the course of the later Middle Ages, to cede many privileges to the city. This erosion of episcopal power, which continued all the way to the coming of the Reformation in 1529, was particularly marked in the last quarter of the fourteenth century. By 1400, therefore, the burghers of Basel had effectively established their dominance in local affairs, and the city government began to assert its power more forcefully in the surrounding

⁶³ One interesting feature of the Esslingen spire design was its incorporation of a masonry crown between the "crow's nest" balcony and the Kreuzblume finial at the spire tip. Schurr proposes that this motif should be read as the crown of the Virgin Mary, to whom the church was dedicated. See "Die Esslinger Frauenkirche," 36-37. For the chronology of tower construction and the attribution to the various masters, see *ibid.*, 57-61.

⁶⁴ For the general outlines of Basel Cathedral's history, see Dorothea Schwinn Schürmann, *Das Basler Münster* (Bern, 2001). An older but more detailed source is Hans Reinhardt, *Das Basler Münster* (Basel, 1961).



7-23 Basel Cathedral, west facade.

region. It was in this context of increasing civic self-expression that Ulrich von Ensingen was called in 1414 to design an openwork spire for the earthquake-truncated north tower of the cathedral's facade.⁶⁵ Actual construction of this spire took place only in the years between 1421 and 1428, after Ulrich's death, under the supervision of his son-in-law Hans Kuhn. The spire nevertheless conveys the flavor of his design, which was reinterpreted later in the fifteenth century in the design of the cathedral's adjacent south spire. These two spires, the only authentically medieval cathedral spires in Switzerland, give Basel Cathedral its current dramatic silhouette (fig. 7-23).

Ulrich von Ensingen's design for the north tower at Basel, not surprisingly, registers an abbreviated distillation of the design themes introduced in his scheme for the far larger Ulm spire. The subtly concave profile of the spire cone, for

example, stands out as one of Ulrich's characteristic mannerisms. At Basel, there is only a single openwork staircase turret flanking the short octagonal story below the spire base, and it occupies the northeast corner of the tower where it cannot easily be seen from a viewer gazing at the facade. Three small pinnacled canopies, however, articulate the other three diagonally-planted faces of the octagon, filling in the spaces where this story steps in from the boxy tower story below, which serves as the shelter for the city watchman. The soaring forms of the narrow spire and pinnacles contrast dramatically with the horizontal lines of the traceried balustrades bracketing

⁶⁵ Reinhardt discusses the towers in the context of "Die grosse Kirche der Stadt," in *Das Basler Münster*, 34-40. Schock-Werner explicitly attributes Ulrich von Ensingen's summons to burgher agency: "En 1414, la bourgeoisie de Bâle voulut aussi surhausser sa tour et tout naturellement s'adressa à Ensingen." See "Ulrich d'Ensingen, maître d'oeuvre," in *Recht, Bâtisseurs*, 207.

this story, and with the murality of the lower facade as a whole.⁶⁶ The octagonal balustrade around the spire base, however, mediates this contrast somewhat. This upper balustrade blends together with the tips of the ogee arches framing the windows of the octagonal story, creating a qualified effect of elision.

The north spire of Basel Cathedral was one of the first openwork spires to be completed in the southwestern Empire since the construction of the Freiburg spire in the early fourteenth century. Despite its relatively small sixty-five meter overall height, therefore, it played an important role in popularizing the openwork spire format. It was surely seen by all the churchmen who came to the city beginning in 1431 to attend the council of Basel, including Bishop Alonso de Cartagena of Burgos, who was impressed enough to summon a northern builder to add similar openwork spires to Burgos Cathedral. This invitation proved to be highly consequential for the subsequent history of Spanish Gothic architecture, as explained in a subsequent chapter, but the impact of the Basel north spire project could also be felt closer to its home. Its builder, Hans Kuhn, added a miniature openwork Dachreiter to the local Predigerkirche,⁶⁷ and the Böblingers no doubt kept the Basel Cathedral spire in mind as they were revising the plans for the similarly scaled Esslingen spire.

The most obvious sequel to Ulrich von Ensingen's Basel spire was of course the cathedral's adjacent south spire, which was constructed between 1488 and 1500 to the designs of Hans von Nussdorf.⁶⁸ The distinctions between the two Basel spires are subtle but telling. Nussdorf responded to Ulrich's design by simultaneously updating it, smoothing over certain of its irregularities, and exaggerating others. Like the Böblingers at Esslingen, he chose to wrap a crown of interlaced ogee arches around the base of his spire, adopting a more modern and micro-architectural vocabulary than Ulrich von Ensingen and Hans Kuhn had in the north tower, where a crown of simple ogee gables occupies the analogous zone. Nussdorf also chose to give an octagonal plan to both of the stories beneath the spire, rather than just the top one. This allowed him to streamline his design in two ways. First, he was able to eliminate the prominent square-planned balustrade that provides such an emphatic

⁶⁶ Karl Stehlin, with a characteristically 19th-century preference for regular formal solutions, proposed that the tower was originally supposed to have a smoother profile, without the salient staircase turret. See *Baugeschichte des Basler Münsters* (Basel, 1895), 184-85.

⁶⁷ Pablo de la Riestra, *Gotik: Die gotische Architektur in der Schweiz* (Solothurn, 2002), 62-63.

⁶⁸ Preparations for the building of the tower had already been undertaken in 1469 and 1470 by Matthäus Ensinger's son Vincenz. See Turner, *Dictionary of Art*, s. v. "Ensinger, Vincenz," by Barbara Schock-Werner.

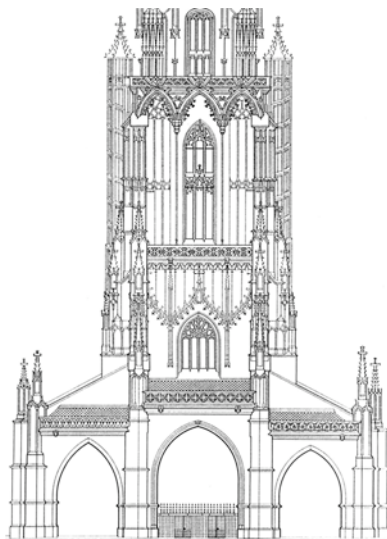
horizontal punctuation point in the north tower. Second, he was able to create slender corner pinnacles that would soar past both octagonal tower stories, rather than being visually confined within the short upper tower story. At the same time, though, Nussdorf deliberately complicated the silhouette of his tower and spire by emphasizing the concave spire profile and openwork staircase turret that his design had inherited from Ulrich von Ensingen's. Nussdorf accorded great prominence to his staircase turret by placing it on the inboard front corner of his tower, where it could be easily seen by viewers in front of the facade, rather than on the outboard rear corner where Ulrich had placed his. Nussdorf's stair turret was both more squat and more open than most previous examples of the type had been, in part because its pentagonal plan geometry made each of its window slots wider than those of turrets with the hexagonal or octagonal plans that had been traditional earlier. Altogether, Nussdorf's stair turret registers as a large autonomous object alongside the tower, rather than as one of its small subsidiary components. Thus, while the older Cologne Plan F had embodied a rigorously systematic approach to the problems of tower design, Nussdorf's scheme for the south tower of Basel Cathedral exemplifies the tendency, already evident in the work of Ulrich von Ensingen, to create towers as collages of interesting fragments.

In Bern, no less than in Basel, the Ensingers played a decisive role in establishing the direction of local architectural practice. In 1420, Mayor Rudolph Hofmeister called Matthäus Ensinger to Bern to begin the reconstruction of the city's principal church, the parish church of Saint Vincent, also known as Bern Minster. In administrative, financial, and symbolic terms, the rebuilding of the Minster was a civic project.⁶⁹ Ensinger's new church, by replacing a thirteenth-century structure that had been damaged in the earthquake of 1356, would express the power and prosperity of Bern, which had grown into the largest and most important city in the region. Because of the Minster's undoubted role as a civic symbol, and because of the Ensingers' reputation as spire builders—which Matthäus advertised by bringing to Bern his enormous elevation drawing of the Strasbourg Cathedral facade with a concave openwork spire—it seems overwhelmingly likely that Bern Minster was meant all along to carry an openwork spire roughly similar to the one that was eventually built in the 1890s. In the absence of original drawings more directly relevant to the

⁶⁹ The basics of the Minster's history are well covered in Luc Mojon, *Das Berner Münster* (Basel, 1960). A more recent perspective may be found in Christoph Schläppi and Bernard Schlup, *Machs Na: Ein Führer zum Berner Münster*, 2 vols. (Bern, 1993). Pablo de la Riestra points out, however, that Schläppi and Schlup err in suggesting that Bern Minster was planned with just one tower to save costs; the tradition of Freiburg and Ulm was surely a more relevant consideration. See *Gotik*, 73–76.

project, however, it is hard to be more precise about what Matthäus may have had in mind for the tower. It seems likely, however, that he foresaw at least the basic outlines of the triple-arched western porch design, since the westernmost nave buttress that he and his workers constructed in their first campaign of the 1420s already includes vault responds that anticipate the presence of the wide bays flanking the tower base.⁷⁰

Matthäus Ensinger and his builders managed to complete most of Bern Minster's exterior walls before he was called to head the Ulm workshop in 1446, but construction of the western porch and tower was left to his successors (fig. 7-24). The western foundations were laid in the



7-24 Bern Minster, elevation of west facade, up to lower tower octagon.

1450s, and the porch was completed by the early 1480s. By 1489, the tower stood to a height of roughly thirty meters, as a dated inscription above the first major tower balustrade attests. Work on the tower was halted for over a decade when the eastern tower piers began to settle in 1493. After other expert masons, including Hans Böblinger's son Lux and Matthäus Ensinger's son Vincenz, were called in as consultants, Burkhard Engelberg provided a new plan for the construction of the tower. Engelberg's plan guided the work of the local builder Peter Pfister, who completed the square-planned tower section between 1508 and 1518.⁷¹ One of the most striking features of this tower scheme was the row of interlaced but truncated arches that define the top margin of the square tower block. By 1521, the stump of the octagonal tower core stood eight meters above this level, but the coming of the Reformation interrupted construction of Bern Minster for the next fifty years. The nave and its aisles received their vaults only in the late sixteenth century, and the tower was crowned with

⁷⁰ Mojon, *Berner Münster*, 30-31. Mojon proposes, further, that Matthäus Ensinger modeled the triple-arched porch of the Minster not only on the proportionally narrower Ulm porch, but also on the older and wider porches of Noyon and Laon Cathedrals (222-23).

⁷¹ Bischoff, *Burkhard Engelberg*, 158-60; Mojon, *Berner Münster* 34-40. Mojon, however, notes that the roofing over the octagonal tower stump was added by Peter Kleinmann, rather than by Pfister.



7-25 Constance Cathedral,
plan for west block.

its openwork spire only in late nineteenth century. Because Burkhard Engelberg's plan had been lost in the interim, the present spire design is a Neo-Gothic invention. It harmonizes well with the building, though, because the coherence of the openwork spire-building tradition in the region made it possible to imagine, at least approximately, what Matthäus Ensinger and his patrons may have had in mind in the fifteenth century.

One of the latest and most unusual of the southwestern imperial spire programs was undertaken at the cathedral of Constance, where links with the Bern workshop were strong.⁷² Lux Böblinger, who succeeded Vincenz Ensinger as master of works in 1490, undertook construction in 1497 of a deep foundation between the two then-extant western towers of the cathedral, which were Romanesque structures with small Gothic tips. This project, begun at the behest of Bishop Hugo von Hohenlandenberg, set the stage for the construction of a large central tower that would give the church a more dramatic silhouette. By 1511 the new work had reached the height of the old towers, but a bad fire in that year led to a rethinking of the project in 1512. In response to the recommendations of a panel of consultants including Strasbourg's Hans Hammer, Lux Böblinger's successor Lorenz Reder drew up a curious new plan for the Constance west block (fig. 7-25). A tall slender

⁷² See Friedhelm Wilhelm Fischer, "Ein neu entdeckter spätgotischer Turmriss und die letzte mittelalterliche Bauphase am Münster zu Konstanz," *Jahrbuch der Staatlichen Kunstsammlungen in Baden-Württemberg* 3 (1966): 7-50. The drawing under discussion, which Fischer attributes to Lorenz Reder, is now preserved in the Staatsarchiv in Wiesbaden.

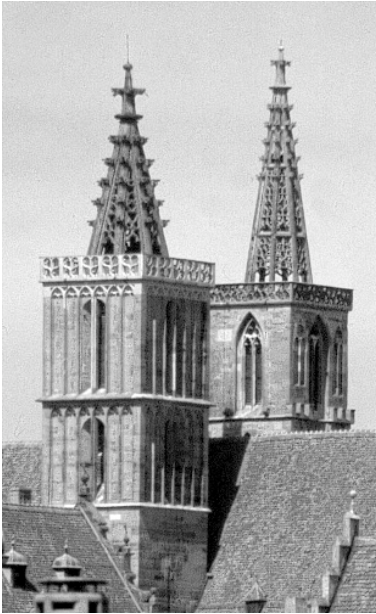
openwork spire of fairly traditional form appears at the left of the drawing, but a bizarre openwork canopy of almost onion-domed form appears at right. This unconventional form seems to represent a marriage of ideas from the Böblinger tradition, as seen in Matthäus Böblinger's design for the Mount of Olives shrine in Ulm, with ideas drawn from Augsburg, where the intersection of northern and Italianate architectural cultures was fostering the development of new tower forms, as discussed in the following chapter.

This Augsburg connection appears particularly plausible given the many affinities between motifs in Reder's drawing and those used by the Augsburger Burkhard Engelberg. The interlaced but truncated arches in the drawing, for example, recall the similar forms seen in the portions of the Bern Minster tower built to Engelberg's design. The massing of the intended facade cannot be easily deciphered from the drawing alone, because Reder employed unusual conventions of representation, perhaps so that he could show his patrons details from various sides of the facade on one page. As renderings of the Constance facade made before the Neo-Gothic campaigns of the late nineteenth-century show, however, two small onion domes formerly flanked the stump of the facade's central tower.

These domes, like all the components of the Constance facade, are simpler than the one shown in the drawing, but the clear relationship between them suggests that Reder originally intended a similar massing, with two domed canopies flanking a central openwork spire. This suggests that Reder originally intended a similar massing, with two domed canopies flanking



7-26 Bozen, church of Maria Himmelfahrt, spire.



7-27 Rothenburg ob der Tauber, St. Jakob, towers and spires.

the single openwork spire in the drawing. In practice, though, the forms that were actually built at Constance were far simpler than those shown in the drawing. The chaos of the Reformation, moreover, caused work on the church to be abandoned in 1525, so that the facade block remained spireless until the nineteenth century.

Structural difficulties, slow construction schedules, and the Reformation conspired to prevent the completion of the Constance, Bern and Ulm spire projects in the Middle Ages, but many humbler openwork spires were completed in the southwestern empire by the middle of the sixteenth century.

Burkhard Engelberg, for example, provided plans for a small openwork spire for the church of Maria

Himmelfahrt in the south Tyrolean town of Bozen, or Bolzano. This delicate structure, which surmounts a narrow hexagonal tower story flanked by decorative counter-curved flying buttresses, was constructed to his designs by Hans Lutz von Schussenreid between 1501 and 1519 (fig. 7-26).⁷³ In the less well documented case of Rothenburg ob der Tauber, two subtly different openwork spire pyramids were added in the last quarter of the fifteenth century to the the square towers flanking the western choir of St. Jakob, where Tilman Riemenschneider's altarpiece of the Holy Blood would subsequently be installed (fig. 7-27).⁷⁴ A smoother integration between spire and tower was achieved at St. Martin in Rottenburg am Neckar, where corners of the square tower terminate in beveled planes, as at Reutlingen (fig. 7-28). Indeed, construction of the Rottenburg spire was essentially contemporary with the rebuilding of the Reutlingen spire,

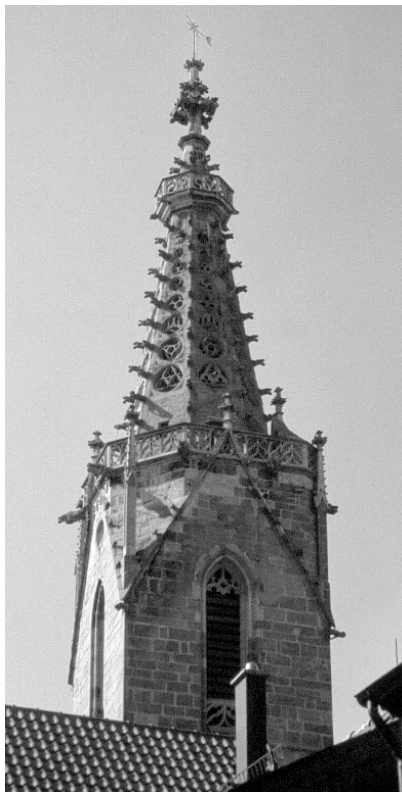
⁷³ Bischoff, *Burkhard Engelberg*, 154-56.

⁷⁴ Local lore melodramatically suggests that the master responsible for the older and more squat of the two spires threw himself from the tower when he saw that he had been surpassed by his apprentice.

which had been damaged by a lightning strike in 1494.⁷⁵ While the Reutlingen spire retained its traditional mural form, though, the Rottenburg spire was pierced with tiers of traceried roundels. Because the spire surface surrounding these perforations remains solid, the effect at Rottenburg is far less diaphanous than it had been at Freiburg, but the combination of piercings and crockets gives the Rottenburg spire a rich visual texture that the smoother Reutlingen spire lacks. All of these small openwork spires, like their far larger cousins at Freiburg and Strasbourg, were added to the principal churches in their home towns.

By circa 1500, the burgher-driven patronage patterns that had dominated major spire construction projects in the southwestern empire had begun to give way to more complex patterns in which aristocrats played a more conspicuous role, as the cases of

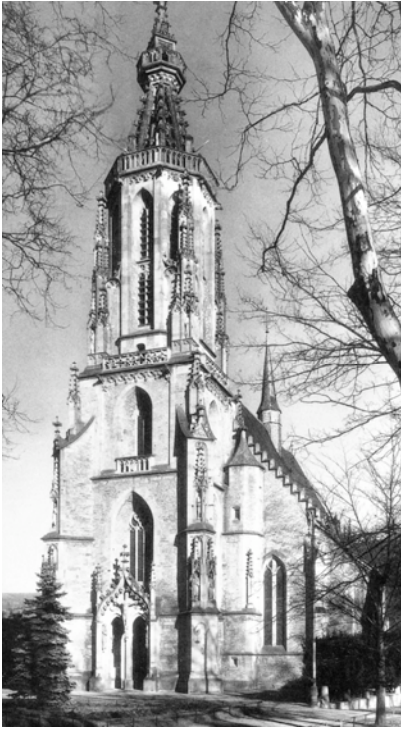
Meisenheim and Thann suggest. In Meisenheim, which had served as a principal residence for the Wittelsbachs of Pfalz-Zweibrücken since 1444, Count Ludwig the Black commissioned Philipp von Gmünd to design a new palace church, which was built between 1479 and 1503. Its elaborately vaulted polygonal choir was meant to serve as Count Ludwig's mausoleum, but the church also served the local order of the Knights Hospitaller, and the local citizenry used it as their parish church.⁷⁶ It is perhaps not surprising, therefore, that the building incorporates a single axial tower with an openwork spire like those popularized by the great



7-28 Rottenburg am Neckar,
St. Martin, upper tower and spire.

⁷⁵ Birgit Kayser, of the Reutlingen Stadtarchiv notes that the Reutlingen spire was rebuilt in its original form by Peter von Breisach, the official city architect, after a lightning strike on 27 June, 1494. E-mail exchange with the author, July 2002.

⁷⁶ Nussbaum, *German Gothic Church Architecture*, 195-97.



7-29 Meisenheim, palace church,
western tower and spire.

parish churches of Freiburg and Ulm (fig. 7-29). Despite its inclusion of certain novel elements, such as the diagonally placed buttresses of the lower tower, the Meisenheim scheme comes across as a blocky and conservative reinterpretation of design themes introduced by Ulrich von Ensingen. The spire pyramid itself, for example, is a fairly squat openwork structure trapped between the prominent horizontal balustrades of the spire base below and the “crow’s nest” above.

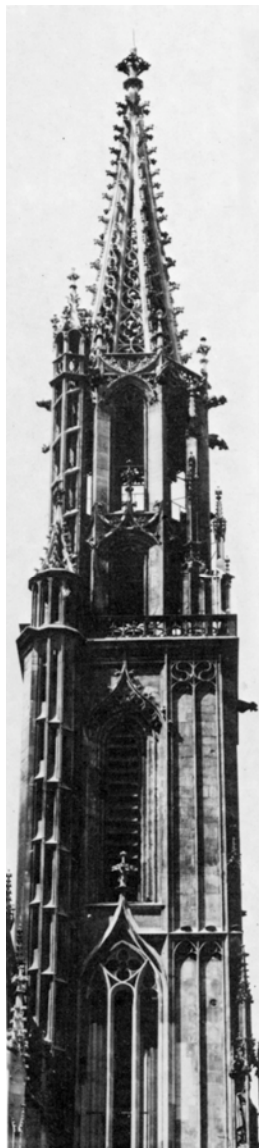
At Thann, in Alsace, a far more elegant spire was built in the early sixteenth century to crown a church with similarly diverse functions (fig. 7-30). The town had been founded in the early thirteenth century by the Counts of Ferrette, adjacent to their new castle residence. A church was recorded in Thann by 1287, two years before Bishop Benevuto of Gubbio visited Alsace, probably bringing with him

the relic of Saint Theobald that would subsequently become the center of pilgrimage and devotion in Thann.⁷⁷ The church was rebuilt in far grander style beginning in 1324, when the marriage of the Ferrette heiress delivered Thann into the hands of the Habsburgs. Financial support for the project came from the Habsburgs and from gifts, especially from pilgrims, while its administration was overseen by an officer of the city council. The civic flavor of the project became even more marked in 1389, when the church of St. Theobald became Thann’s parish church. In 1441 the church was promoted to collegiate rank. In the decades that followed, a series of talented masters worked steadily on the church, which stood substantially

⁷⁷ In *Studien zur spätgotische Baukunst am Oberrhein* (Heidelberg, 1978), 21-66, Jürgen Julier discusses Thann. For the history of patronage in Thann, see 27-29; for the tower, 33-36, 46-54; and for the spire, 64-66. See also Joseph Baumann, “La Collégiale de Thann,” *Congrès archéologique de France*, 136 (1978): 212-22.

complete by the early sixteenth century. Although the mention of a “Master Hans” in the 1470s and 1480s has led to speculation that Hans Böblinger was involved in the project, the greatest contributions to the church were made by Master Remy Faesch, a native of Basel. Faesch designed not only its nave vaults and the elaborate vaulting and portal of its north aisle, all of which were completed in the 1490s, but also its soaring openwork spire, which he and his workers completed in 1516.⁷⁸ With its slender proportions, subtle concavity, and complex detailing, the Thann tower and spire stand as admirable sequels to the works of Ulrich von Ensingen and, more directly, Hans Nussdorf. The single airy openwork staircase that flanks the octagonal tower core also belongs to this tradition, while the interlacing crowns of arches that articulate both the midsection and the upper margin of this tower core represent sophisticated updatings of the Ensinger vocabulary seen at Strasbourg and Ulm.

Altogether, the wave of openwork spire construction in the southwestern empire was one of the most artistically and sociologically coherent subchapters in the larger narrative of Gothic spire construction. Like the Freiburg spire that was their principal prototype, these later openwork spires served as prominent civic symbols, and their construction often received direct support from local governments. The openwork spire type achieved new popularity in the years around and after 1400 thanks largely to Ulrich von Ensingen. By amplifying and updating the Freiburg spire in his plans for Ulm Minster, he established a paradigm for openwork spire construction that remained compelling for well over a century. His work at Ulm, Strasbourg, Basel, and Esslingen, and the work



7-30 Thann,
St. Theobald, tower
and spire.

⁷⁸ Baumann, “Collégiale de Thann,” esp. 218.

of his successors in these and other smaller centers such as Meisenheim and Thann, contributed greatly to the dynamism of Late Gothic architectural culture in the region. By importing Parlerian motifs into the western portions of the Empire, moreover, Ulrich von Ensingen and his successors set the stage for later developments in the Low Countries, where the construction of huge civic towers figured prominently in the architectural landscape. The openwork spires of the southwestern Empire, however, represented only one of the tower termination types developed in Late Gothic Germany, as the unusual domical forms explored at Constance already begin to suggest. Both the intrinsic significance of the Ensingers' achievement and the subsequent reception of their work, therefore, can best be appreciated when this diversity is taken into account.