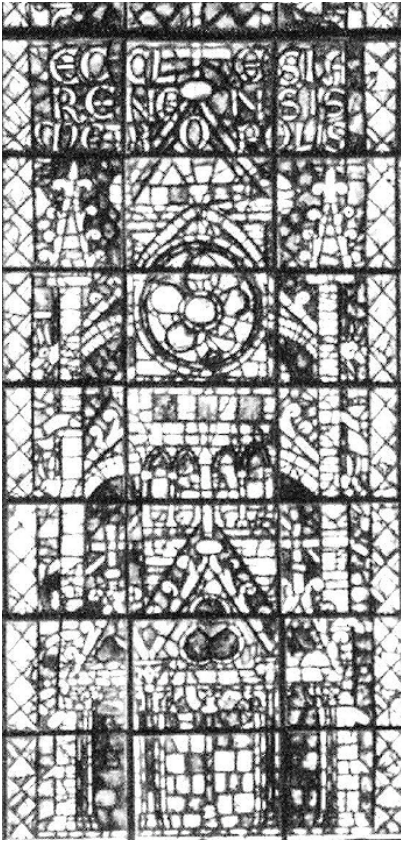


Chapter 8: Divergent Currents in German Late Gothic Spire Design

The openwork spires of the southwestern Empire, like their eastern cousins at Vienna and Meissen, grew out of what might be called the main line of great spire design. Daring and innovation were certainly valued in this tradition, as the tremendous heights and complex detailing of these structures attest. At the same time, however, this tradition remained conservative, in that it stayed largely dependent on architectural ideas pioneered in France in the twelfth and thirteenth centuries. In terms of overall form, the tall pyramidal spire format seen at Chartres continued to guide the Ensingers and their successors, much as it had guided their predecessors working at Freiburg and Cologne in the years around 1300. In terms of articulation, similarly, the richly decorative but largely skeletal appearance of openwork spires represented a natural extension of aesthetic norms that had been prevalent in French Rayonnant design.

By the fifteenth century, the formal standards embodied by the main line of openwork spire design came to be questioned from two opposing directions. On the one hand, the increasing virtuosity of Late Gothic designers fostered the exploration of ever more complex and convoluted spire forms, which often abandoned the traditional pyramid form altogether; many such experiments related closely to the design of contemporary micro-architectural shrines, which was becoming an important field for virtuoso artistic display in its own right.¹ On the other hand, German Late Gothic architectural culture witnessed the emergence of a streamlined or even reductive approach to design, apparent especially in the planar walls and boxy exterior volumes of many of the era's hall churches. These two seemingly contradictory impulses actually went hand in hand to a certain extent, as complex vaults and micro-architectural shrines became foci for architectural interest in otherwise simple buildings. The cumulative effect of these divergent but linked tendencies was to challenge the primacy of the traditional great spire format. By the end of the fifteenth century, three principal alternatives to the openwork spire type had been developed: buttressing pyramids; domes and wreaths; and streamlined or reductive tower forms.

¹ See François Bucher, "Micro-Architecture as the 'Idea' of Gothic Theory and Style." *Gesta* 15, nos. 1-2 (1976): 71-91; and Peter Kurmann, "Gigantomanie und Miniatur: Möglichkeiten gotischer Architektur zwischen Grossbau und Kleinkunst," *Kölner Domblatt* 61 (1996): 123-46.

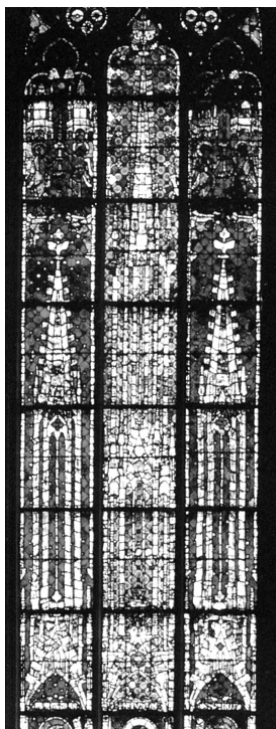


8-1 Reims Cathedral, glass panel from south transept clerestory.

Buttressing Pyramids

The term buttressing pyramid refers to a tapering spirelike structure composed largely or exclusively out of miniature flying buttresses. Flying buttresses had originally been developed to deal with structural forces in full-scale buildings, but representations of flying buttresses soon began to appear in media such as stained glass and goldwork, where structural forces were of no consequence. In the south transept clerestory of Reims Cathedral, for instance, flying buttresses are among the few architectural elements of the real cathedral that appear in the “portrait” of “*Ecclesia Renensis Metropolis*,” executed in the mid-thirteenth century (fig. 8-1). In such early examples, the flying buttress motif may have been intended not only to evoke the appearance of a particular cathedral, but also to invoke the prestige of modern French cathedral architecture more generally. By that

time, flying buttresses had fundamentally altered the traditional relation between architecture and space, by transforming buildings from closed volumes into open skeletal structures. They thus played an important role in making Gothic architecture appear airy and weightless, qualities that many designers of the day clearly held dear. Not surprisingly, therefore, glaziers and goldworkers soon began to imagine fantastic structures made of flying buttresses whose slender proportions and delicacy left the world of real full-scale architecture far behind, as in the early fourteenth-century windows of the Saint Catherine Chapel at Strasbourg Cathedral (fig. 8-2). Miniature flying buttresses with flanking pinnacles had also appeared in the lower half of Strasbourg Plan B, but they were left out of the actual



8-2 Strasbourg Cathedral, glass panel of Saint Catherine Chapel.



8-3 Nuremberg, St. Sebaldus, statue canopies on interior wall of choir.

Strasbourg facade. At Freiburg, though, the corner pinnacles flanking the main tower incorporate delicate flying buttresses that cluster around the central pinnacle shaft. These structures were far smaller than the openwork spire above, but their successful construction demonstrated that buttressing pyramids of respectable size could be executed in masonry.

The development of buttressing pyramids accelerated in the later fourteenth century thanks to the proliferation of micro-architectural monument types, ranging from small metal reliquaries and monstres to large free-standing monuments comparable to the earlier French Montjoies. The famous three-tower reliquary at Aachen, for example, includes decorative flying buttresses, as does the Parlerian tabernacle in Prague's Saint Wenceslas Chapel. Such flying buttresses began to appear in the spirelike masonry canopies over masonry statue niches, as seen in the choir interior of St. Sebaldus in Nuremberg, consecrated in 1379 (fig. 8-3). The



8-4 Nuremberg, Schöner Brunnen and Frauenkirche.

growing popularity of the feast of Corpus Christi in the century and a half after its inception in 1264, meanwhile, fostered the development of various sacrament house formats, including the buttressing pyramid type. The Parlerian sacrament house from Kolin, dating to the 1370s, provides an early and fairly simple example of this type, with only one tier of flying buttresses around the central pinnacle. The multiplication of such buttress tiers would eventually produce extraordinary sacrament houses like those of Ulm Minster or St. Lorenz in Nuremberg, which rank among the most complex and elaborate products of the Gothic architectural imagination. These structures were so airy and delicate that they had to

be anchored to the walls and piers of the buildings they occupied. Interestingly, though, some of the most ambitious early experiments with the amplification of the buttressing pyramid theme involved larger free-standing monuments, such as the Spinnerin am Kreuz in Wiener Neustadt and the Schöner Brunnen in Nuremberg, both designed in the 1380s.

In the Schöner Brunnen, a municipal fountain canopy erected between 1385 and 1396, three progressively smaller octagonal stories linked by two tiers of flying buttresses support a slender terminal pinnacle (fig. 8-4). This arrangement creates a tapering overall silhouette, even though most of the constituent elements in the structure are strictly vertical. In this sense, multi-tiered buttressing pyramids like the Schöner Brunnen resemble collapsible telescopes more than cones or simple pyramidal spires. Since each of the buttress uprights in the Schöner Brunnen carries a V-shaped doublet of flying buttresses, creating an octagonal star in plan, each of the successive stories is rotated by 22.5 degrees with respect to the one below. This gives the canopy a certain geometrical dynamism, but the overall organization of the structure remains lucid, in large part because of the clear horizontal demarcations between each of the gabled stories. The designer of

the Schöner Brunnen was Heinrich Beheim the Elder, who had developed this rich but crisp articulation style while working as chief architect of the St. Sebaldus choir.² The fountain canopy can thus be plausibly understood as an overgrown cousin of the smaller and simpler statue canopies seen at St. Sebaldus. As a soaring bundle of vertical uprights knitted together with diagonal arches and buttresses, the Schöner Brunnen introduced a buttressing pyramid format that would be reprised with more complex detailing in many subsequent microarchitectural shrines.

In 1382, even before work on the Schöner Brunnen had begun, the Habsburg court architect Master Michael developed his designs for the Spinnerin am Kreuz in Wiener Neustadt, in which he deployed many of the same elements seen in Beheim's fountain canopy, but with a more lyrical sensibility (fig. 8-5).

Where the Schöner Brunnen appears rigid, the Spinnerin am Kreuz appears loose and organic. In plan, the Spinnerin transforms from a triangularly symmetrical base story to a hexagonally symmetrical terminal pinnacle; consequently, there are only three flying buttresses in the lower buttress tier, and six in the upper tier. This relatively open plan allows greater visual access to the inner core of the structure than is possible at the Schöner Brunnen, where the cage of buttress uprights acts as visually dense screen. In elevation, meanwhile, the horizontal divisions between stories are less crisp than in at the Schöner Brunnen, because the buttresses play off against the structure of the inner core and its flanking tabernacles,



8-5 Wiener Neustadt, Spinnerin am Kreuz.

² *Gothic and Renaissance Art in Nuremberg, 1300-1550*, exh. cat. (New York, 1986), 35, 132-35.



8-6 Bebenhausen, Cistercian abbey,
Dachreiter.

creating effects of syncopation and elision.³ In these respects, Master Michael's Spinnerin anticipates many of the most advanced buttressing pyramid designs of the Late Gothic era, in which compositional freedom and virtuoso display went hand in hand.

Prominent public monuments like the Schöner Brunnen and the Spinnerin am Kreuz blur the line between architecture and micro-architecture, in terms of both architectural practice and social function. The long-noted formal analogies between the Wiener Neustadt Spinnerin and the south spire of the Viennese Stephansdom attest to the close connections between spire design and the design of smaller structures, even if Master

Michael himself played a smaller role at the Stephansdom than had formerly been supposed. The Spinnerin was commissioned by Wolfhart von Schwarzensee, who served Wiener Neustadt as a judge, and later mayor. The Schöner Brunnen, meanwhile, was one of the principal civic monuments in Nuremberg. Its construction was funded by the city government, and its iconographical program celebrated the imperial electoral system in which Nuremberg played an important part, especially during and after the reign of Emperor Charles IV. The fountain, moreover, occupies a conspicuous place on the city's main market square, which had been created after Charles gave his tacit approval to the razing of the Jewish quarter that had formerly occupied the site. For modern observers looking back at these events, the ugly and violent pogrom of 1349 stands out as a dark stain on the city's history, but for Nuremberg's medieval Christian citizenry the creation of the market and the subsequent erection of the Schöner Brunnen and adjacent Frauenkirche were doubtless seen as affirmations of the city's pride and its privileged place in imperial affairs.

³ Elisabeth Hassmann, *Meister Michael: Baumeister der Herzoge von Österreich*. (Vienna, 2002), 117-196; Timmermann, "Staging the Eucharist," 81.

Indeed, the creation of the market and the fountain canopy created a visually and ideologically focused public space in the center of a city that had formerly been divided into the separate precincts surrounding St. Lorenz and St. Sebaldus. Thus, while the Schöner Brunnen was far smaller than the great spires of Freiburg, Vienna, or Strasbourg, it played a roughly analogous role in marking the city's symbolic center. Like Master Michael's Spinnerin am Kreuz, it defines an intermediate scale in which the buttressing pyramid idea developed in the realm of micro-architecture began to penetrate into the built environment.

The first church tower to incorporate the buttressing pyramid principle was the crossing tower added to the Cistercian abbey church at Bebenhausen between 1407 and 1409 (fig. 8-6).⁴ This relatively simple structure, designed by the

Cistercian lay brother Georg von Salem, includes just a single battery of eight flying buttresses, arranged in octagonal array around a short tower core that supports a small openwork spire. All of these components rest on a solid masonry cone that carries the weight of the tower down to the crossing piers. Today, the tower appears rather squat, because it rises only slightly above the church's roof, but it would have appeared leaner and more autonomous when it was built, since the roof was cut back to create a framing space around the crossing in which the tower would rise freely. The conceptual autonomy of the tower comes through with particular clarity in a mural inside the church, which shows the tower's donor, Abbot Peter von Gomaringen, presenting it to the Virgin Mary as though it were a monstrance or reliquary unconnected to the rest of the building (fig. 8-7). Despite its physical integration into the fabric of the abbey church, therefore, the Bebenhausen spire remained in many respects miniaturistic.



8-7 Bebenhausen, Cistercian abbey church, wall painting.

⁴ Philip S. C. Caston, *Spätmittelalterliche Vierungstürme in deutschsprachigen Raum: Konstruktion und Baugeschichte* (Petersberg, 1997), 113. See also Timmermann, "Architektur und Eucharistie," 9.



8-8 Regensburg Cathedral, facade.

Regensburg

The idea of the spire as buttressing pyramid found perhaps its most spectacular expression in a four-meter high drawing from Regensburg showing a facade arranged around a colossal axial spire, whose openwork structure appears veiled by three successive tiers of flying buttresses (fig. 8-10). Although a number of features of the drawing appear to have influenced the construction of Regensburg cathedral's actual facade, the contrast between the grandiosity of the drawing and the

relative modesty of the facade as built raises interesting questions about the role of architectural fantasy in the later Middle Ages. This ambitious drawing may well have been meant to assert the artistic leadership of a Gothic cathedral workshop with a long tradition of achievement that was being challenged by the emergence of other workshops in the area.

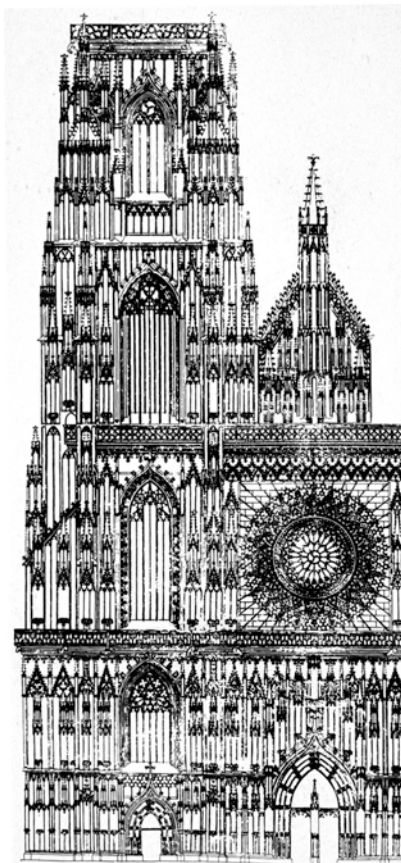
Regensburg Cathedral was no mere upgraded parish church. The city had been seat of a diocese since the eighth century, and the cathedral's reconstruction in the Gothic style, which began in the 1270s, reflected knowledge of the most up-to-date and sophisticated French Rayonnant designs. Indeed, Regensburg Cathedral has long been recognized as an enlarged version of Saint-Urbain in Troyes, despite the contrast between the cathedral's muscularity and the brittleness of its French prototype. In the late thirteenth century, therefore, Regensburg Cathedral was perhaps the most architecturally advanced church under construction east of the Rhineland. Construction proceeded relatively rapidly between 1280 and 1380. By 1325 the entire choir and most of the transept were completed, including a reinforced crossing meant to support a central tower.⁵ No such tower was built in the Middle Ages, and attention turned to the construction of the nave, which took place between 1325 and 1341.⁶ Then, between 1341 and 1380, the south tower of the west facade was built up to its full medieval height, just above the third story (fig. 8-8).

⁵ See Manfred Schuller, "Bautechnik und Bauorganisation," in *Der Dom zu Regensburg: Ausgrabung, Restaurierung, Forschung*, ed. Peter Morsbach, exh. cat. (Munich and Zurich, 1989), 80.

⁶ Achim Hubel, *The Cathedral of Regensburg*, trans. Genoveva Nitz (Munich, 1991), 7.

In formal terms, this south tower follows the example set by the rest of the rather sober exterior. Ambitious Rayonnant precedents inform the design, as is evident in the Strasbourg-derived statue canopies of the buttresses, for example, but the overall effect at Regensburg is mural and surprisingly stark. In the lower story of the tower only two small lancets pierce the wall, while in the second story all the tracery forms are carved in shallow relief. Even the use of tracery harpstrings in the upper level does little to relieve the flatness of the facade, since the mullions are arranged in the plane of the wall. Perhaps the most novel feature of the facade, one that may even have influenced Peter Parler, was the use of an exterior balustrade to divide the first story from the second, forming a sort of lower sockel zone.⁷ In general, however, the appearance of the south tower was both sedate and traditional.

By the time the third story of the south tower was completed in 1380, the tremendous progress of Gothic architecture in central Europe was making the Regensburg facade look outmoded. Levels of decorative richness formerly seen only at the Rhenish cathedrals of Strasbourg and Cologne had appeared not only in Peter Parler's upper choir of Prague, but also in the elaborate rose-window of St. Lorenz in Nuremberg. Other Parler projects including the Frauenkirche in Nuremberg and the colossal Ulm Minster also threatened to eclipse the cathedral of Regensburg, once the most sophisticated building in the region.



8-9 Regensburg, so-called double-tower design for cathedral facade.

⁷ See Jaroslav Bureš, "Der Regensburger Doppelturmplan: Untersuchungen zur Architektur der ersten Nachparlerzeit," *Zeitschrift für Kunstgeschichte* 49 (1986): 1-28.

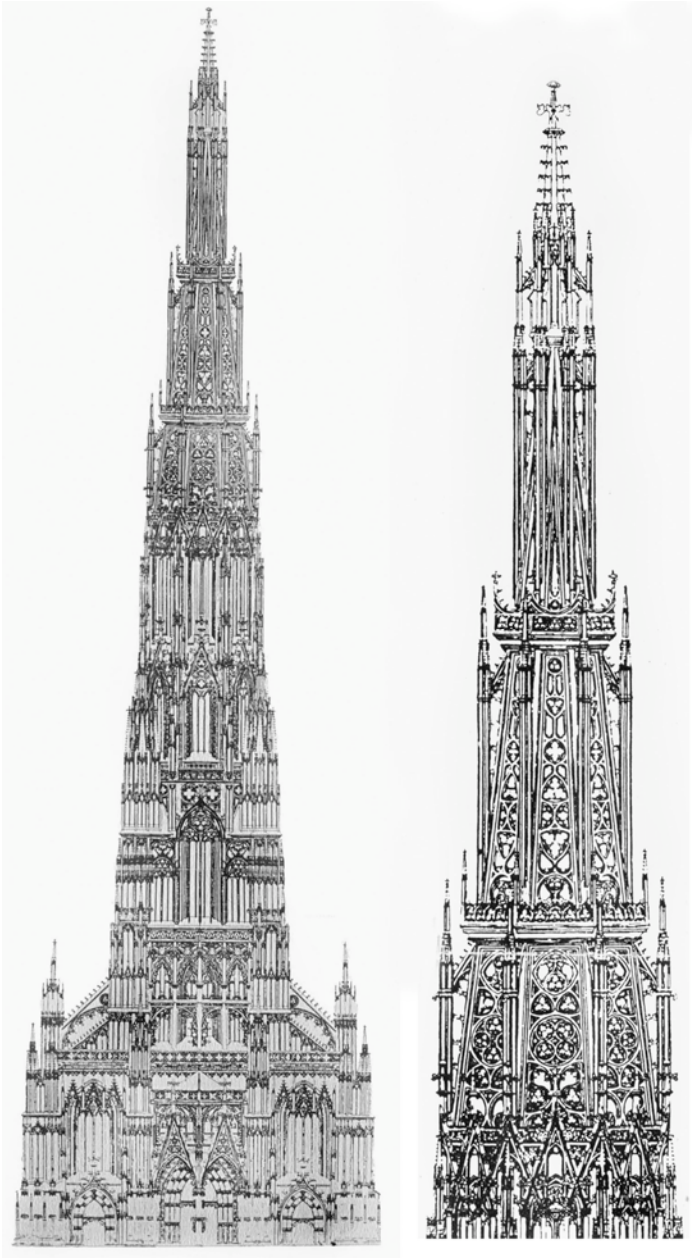
Evidently in response to these challenges, the Regensburg workshop produced a large drawing of an ambitious and sumptuously decorated two-tower facade--or, more properly, of all the sections of such a facade except the south tower (fig. 8-9).⁸ With its dense cladding of tracery panels and niches, this "two-tower" drawing resembles the masterful Strasbourg Plan B from a century earlier, but its curvilinear tracery forms and ogee arches betray the up-to-date influence of the Parlers. A pointed turret above the rose window provides a counterpoint to the horizontality of the two prominent balustrades.⁹ The rose itself, surrounded by a vortex of tracery, synthesizes influences from Strasbourg and St. Lorenz in Nuremberg. Cusped arches in the corner turrets of the tower evoke goldwork. Overall, the drawing creates an impression of exceptional richness and sophistication.

The relationship of this drawing to the actual progress of construction in Regensburg remains poorly understood. The drawing represents a more advanced and ambitious version of the two-tower facade program introduced in the cathedral's south tower. Many features of the south tower, such as the strong balustrades and tiny side-aisle portals, recur in the drawing in more elaborate form. Even certain details, such as the diagonal molding on the outboard lateral buttress and the differing treatments of the upper and lower balustrade, seem to have been borrowed from the south tower. These formal analogies, together with the absence of the south tower from the drawing, suggest that the design was developed as a scheme for the completion of the Regensburg facade, incorporating the extant south tower. On the other hand, the lavishness of the drawing contrasts dramatically with the sobriety of the south tower as built, giving it the flavor of an ideal project. Optimal realization of the scheme in the drawing would entail destroying the south tower and starting from scratch. The development of a second ideal plan some years later suggests that this idea held strong appeal to at least a few within the Regensburg lodge, even though the economic and political problems of demolishing recently completed work must have been obvious to all involved.

The drawing mentioned earlier that depicts a single colossal tower represents the second of these ideal plans for the Regensburg facade (fig.

⁸ Friedrich Fuchs claims that a spire was intended to crown the tower shown in the drawing; see "Zwei mittelalterliche Aufriss-Zeichnungen: Zur Westfassade des Regensburger Domes," in Morsbach, *Dom zu Regensburg*, 224. It seems equally plausible, however, that the drawing was meant as an updated version of Notre-Dame in Paris or other great facades that had been left square-topped, defining their own genre whatever the original builders' intention.

⁹ One hundred years or so after the Regensburg drawing was made, an analogous turret was built at Toul. The west facade of Saint Gudule in Brussels displays a similar geometry.



8-10 & 8-11 Regensburg, single spire plan (left) and detail of its upper section (right).

8-10). Current scholarship dates this single-tower drawing to the decade 1400-1410, based on its relationship to components of the actual facade.¹⁰ Such dating also makes sense in view of the competition between great spire projects. The two-tower plan appears to date from the decade 1380-90, when the only large openwork spire completed or substantively underway was that of Freiburg im Breisgau. By roughly 1400, however, work had begun on the spire projects of Ulm, Prague, Meissen, and Strasbourg, and the scale of the tower at Vienna's Stephansdom had grown significantly under Wenzel Parler. Even the slowly growing south tower of Cologne Cathedral had reached an impressive height by that time. Small wonder, therefore, that the designers of the Regensburg lodge were interested in developing their own optimal great spire scheme.¹¹

Although closely related to the earlier two-tower drawing, this second ideal design makes no concession to the extant fabric of the Regensburg facade.¹² The drawing shows the full width and height of the projected facade, leaving no place for the stump of the south tower. The whole design serves the central spire, making this perhaps the most assertively composed spire design ever developed. The lower part of the facade is simply a visual sockel, a small horizontally-oriented base against which to measure the colossal height of the spire. The sloping form of the side aisle roofs, echoed by the richly cusped flying buttresses above, contribute to a focus on the axis of the spire. A similar geometry occurs at Ulm, but the effect is very different there because the side aisles are treated as an afterthought, without the formal elaboration of the tower bay. In the Regensburg drawing, the entire composition is articulated in the same rich manner, and a continuous balustrade unifies the tower bay with the aisles. The boxy and conservatively detailed mass of the south tower clearly has no place in this carefully calibrated composition.

A number of details of this remarkable single-spire design must be considered in order to properly evaluate its relationship to subsequent

¹⁰ Earlier the drawing had been dated anywhere from 1380 to 1480. For a review of the dating argument, see Fuchs, "Zwei Aufriss-Zeichnungen," in Morsbach, *Dom zu Regensburg*, 227-29.

¹¹ It is hard to know exactly how tall the single spire in this drawing was meant to be. Assuming that the window in the second story of the tower corresponds to the actual height of the nave, the spire height works out to roughly 120 meters. If one assumes that the portals align with the axes of the aisles, a spire of roughly 160 meters results, which would have made it the tallest spire yet designed. The latter number seems more likely, both in view of the grand pretensions of the design, and the fixed width of the cathedral vessel. The window height on the facade, however, might be larger than in the nave itself, as at Strasbourg.

¹² The second drawing was probably penned by a different hand than the first, but clearly there are many stylistic similarities between the two drawings in terms of cusp use, triplet motifs, and overall texturing. See Fuchs, "Zwei Aufriss-Zeichnungen," in Morsbach, *Dom zu Regensburg*, 227-28.

history of Regensburg Cathedral. Among the most peculiar features of the drawing is its provision for a salient porch of triangular plan in front of the central tower portal. This porch can be understood as the extension of the "visual socket" principle into the third dimension. Seen from a raking angle, the porch would provide the same counterpoint to the explosive verticality of the tower that the side-aisle roofs do when viewed head-on. It would appear almost as if one of the terminal walls of the aisle had swung into the space in front of the tower, rotating on the axis of the spire. The triangular porch thus seems to emerge from the designer's perceptive treatment of three-dimensionality and projection, skills that manifest themselves in other aspects of the drawing as well.

In the lower zone of the drawing, the designer displays familiarity with a wide variety of sources and formal types. Although he clearly knew of ogee arches, which he employs over the aisle portals, nearly all the other gables in the drawing are straight-sided. This is true even in the terminal walls of the aisles, which in other respects appear heavily indebted to the Martinsfenster zone of Ulrich von Ensingen's Plan A for Ulm. The tracery in the small chapel over the porch derives from Prague, however. The grid of free-standing cusped arches in front of the nave window appears to have no full-scale architectural precedent, recalling instead such works of micro-architecture as the altarpiece of the Chartreuse de Champmol in Dijon, executed only a few years earlier.

The transition from square to octagon in this drawing differs from other medieval spire designs because it occurs low in the overall structure of the spire. The octagonal geometry of the upper portions is fully exposed halfway up the drawing. While Freiburg has a single octagonal tower story, and Cologne one and a half--counting the transitional story as a half--the Regensburg drawing proposes two and a half octagonal stories before the spire cone even begins. The succession of so many freely rising octagonal stories makes the Regensburg design look more like a tabernacle than like a conventional great spire. This close kinship with micro-architecture becomes even more readily apparent in the upper zone of the drawing, where three successive tiers of decorative flying buttresses veil the openwork spire underneath, creating an overall form closely comparable to that of the Schöner Brunnen in Nuremberg (fig. 8-11). No such form had yet been built at colossal scale foreseen in the drawing, and, indeed, none ever would be.

It is nevertheless interesting to observe that the Regensburg scheme presents analogies with other roughly contemporary full-scale spire designs, as well as with micro-architecture. The application of flying

buttresses to the spire cone in the drawing parallels the application of staircase turrets to the spire cone of Strasbourg Cathedral. In both cases, the accretion of extra elements produced novel silhouettes without completely forsaking the proven and prestigious openwork spire format. The Regensburg drawing also includes two crow's nest observation decks, amplifying a formal theme seen in the work of Ulrich von Ensingen and his successors, and in the spire of Meissen Cathedral. Like the openwork spires of Meissen and Vienna, moreover, the spire in the Regensburg drawing features free-flowing tracery without the crisp horizontal divisions seen in Cologne Plan F, the Freiburg spire, and the work of the Ensingers and their followers. By incorporating these influences from full-scale spire design with the buttressing pyramid format popularized in the micro-architectural sphere, the Regensburg designer created one of the most impressive spire schemes in history.

Unfortunately, the identity of the Regensburg master remains unknown.¹³ His treatment of the salient triangular tower porch, his sculptural treatment of the transitional zone between the square tower story and the octagonal spire zone, and his impressively accurate use of projective geometry in rendering the diagonal facets of the spire pyramid all suggest that he was strongly attuned to the three-dimensional implications of his decisions as a draftsman. His use of flying buttresses and richly cusped arches, meanwhile, suggests a close familiarity with goldwork and micro-architecture. It may be significant, therefore, that the sculptors of the Regensburg workshop were enjoying their moment of greatest success and prominence in the years around 1400.¹⁴ Perhaps the master of the single-spire plan travelled in this circle rather than among the older architects responsible for the south tower. The line of descent from the south tower to the ideal two-tower drawing to the single-spire plan, however, shows that the designer was aware of architectural precedents from Regensburg itself as well as from Prague, Nuremberg and Ulm.

The intended function of the single-spire drawing remains as uncertain as the identity of its creator. Even more than the related two-tower plan, this drawing returned the Regensburg lodge to the vanguard of architectural design. Realization of this project would have made Regensburg Cathedral one of the greatest landmarks in medieval Europe. In practice, however, the Regensburg chapter was too poor to finance such a colossal undertaking.

¹³ Norbert Nussbaum proposes that Liebhart der Myner, who was present in Regensburg in 1395, may have been responsible for the two-tower drawing. He does not consider whether Liebhart might also have been involved with the single-tower drawing, which he dates to 1450. See *Deutsche Kirchenbaukunst der Gotik: Entwicklung und Bauformen* (Cologne, 1985), 200-201.

¹⁴ Fuchs, "Zwei Aufriss-Zeichnungen," in Morsbach, *Dom zu Regensburg*, 229.

Moreover, demolition of the recently completed south tower to make way for a new project would have been politically difficult, even if money had been readily available. The master responsible for the drawing was surely aware of these problems, and his design should perhaps be understood as an architectural fantasy rather than a realistic proposal to the cathedral chapter. Even so, the drawing would have advertised the sophistication of the Regensburg workshop, which was perhaps its function all along.

Whatever the circumstances of its production, the single-spire plan made a strong impression on the workshop culture of Regensburg. Although it could not be realized in its entirety, the drawing provided a source of innovative motifs that subsequent builders adopted on a piecemeal basis. The earlier two-tower drawing was exploited similarly. Throughout the fifteenth century, these two ideal designs for the facade remained touchstones for the Regensburg workshop, which sought to evoke something of their effects with the limited resources at hand. This adoption of motifs often resulted in distortions of the original idea. By 1410 or so a reduced version of the triangular entrance porch had been constructed in front of the cathedral's main portal.¹⁵ The kernel of the original idea was thus preserved, although it no longer functioned as an accent to the axiality of a single tower.

Borrowings from the ideal drawings continued even after the Regensburg workshop came under the direction of the Roritzer family in the second decade of the fifteenth century. Between 1420 and 1430 the lowest story of the north tower was completed, with a zig-zag motif over the windows derived from the gablets in the single-spire drawing, and perhaps also influenced by the chevrons at the base of its spire cone.¹⁶ The second story of the tower was built by 1440, with a richly crocketed ogee arch and tracery triplets similar to those in the drawings yet integrated into an overall framework derived from the earlier south tower. In the second half of the century the western wall of the upper nave was constructed, with twin windows that evidently represent a compression into the wall plane of the diagonally planted windows that appeared in the triangular portico chapel in the single-spire drawing. The so-called Acorn Tower at the center of the main facade gable, completed in 1487, derives from the analogous turret in the two-tower drawing, despite their dissimilar styles of articulation. The facade as built thus represents a compromise between the influence of the two ideal plans and the insistent presence of the blocky south tower, conformity with which dictated the outlines of the design.

¹⁵ See Fuchs, "Zwei Aufriss-Zeichnungen," in Morsbach, *Dom zu Regensburg*, 229; or Hubel, *Cathedral of Regensburg*, 27.

¹⁶ Completion dates come from Hubel, *Cathedral of Regensburg*, 9.

The continuing appeal of the two idealized facade drawings may have both depended on and contributed to nostalgia for the decades around 1400. Regensburg's fortunes had declined over the course of the fifteenth century, with plague, political infighting, and economic downturn all taking their toll.¹⁷ In 1400, however, Regensburg still enjoyed a relatively strong economy, and the reputation of the city's sculptors had reached its apogee. In practice, the chapter was not wealthy enough to implement the visionary single-spire scheme, but this may have been forgotten a few decades later. If it was believed that this plan had been a practical proposal rather than a fantasy, the implied wealth of Regensburg in 1400 must have seemed great indeed. Ultimately, the impact of the ideal facade plans probably stemmed more from their intrinsic quality than from their associations with a time of prosperity. The two-tower drawing had presented an image of richness formerly undreamed of in the Regensburg lodge, and the single-spire design had welded up-to-date architectural decoration and influences from micro-architecture into a boldly innovative synthesis of undeniable power. Although it may well have been conceived as a fantasy, it eloquently bears witness to the vitality of German spire design in the years around 1400.

Significantly, the Regensburg single-spire drawing presents a scheme for the large-scale implementation of the buttressing pyramid spire format that was not only the most ambitious design exercise of its type, but also one of the last. As its creator no doubt recognized, the technical obstacles to its realization would have been substantial. The dissolution of structure into a diaphanous skeleton of flying buttresses could proceed far more easily in the design of small-scale tabernacles than it could in the design of real buildings. The proliferation of increasingly elaborate buttressing pyramids in later fifteenth century micro-architecture, therefore, was not matched by parallel developments in the design of full-scale spires. To a certain extent, in fact, elaborate sacrament houses and shrines began to displace spires as foci of virtuoso artistic display. Because such micro-architectural monuments could not play the same public and urban roles that great spires did, however, spire construction remained a crucial part of Germanic architectural culture throughout the Gothic era. Many of the most ambitious spire designers continued to explore the openwork spire theme pioneered at Cologne and Freiburg, as discussed previously, while others developed innovative tower terminations that could be effectively realized at large scale far more readily than diaphanous buttressing pyramids could be.

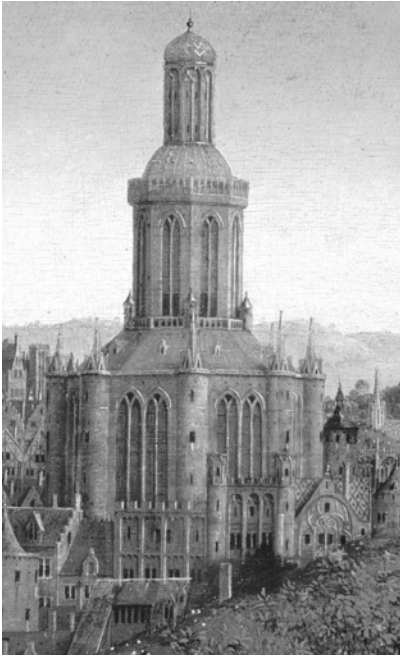
¹⁷ Hubel, *Cathedral of Regensburg*, 9.



8-12 Altenberg an der Lahn, monastery church, detail of wall painting.

Domes and Wreaths

Among the most interesting of these alternative tower terminations were those based on dome and wreath forms. Both of these formats resulted in fairly compact massing, at least compared to traditional spires and microarchitectural buttressing pyramids. Of the two motifs, the dome was of course far the older, since interlacing wreathes of arches emerged onto the architectural scene only in the Late Gothic era, over a millennium after the construction of the Pantheon, the Baths of Caracalla, and other major domed monuments of the Roman World. Significantly, though, few of the domical canopies constructed in the Gothic era drew directly on this Roman pagan tradition of heavy masonry construction. More relevant as prototypes were the timber domes built at the Church of the Holy Sepulchre in Jerusalem, and at the nearby Dome of the Rock, the Muslim shrine that was conflated in the Middle Ages with Solomon's temple. Domical timber canopies were also built atop the masonry domes of many Byzantine churches, in a tradition echoed already in the thirteenth century at the Venetian church of Saint Mark. In the imagination of many northern artists, therefore, the dome form evoked Jerusalem, Byzantium, and the exoticism of the East, rather than the Classical Roman world. At the



8-13 Jan van Eyck, Ghent Altarpiece, detail of inner lower panel.

monastery church of Altenberg an der Lahn, for example, painters working around 1300 used domical forms as crowns over the figures of the apostles flanking the coronation of the Virgin (fig. 8-12).¹⁸ Over a century later, Jan van Eyck used domed forms in his representation of the Heavenly Jerusalem in the Ghent Altarpiece (fig. 8-13). As such examples begin to suggest, the use of domes in northern late medieval art had little to do with the Italianate Renaissance impulse to systematically revive the formal language of classical antiquity. Indeed, the first dome-like tower terminations actually built in the Gothic world, those of St. Maria am Gestade in Vienna and St. Bartholomäus in Frankfurt, were clearly meant to evoke contemporary aristocratic crowns.

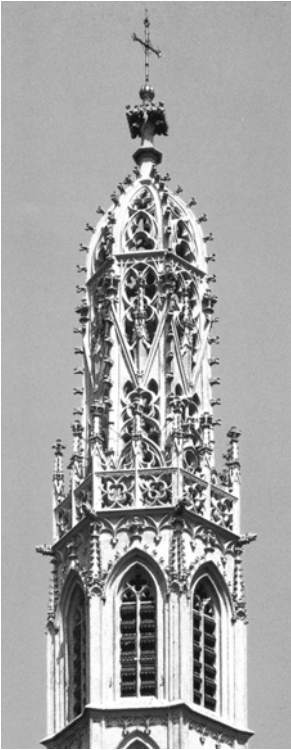
In both formal and iconographical

terms, such crownlike forms have as much in common with the wreaths of interlacing arches seen in Gothic micro-architecture as they do with ancient or Renaissance domes.

The earliest scheme for a dome-like tower termination in the northern Gothic world was probably that of St. Maria am Gestade, designed by the Habsburg court architect Master Michael around 1400 (fig. 8-14). Several decades earlier, an unusual seven-sided tower had been begun at the southeast corner of the church's choir. When its fairly plain lower stories were under construction in the late 1350s, a small openwork spire like that of Strassengel was probably the foreseen termination.¹⁹ The present

¹⁸ See Pablo de la Riestra, "Chapiteles bulbosos y casquetes en las torres alemanas entre el gótico tardío y el barroco," *Norba-Arte* 16 (1996): 183-201.

¹⁹ The most recent and authoritative source on Michael's work is Hassmann, *Meister Michael*. On the tower of St. Maria am Gestade, see especially pp. 308-18, where Hassmann provides a thorough overview of other cupolae-like structures that Michael may have known or contributed to, including the small wayside marker of Hainburg, the west tower termination of Melk Abbey, and the staircase turret of Deutsch-Altenburg, among others. The cupolae of St. Maria am Gestade, therefore, were not completely unique in their day.



8-14 Vienna, St. Maria am Gestade, tower and cupola.



8-15 Duke Rudolph IV Habsburg, "The Founder."

domical structure, however, was added to the tower only in the early fifteenth century, by which time Master Michael had introduced the cupola form to the workshop.

The first cupolae built at St. Maria am Gestade were the solid but dramatically cantilevered canopies over the western and southern entry porches of the nave. Because these canopies curve upwards slightly at their summits to support a stone Kreuzblume, each of them presents the silhouette of a nearly semicircular arch with an ogee tip. Such arches, in fact, define the lower margin of each canopy. Peter Parler, moreover, had used arches of this format extensively in the articulation of Prague Cathedral's upper choir. Thus, while it is possible that Master Michael was familiar with representations of cupolae in northern painting, or that he may have known Italian medieval experiments with the dome form, it

seems equally plausible that he may have developed his cupola designs simply by extrapolating from a common Parlerian arch form.²⁰ The cupola is a natural three-dimensional extension of the ogee arch, just as the dome is that of the round arch, or the cone that of a straight-sided gable. The rows of crockets along the corners of the entrance cupolae at St. Maria am Gestade underline their close relation to Gothic arch forms, and their relative independence of classicizing prototypes. These canopies were probably constructed during the main building campaign on the nave walls, which lasted from 1398 to 1414. The vaguely similar but taller openwork cupola of the tower, however, was constructed only between roughly 1419 and 1429. Master Michael was probably dead by that time, since he is last mentioned at work in 1402.

Stylistic similarities between the articulation of the tower cupola at St. Maria am Gestade and the slender spire of the Stephansdom strongly suggest that the former was constructed by members of the Stephansdom workshop, under the leadership of Peter Prachatitz. The openwork tracery of the cupola, the pinnacles at its base, and the pattern of gable chevrons wrapping about its middle, all recall features seen in the Stephansdom spire. The cupola form itself, though, was without parallel at the Stephansdom. It therefore appears likely that the present form of the tower cupola reflects a mixture of influences from Master Michael, who had probably determined the overall tower format already in the 1390s, and Peter Prachatitz, who was responsible for its construction and detailing.

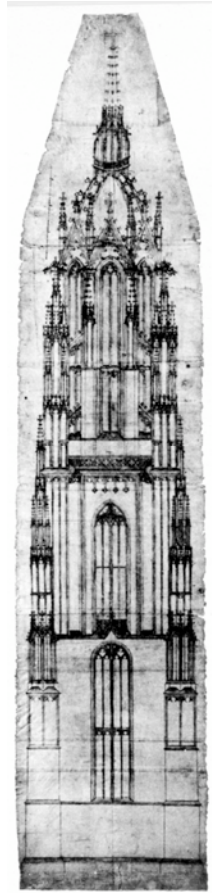
One of the most striking aspects of the tower cupola at St. Maria am Gestade is its crownlike appearance. With its zig-zagging belt of gables, it resembles the gabled crown of the Habsburgs in particular (fig. 8-15). Since Master Michael served as court architect to the Habsburg Archduke Albert III, it is tempting to imagine that he foresaw this detail and its symbolism already in the 1390s when he began work on the church. If so, then Peter Prachatitz was borrowing from Master Michael when he employed the same zig-zag gable motif in the spire of the Stephansdom. It is difficult to sort out the currents of artistic exchange between the Stephansdom and St. Maria am Gestade tower projects in this case, especially since the great gable of the Stephansdom appears to have been foreseen even in the early Freiburg-like plan for its south tower, as noted in chapter 6. Whatever the details of the tower's conception may have been, its crownlike appearance would have been unmistakable to its fifteenth-century audience.

²⁰ Hassmann (*Meister Michael*, 315) suggests that Michael may have known Andrea Orcagna's tabernacle in Florence's Orsanmichele, or the crossing dome of Pisa Cathedral, but such appeals to Italian influence seem unnecessary to explain Michael's work.

Frankfurt

The idea of the tower termination as a crown was explored not only in Vienna, but also in Frankfurt, the site of imperial elections, where the western tower of the parish church of Saint Bartholomäus was designed by Madern Gerthener, one of the most innovative builders of the early fifteenth century. The history of this tower's slow construction underlines the extent to which major spire projects depended upon a sense of common purpose at the local level.²¹ The Frankfurt project began auspiciously in 1415 as a joint venture of the city government and the clergy of St. Bartholomäus. The city government, in fact, permitted the demolition of the old city hall to make way for the foundations of the massive tower, which was destined to house not only the parish belfry, but also the civic belfry and the city watchman.²² Gerthener, the initiating architect of the tower project, worked for both the city and the church. Gerthener, moreover, worked as both a sculptor and an architect, and his tower scheme appears to have been informed by an intimate acquaintance with Franco-Flemish sculpture and manuscript illumination.²³ By its very nature, however, the Frankfurt tower project depended on German traditions of spire design and on burgher patronage. Gerthener's design for the tower thus represents an unusual synthesis of genres and media, incorporating influences from France, Germany and the Low Countries, from the courtly and civic spheres, and from architecture and painting.

Gerthener's drawing of the tower, Frankfurt Plan A, displays this mixture of influences both in its forms



8-16 Frankfurt,
Plan A.

²¹ Much of the information in this section is drawn from Friedhelm Wilhelm Fischer's *Die spätgotische Kirchenbaukunst am Mittelrhein, 1410-1520* (Heidelberg, 1962), esp. 42-50. See also Ernst-Dietrich Haberland, *Madern Gerthener, "Der Stadt Frankfurt Werkmeister"* (Frankfurt-am-Main, 1992), esp. 39-49.

²² Martin Warnke, *Geschichte der deutschen Kunst*, vol 2, *Spätmittelalter und Frühe Neuzeit, 1400-1750* (Munich, 1999), 42.

²³ Since the style of his sculptures recalls the work of André Beauneveu, Jean de Berry's sculptor-turned-illuminator, Fischer has proposed that Beauneveu's influence may help to explain Gerthener's familiarity with Franco-Flemish manuscript illumination. See *Spätgotische Kirchenbaukunst*, 48.

and in its techniques of execution (fig. 8-16). Drawn in three colors of ink, with details in perspective, Plan A seems to have been a presentation rendering rather than a shop drawing. By drawing on techniques from manuscript illumination, Gerthener made his design legible and attractive to lay audiences. The tower envisioned by Gerthener consisted of three principal parts: a solid four-square base, an octagonal tower, and a cupola. Although this design lacks the vertical thrust of Ulrich von Ensingen's work, the tapering of its silhouette combined with the subtlety of its articulation has an undeniable elegance.

The massive and simply detailed tower base acts as a stylistic foil to the more complex upper stories. The flat surface of the tower's western face is not even relieved by doors--these are located on the tower's flanks. A slender window slices down the middle of the tower's first story, its tracery more Flemish than German.²⁴ About halfway up this blocklike story, twin panels of blind tracery near the edges of each tower face subtly announce the emergence of the corner pinnacles. Slightly higher up, these pinnacles are wrapped by interlacing ogee arches, elements popular in the later fifteenth century but little known in Gerthener's day.²⁵ The second story of the tower base appears nearly as tall and massive as the first, but its articulation is more lively, with bladed flanges flanking another window with quasi-Flamboyant tracery. Slender triplets of blind tracery articulate the edges of the tower faces, displaced inward with respect to the corner pinnacles launched from the story below.²⁶ The foursquare section of the tower terminates, in Gerthener's design, in a balustrade of quatrefoil rosettes, whose conservatism reflects French influence.

In the octagonal section of the tower, the influence of German great spire design predominates. With its narrow proportions, the single-storied tower core resembles that of Freiburg im Breisgau. The free-standing corner buttresses recall the corner pinnacles of Cologne's Plan F. These buttresses carry two tiers of small flying buttresses that abut the tower core. This use of flying buttresses would subsequently become popular in Brabantine spire design, but in 1415 it was novel. The treatment of the buttress motif here, in fact, is far different than that seen in the roughly contemporary Regensburg single-spire drawing. Where the Regensburg drawing, with its multiple tiers of exceedingly slender buttress uprights, recalls fragile micro-architectural monuments, the Frankfurt design appears more robust

²⁴ Fischer, *Spätgotische Kirchenbaukunst*, 46.

²⁵ Fischer (*Spätgotische Kirchenbaukunst*, 46) attributes their presence to Parler influence, without citing a particular instance.

²⁶ Similar articulation strategies may be seen in the brick towers of St. Martin in Landshut and the Frauenkirche in Munich.

and traditionally architectural. Perhaps Gerthener was evoking the source of the Cologne corner pinnacles, the flying buttress uprights of the Cologne choir. The detailing of Gerthener's proposed tower core, moreover, was rather conservative, with straight-sided gables and simple pinnacles that would not have looked out of place at Freiburg nearly a century earlier.

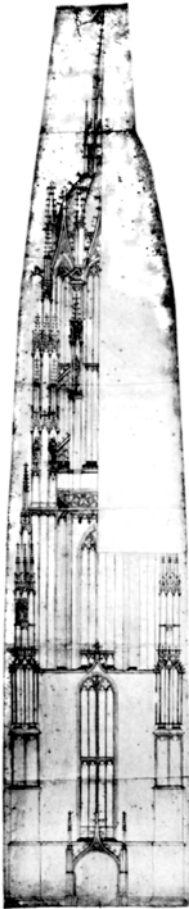
The most unusual element of Gerthener's design was its cupola. Despite its lantern and terminal pinnacle, the domed form dominates the upper reaches of the composition. This departure from the traditions of spire design deserves to be understood in light of Gerthener's exposure to the painting and illumination workshops of Berry and Burgundy. Cupolas and domes of various sorts were relatively common in the architectural fantasies of French miniaturists, and such precedents clearly informed Gerthener's design for the Frankfurt tower.²⁷ Because St. Bartholomäus was the electoral church of the German kings, moreover, Gerthener and his patrons probably chose a crownlike tower cupola to display their connection with the rituals of kingship. Whatever the iconographical significance of its cupola, Gerthener's Plan A deserves recognition as a sophisticated synthesis of manuscript illumination and spire design.

Gerthener's vision dominated the subsequent history of the Frankfurt tower workshop, but changes to his design were introduced as work slowed over the course of the fifteenth century. The united support of the city council and the parish had permitted rapid construction in Gerthener's day, with the first story of the tower being completed in 1423, after only eight years' work. Gerthener's successor Leonhard Murer von Schopfeim modified the details of Gerthener's design in his Plan B (fig. 8-17), bringing both the tracery forms and the style of draftsmanship more into line with contemporary German architectural practice. A surviving ground plan for the tower also probably dates to his tenure as master (fig. 8-18). By the time of Leonhard's death in 1434, he had completed most of the second story of the tower.²⁸

Work slowed dramatically at this point, as the alliance of the parish and the city government began to dissolve. The growth of civic power threatened the clergy of St. Bartholomäus, who were reluctant to permit the establishment of other parishes in the city. Evidently fearing that they were losing control over even their own building, the clergy hired their own architect rather than working with the city government, a particularly

²⁷ Fischer notes that the domed crossing tower of Passau Cathedral was being erected at roughly the same time, but in that case the influence was from Italy rather than Burgundy (*Spätgotische Kirchenbaukunst*, 48). Passau may have influenced Munich's Frauenkirche, where the domed western towers were completed by ca. 1525. See Alexander von Knorre, *Turmvollendungen Deutscher gotischer Kirchen im 19. Jahrhundert* (Cologne, 1974), 4.

²⁸ Fischer, *Spätgotische Kirchenbaukunst*, 42.



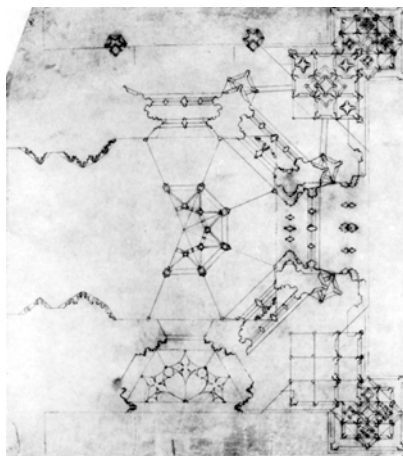
8-17 Frankfurt, Plan B.

willful gesture given the significant role that civic monies had played in the project. In the next half-century, the parish was scarcely able to complete the square-planned lower part of the tower, even though its construction was well underway in Gerthener's day.²⁹

At this point the city council evidently became frustrated with the pace of tower construction. Having been equal partners in initiating the tower project, and having contributed large sums to what was to have been in effect a civic as well as religious monument, the wealthy city government had both the reason and the means to assert its influence. In 1483 they called Matthäus Böblinger from Ulm to Frankfurt as a consultant. Thanks to Böblinger's input, Hans Fluck von Ingelheim was hired to complete the tower. He erected the vault of the second story, bringing construction of the square part to a close, and he began to build the tower octagon and its buttresses. By 1491, however, he was driven away by arguments with the parish clergy, who hired Nicholas Queck, the master of Mainz Cathedral, in his place. Queck's task, it appears, was to spare the parish further commitments to the tower project by dramatically reducing costs. He developed a new plan for the tower, Plan C, in which the flying buttresses are dramatically simplified and the cupola eliminated entirely. The city council protested, forcing Queck to leave Frankfurt in 1497 despite his complaints to the archbishop of Mainz. He was replaced by Jakob Bach von Ettlingen, the personal architect of the Palatine Elector of Heidelberg. Under

²⁹ The first master hired by the parish alone was Michael Kurze, a native of Ulm who worked in Frankfurt from 1434 to 1438. His successor Jost Schilder directed operations until 1463, at which point he was called to work in Strasbourg. In 1447 Schilder supervised installation of the tower's bells, but the second story of the tower remained incomplete even at the end of his long tenure. Between 1463 and 1472 Master Bartholomäus von Schopfeim could proceed with construction only sporadically, as revenue became available to the parish. Over the next decade, no work at all was done on the tower by his successor Jörg Östreicher. Fischer, *Spätgotische Kirchenbaukunst*, 42.

Bach, the workshop regained something of its old form. He returned to Gerthener's design, the city council having declared that "the old plan is the best."³⁰ In 1507 the parish at last accepted Bach as master, and, despite continuing friction between the two factions, he completed both the tower octagon and the cupola by 1513. Although the lantern and terminal pinnacle were not yet in place, this marked the end of the medieval construction project.³¹ The tower owes its present configuration to the restorations carried out in the nineteenth century, which substantially accord with Gerthener's Plan A (fig. 8-19).³²



8-18 Frankfurt, St. Bartholomäus, ground plan of tower.

The crown-like tower terminations designed for Frankfurt's St. Bartholomäus and Vienna's St. Maria am Gestade were strikingly unusual in their early fifteenth-century context. Over the course of the fifteenth century, further alternatives to the traditional pyramidal spire form would be developed, especially in the Low Countries. As the following chapter explains, many of these Brabantine and Flemish belfry designs recall Gerthener's Frankfurt design both in their overall proportions and in their use of flying buttresses alongside the tower core. Direct sequels to the cupola forms seen in Vienna and Frankfurt, however, were rare. In the German-speaking world, meanwhile, the decades around 1500 witnessed new experiments in the use of wreath and dome forms as tower terminations.

³⁰ Fischer, *Spätgotische Kirchenbaukunst*, 44.

³¹ According to Fischer (*Spätgotische Kirchenbaukunst*, 44), the city council in 1513 ordered that the crane be taken down from the tower and a watchman's perch installed. It is not clear why the council, whose goal all along seems to have been completion of the tower in accordance with Plan A, was suddenly willing to abandon Gerthener's vision in this last inexpensive detail.

³² The building had fallen into disrepair even before the fire of 1867, which triggered the restoration work.



8-19 Frankfurt, St. Bartholomäus,
view of tower from west.

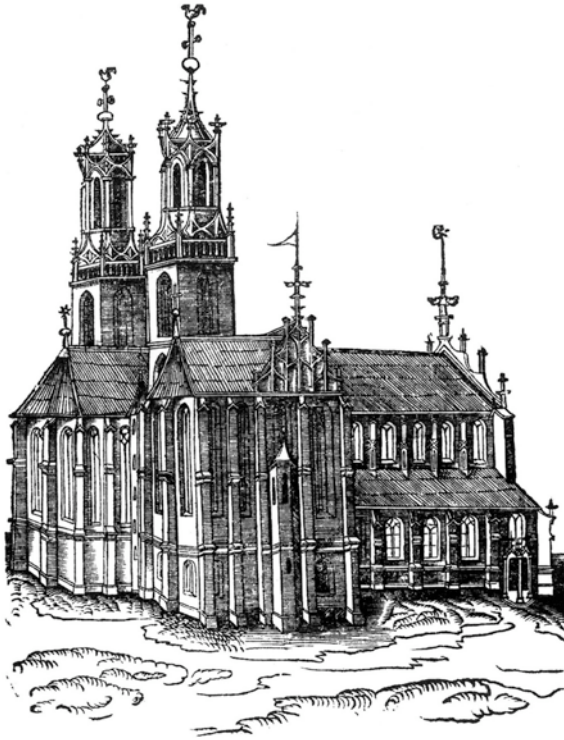
Augsburg and its milieu

Augsburg, in the late fifteenth century, emerged as one of the principal centers of such experimentation. Burkhard Engelberg, the city's most noted late Gothic designer, intended to crown the great church of Saints Ulrich and Afra with twin wreathed towers, which would rise alongside the choir, as a woodcut from 1516 shows (fig. 8-20).³³ These interlaced wreaths of ogee arches had much in common with those seen in earlier micro-architectural monuments, such as the sacrament house of Schwäbisch Hall. In Engelberg's scheme, though, the wreaths would have stood alone, without the vertical elements that made sacrament houses and other such shrines resemble traditional pyramidal spires. Like Madern Gerthener, therefore, Engelberg was able to contrive a novel tower termination format without abandoning the formal vocabulary of Late Gothic design.

A far more direct challenge to the Gothic design tradition came with the revival of interest in true dome forms, even though this revival initially had little to do with the spread of Italianate Renaissance classicism. Instead, interest in the holy sites of Jerusalem appears to have played a stronger role.³⁴ A 1486 woodcut illustration of

³³ Bischoff, *Burkhard Engelberg*, 244.

³⁴ De la Riestra, "Chapiteles bulbosos," 184-88.



8-20 Augsburg, church of Saints Ulrich and Afra, woodcut of Burkhard Engelberg's scheme for the completed church.

Jerusalem by Erhard Reuwich, for example, shows the Dome of the Rock, identified as the Temple of Solomon, inaccurately equipped with a swelling onion dome (fig. 8-21). Two decades later, in 1506, a shrine representing the Holy Sepulchre was built in the Augsburg church of Saint Ana, incorporating a prominently swelling dome, far wider at its equator than at its base (fig. 8-22). Both the onion dome and the swelling dome formats would enjoy widespread popularity as tower terminations in the sixteenth century.

Among the first tower schemes to incorporate these new forms were those developed by the Augsburg carpenter and sculptor Adolf Daucher, who in 1514 and 1515 produced a series of models showing his designs for the so-called Luginsland tower. One of these, in particular, terminates in an ogee-profiled dome like an onion dome seen from the equator upwards (fig. 8-

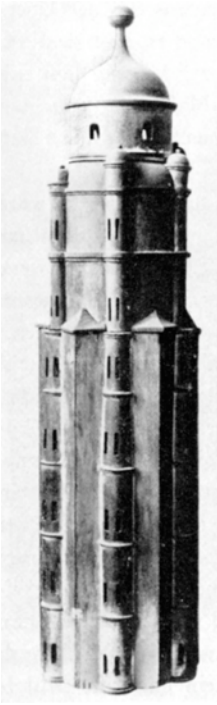


8-21 Jerusalem, Dome of the Rock, 8-22 Augsburg, church of Saint Ana, from a woodcut by Erhard Reuwich. Jerusalem shrine.

23). Although Daucher was one of the first northern sculptors to explore Italianate Renaissance forms, these models are not explicitly classicizing in their formal vocabulary. Daucher's embrace of simple irreducible forms like the dome and the cylinder, however, involved a rejection of the principles of partiality and subdivision that had long been central to Gothic design in general, and to Gothic spire design in particular.

Ideas from both Engelberg and Daucher appear to have informed Engelberg's former assistant Hans Hieber, who in 1520 created an elaborate model of the pilgrimage church of Schöne Maria, which was to have been built in Regensburg (fig. 8-24).³⁵ The twin towers flanking the east end of the nave, with their wreathed octagonal crowns, clearly derive from Engelberg's designs for the towers of Saints Ulrich and Afra. Each of them, however, terminates in a series of three progressively smaller spheres, recalling the the terminal sphere in Daucher's Luginsland tower model. The flattened onion-shaped half-domes of the cylindral excedrae flanking the church's hexagonal choir, moreover, resemble those in Daucher's model. Altogether, therefore, Hieber's design for Schöne Maria represents a

³⁵ Franz Bischoff, "Les Maquettes d'architecture," in Recht, ed., *Bâtitseurs*, 287-90.



8-23 Augsburg,
Luginsland, tower
model.



8-24 Regensburg, Schöne Maria, model.

fascinating synthesis of the formal experiments undertaken in Augsburg in the years around 1500.

Even in the southwestern quadrant of the Empire, where more traditional approaches to openwork spire design prevailed, the early sixteenth century witnessed a growing interest in domical forms, as Lorenz Reder's drawing of the planned Constance westwork demonstrates (fig. 7-25). The unusual openwork onion dome seen in this drawing may slightly predate Daucher's models of the Luginsland tower, but Reder, who was clearly familiar with the work of Burkhard Engelberg, may well have been attuned to the new ideas about tower articulation that were being developed in Augsburg.³⁶ Reder's openwork dome had no direct sequels, except for the simpler structures later erected on the Constance westwork itself. This tepid reception is not altogether surprising, since the treatment of the dome as

³⁶ Fischer, "Neu entdeckter Turmriss," 28-30.

openwork raises both technical and aesthetic problems. It would have been difficult, structurally speaking, to construct the nearly horizontal haunches of an openwork dome, at least without some sort of supporting structure from below. In visual terms, meanwhile, the openwork articulation expressed quintessentially Gothic tendencies to create complex, striving, organic, diaphanous structures, tendencies opposed to the clarity and solidity generally characteristic of domes. As these problems suggest, the openwork articulation could coexist only rather uneasily with the alternative tower termination formats explored in the closing decades of the Gothic era. Daucher's streamlined models, by contrast, embody the taste of a newly emergent sensibility that has often been associated with the advent of the Renaissance in the north. Significantly, however, streamlined and simplified tower terminations of various sorts had enjoyed popularity in the German world well before the pivotal decades around 1500.

Streamlined and Reductive Tower Terminations

Throughout the history of Gothic architecture, competing impulses towards convolution and concision had coexisted, sometimes side by side. In general, there tended to be a rough correlation between the complexity of a building and its ecclesiastical or social rank. Mendicant churches, for example, tended to be simpler in their articulation than cathedrals. With the emergence of free cities as major patrons of church and spire construction, though, these lines could become somewhat blurred, as the cathedralesque grandeur of the great parish churches in Freiburg and Ulm demonstrates. The elaborate spires considered in this book, naturally, were built in workshops whose members and patrons aspired to such grandeur. Even within such workshops, there could be gradations in complexity. In some cases, this could result from changes in taste over time. In both the Cologne Cathedral choir and the Freiburg west tower, for instance, the upper stories are far more complex in their articulation than the lower ones. In other cases, such contrasts arose from the architect's self-conscious choices. Madern Gerthener, for example, clearly intended to contrast the richness of the Frankfurt tower octagon and cupola with the stark simplicity of the square tower base below.

The west facade of Magdeburg Cathedral provides a good example of how such mannered contrasts between richness and simplicity could affect late Gothic spire design (8-25). The cathedral's massive west block, which architecturally expressed the power of the local archbishops, grew over a

long series of campaigns.³⁷ The simple and boxy north tower was begun in the mid-thirteenth century, with construction of its southern pendant following several decades later; the overall form of this facade block followed from that of twelfth-century facades like that of the Neuwerkkirche in Goslar, and it would later go on to influence the design of the Meissen Cathedral facade.³⁸

By circa 1300, a master familiar with the complex and sophisticated style of the Strasbourg and Cologne cathedral workshops had begun to construct an elaborate portal zone between the austere towers at Magdeburg, establishing a pattern of formal contrasts that would affect all subsequent work on the facade.³⁹ In the late fourteenth century, a Prague-trained master named Kunzel Vrankenford added a Parlerian balustrade to this



8-25 Magdeburg Cathedral, west facade.

richly articulated central zone. Kunzel, who likely knew of the blocky belfry story then being built between the towers of the Strasbourg Cathedral facade, was probably the first designer to contemplate adding a similar story between the towers at Magdeburg, but actual construction of this zone followed only later in the fifteenth century.⁴⁰ Major campaigns on the Magdeburg facade were promoted by Archbishop Ernst von Wettin and his immediate successor Albrecht von Brandenburg, during whose

³⁷ The massive facade and large nave were begun in the episcopate of the ambitious Archbishop Wilbrand; work on the facade was actively promoted by Archbishop Burkhard III, whose attempts to repress the rights of the Magdeburg citizenry ended with his murder in the local City Hall dungeon in 1325. See Hans-Joachim Mrusek, *Drei deutsche Dome* (Munich, 1983), 194-96.

³⁸ See Michael Kirsten, "Typus und Stil der Westturmfront des 14 Jahrhunderts," in Hütter et al., *Das Portal*, 84-87.

³⁹ See Jaroslav Bureš, "Der Westbau der Magdeburger Doms: Ein Beitrag zu den Ausstrahlungen der kölnischen und strassburgischen Hüttenkunst nach Niedersachsen," *Jahrbuch des Zentralinstituts für Kunstgeschichte*, 3 (1987): 77-107.

⁴⁰ Bureš, "Der Westbau," 98-101.



8-26 Nördlingen,
St. George.

episcopate the towers and their rather stumpy spires were completed in 1520.⁴¹ The master responsible for building these spires, Bastian Binder, evidently felt that the character of the facade called for a concise solution, whose solidity and murality would complement that of the boxy towers below. Slender flying buttresses with complex profiles do flank the octagonal cores of the uppermost tower stories, but the fragility of these buttresses actually underlines the massiveness of the tower cores, which are pierced only by slender lancet windows. Thus, while the Magdeburg facade includes richly decorative elements, the ensemble as a whole conveys an impression of great solidity and formal clarity; its visual power differs qualitatively from that of openwork spires and other such diaphanous structures.

The impulse towards streamlining and concision was particularly marked in buildings of lower ecclesiastical and architectural rank than Magdeburg Cathedral, a large basilica that served as the seat of a venerable and prestigious archdiocese. Hall churches, significantly, were rarely crowned with elaborately decorated spires; the Stephansdom in Vienna stands as the only truly dramatic exception to this rule. At Nördlingen, for example, sheer tower size eventually won out over complexity. The parish church of Saint George in Nördlingen, a hall church, was begun in 1427 by Ulrich von Ensingen's son-in-law Hans Kuhn. In the middle decades of the fifteenth century many builders of various backgrounds contributed to the church's

⁴¹ Mrusek, *Drei Dome*, 198. See also Ernst Schubert, *Der Magdeburg Dom* (Vienna, 1974), 36-37.

construction, but links with the Ensinger tradition remained close, in part because the church was meant to have a great western tower, comparable to although smaller than that of Ulm. In 1472, therefore, Moritz Ensinger presented the city council with a plan for the tower, which he foresaw with five masonry stories and a wooden openwork spire. In practice, however, master Heinrich Echser completed the tower in 1490 with seven stories and no spire at all (8-26). The resulting structure, with its great height and solid massing, serves as a prominent and impressive visual focus for the town and surrounding region, but it lacks the airiness, vertical élan, and geometrical complexity of the Ensingers' openwork spires. Unlike the facade of Magdeburg Cathedral, moreover, it has no zones of decorative elaboration to serve as foils to the austerity of the tower.

Streamlined or reductive tower forms necessarily enjoyed greater popularity than complex spires in regions, such as Bavaria and the Baltic coast, where good building stone was not readily available. In Lübeck, for example, two huge but simple wooden spires were built early in the fourteenth century to crown the massive facade of the Marienkirche, an enormous brick basilica built in a simplified cathedralesque manner. In that relatively early instance, formal streamlining resulted principally from material constraints. In the later years of Gothic, though, the formal concision characteristic of brick construction emerged as an aesthetic ideal in its own right, especially in the design of hall churches with starkly simple exterior massing. The towers and spires of such buildings, naturally, tend to be less elaborately detailed than most of the "great spires" considered in this book.



8-27 Landshut,
St. Martin.

The tallest of these simple streamlined spires was that of St. Martin in Landshut, itself one of the largest hall churches built in the Gothic era (8-27).⁴² The construction of St. Martin reflected the pride both of the local citizenry, and of the local branch of the Bavarian ducal family, the Wittelsbachs. The first campaign on the church, in which the slender choir was built to the designs of Hans Krumenauer beginning in 1385, was fueled primarily by civic pride. Over time, however, the Wittelsbachs began to play a more prominent role, especially after they suppressed a revolt by the wealthy citizens in 1410. Perhaps because of this tense political situation, work on St. Martin proceeded only relatively slowly in the middle decades of the fifteenth century. Hans von Burghausen, a prolific architect supported by the Wittelsbachs, established the striking design of the nave, with its slender columns, but he was unable to complete even the walls of the vessel before his death in 1432. It was only eight years later that his nephew and successor Hans Stethaimer undertook construction of foundations for the church's massive western tower. By 1475 the tower had risen to the height of the nave, permitting the completion of the nave vaulting in time for the wedding of the Wittelsbach Prince George with Princess Jadwiga of Poland. The pairing of the ducal and civic arms in the nave bosses suggests that a sense of common architectural purpose had returned to Landshut by then. In the decades that followed, the brick tower rose steadily; its simple pyramidal spire was completed in roughly 1500. A free-standing wreath of interlacing ogee arches at its base alludes to the sophisticated forms of German Late Gothic microarchitecture, but this small dose of ornament does little to counter the spire's spartan appearance. With an overall height of 133 meters, the Landshut tower is undeniably impressive, and it remains the tallest brick tower in the world today. In technical and artistic terms, however, it does not rank with the even larger and far more elaborate spires completed decades earlier at Strasbourg and Vienna, or with their progenitor in Freiburg and its other major derivatives.⁴³

⁴² See Peter Kurmann and Brigitte Kurmann-Schwarz, *St. Martin zu Landshut: Hans von Burghausen und seine Kirchen*, vol. 1 (Landshut, 1985), esp. 38-39. See also Warnke, *Spätmittelalter*, 33-37.

⁴³ This fact undercuts Warnke's argument (*Spätmittelalter*, 43) that aristocrats such as the Wittelsbachs were more effective than city governments as patrons of large-scale spire construction. Warnke's discussion depends on a contrast between the aristocratically-sponsored "successes" at Landshut and Munich, on the one hand, and the "failed" civic projects at Ulm and Frankfurt. This biased sample makes no mention of the important civic contributions to the successful projects at Freiburg, Strasbourg, and Vienna, nor does it mention the failure of episcopal and aristocratic initiatives such as those in Cologne and Prague. Construction of the Ulm tower was stopped for technical rather than socio-political reasons, moreover, and the Frankfurt tower was substantially completed in the Middle Ages. Most importantly, though, the Landshut and Munich tower projects involved fairly simple



8-28 Munich, Frauenkirche.

The twin towers of the Frauenkirche in Munich, with their curious bulbous terminations, represent an even more radical alternative to the traditional great spire type (fig. 8-28). In these curious structures, the dome format that had been more tentatively explored in German tower design since the early fifteenth century found expression in a concise and forceful idiom closely related to that seen in Landshut's St. Martin.

Like that church, moreover, Munich's Frauenkirche grew as the fruit of both civic funding and aristocratic initiative, coming this time from the Wittelsbach Duke Albert IV, the Wise. The bulk of the church was built to the designs of master Jörg Ganghofer between 1468 and 1488, a remarkably short time given the size of the church. This rapid pace of construction attests both to the strong financial support the project received

designs that lacked the formal and technical sophistication of the openwork tradition. The successful completion of these structures, therefore, was a far less impressive achievement than the construction of spires like those of Freiburg, Strasbourg, or Vienna.



8-29 Heilbronn, St. Kilian, tower.

from indulgences and taxes, and to the extreme simplicity of the architecture in question. The Frauenkirche is a brick-walled hall whose planar exterior surfaces are unrelieved even by salient buttresses. The twin-towered facade incorporates some decorative brickwork, and the towers do change in section from square to octagonal, but the overall impression is one of overwhelming force rather than formal sophistication. Significantly, though, the bulbous tower terminations were added only in 1525.⁴⁴ By that time related experiments with domical forms had been undertaken in nearby Augsburg, and the hegemony of northern Gothic architectural culture was beginning to erode in the face of Italianate Renaissance ideas. There is nothing explicitly classical about the Munich cupolae, but their stark formal irreducibility distinguishes them from traditional great spires, and even from earlier Gothic cupolae like those of Frankfurt's St. Bartholomäus or

Vienna's St. Maria am Gestade. The completion of the Munich cupolae thus marked one sign that the heyday of German Gothic spire construction was drawing to a close.

⁴⁴ It remains unclear how early the cupolae were conceived, however. Pablo de la Riestra, citing the recent work of Hans Ramisch, argues that the cupolae were already part of Ganghofer's original plan of 1468 ("Chapiteles bulbosos," 192). Warnke argues, however, that they were designed only in the 16th century (*Spätmittelalter*, 38-39). Warnke notes the close relationship between their form and that of the "Temple of Solomon" shown in Reuwich's woodcut illustration for Bernard von Breydenbach's Jerusalem travelogue, and he also cites a 1489 debate about whether to accept a tower model made by Wibold, the master carpenter associated with the project. This debate about dating has significant implications for the originality of the cupola design: if indeed they were conceived before 1500, they would predate most of the comparable dome designs developed in Augsburg.

The end of this golden age of spire construction, like the end of the Gothic era more broadly, resulted from the intersection of many complex factors. In purely artistic terms, the growing prestige of Italianate neo-classical design surely played a role in making the striving forms of Gothic spires appear obsolete. In the rare instances when German architects attempted to create spirelike forms out of Italianate components, the results were less than compelling. In 1513, for example, Hans Schweiner stacked successively smaller octagonal stories together to create the tapering tower termination of St. Kilian in Heilbronn, but the inherent modularity of the classical vocabulary keeps his design from achieving the vertical élan of traditional Gothic spires (fig. 8-29).

Ultimately, changing social conditions probably proved even more dangerous to the spire-building enterprise than the importation of Italianate forms. Free cities had been the most effective patrons of large-scale spire construction in the German empire, but their power diminished in the sixteenth century as the power of local princes grew. This fact, together with the chaos of the Reformation and the Peasant's War, served to erode the stable base of civic patronage on which the most ambitious spire projects depended. These artistic and social changes, of course, did not happen overnight. The growth of interest in classical forms, for example, did not prevent German builders from drawing actively on Gothic traditions throughout the sixteenth century, and even beyond. Nevertheless, large-scale spire Gothic spire construction in Germany had effectively ground to a halt by 1520. By that time, the spectacular achievements of Germanic spire builders had affected not only the skylines of many cities in the Empire, but also the architecture culture of late medieval Europe more generally.