

Vaults at St. Etienne, Auxerre

Phase 3: ca. 1240

Bays 8, 9, 10, 11, 12

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Phase 3 includes the high vaults of the cathedral chevet. Thanks to recent studies of the roof framework dendrochronology, these vaults can be dated to the period shortly after 1235, the felling date for the cross beams in the roof.¹ The chevet exterior was restored thoroughly in the 1870s, and its vaults were repaired extensively in 1932-33.² Due to our limited knowledge of the scope of the earlier repairs, the chevet vaults display particularities that can be characterized, but conclusions must be drawn with special care.

In the chevet there are four 4-part vaults and an 8-part hemicycle vault. From the clerestory capitals to the vault keystones the vaults rise an average of 8.50 m. Half of that rise, or 4.25 m of the total height, is above the wall arches that mark the springing of the lateral voutains (thus a “tall” clerestory). The high vaults are about 35 cm thick at points where they can be measured through holes in the web, therefore about 10 cm thicker than the side aisle vaults of the chevet.

In the hemicycle voutains nearly the entire curve of the vault is accomplished in the last meter of rise. The development of the 7 radiating voutains is relatively regular, except that in the straight, western voutains the coursing follows the direction of the vault rather than being perpendicular to the exterior wall. The vault’s highest point lies in its broad western voutain. Since this voutain curves downward to meet the large transverse arch at the entrance to the hemicycle, its form is markedly domical at its summit. However this situation may be a byproduct of the 1930s repairs, when web stones near the centers of the vaults were replaced.

The four straight bays are flatter at their crowns than in the hemicycle, and are uneven from one side to the other of the keystones in the longitudinal sense. The vault webs rise higher than the keystone in the north and south voutains of each bay; most often the highest point in a vault lies in the north voutain. Approaches to *tas-de-charge* construction in these vaults are quite varied. For example, at the south pier supporting vaults 9 and 10 there is large block masonry coursing in the lower third of the longitudinal voutains. However, the coursing pattern varies from one vault to another, and the point where smaller web masonry begins is different from vault to vault. Apparently, the essential *tas-de-charge* consists of four courses above the capital level and from there the large block continuations no longer tie into the side walls directly. Looking at the equivalent sections above the pier that supports vaults 10 and 11, the contrast is even more pronounced. Large blocks are present at the base of bay 10, but in bay 11 the smaller web masonry begins low in the voutain, at least 8 courses below the point of change in its neighbor. Thus, even when the contours of the vaults are relatively similar, significant differences can be found in the practice of laying up elements.

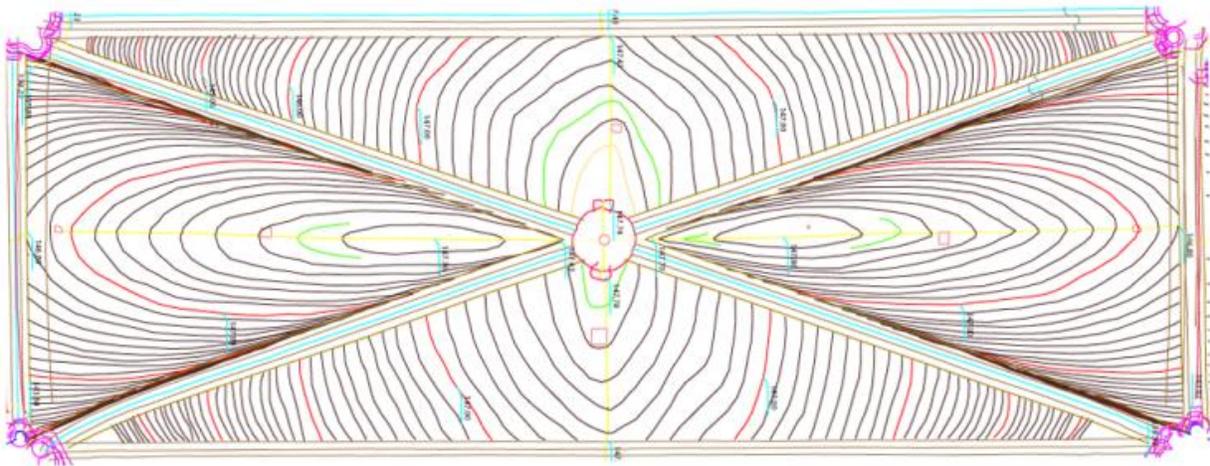
¹ Christine Locatelli, “Les charpentes de la cathédrale Sainte-Etienne d’Auxerre: Dendrochronologie,” report of October 2001. Summarized in *Les Charpentes du XIe au XIXe siècle*, Paris 2002, 145.

²² Ulrich Knop, *Histoire de la restauration du chœur de la cathédrale Saint-Etienne d’Auxerre*,” Thèse de doctorat, Institut d’Histoire de l’Architecture de l’Université de Stuttgart, 2003. 182-194.

In the lateral vaults of the chevet high vaults large block masonry was laid to a point well above the capitals of the wall arches. The problem posed by backing up the diagonal ribs to create a solid link with the flying buttresses resulted in some peculiar geometries in the lateral surfaces of these vaults. Their masonry passes in front of the lower wall arch moldings and the wall arch capital. The surfaces twist back toward the area available for attachment to the buttress, which originally was not built with the width needed for the later vault configuration. The contour plan does not indicate this aspect of the vaults very clearly, since it is an essentially vertical phenomenon, much more apparent to the eye.

In the chevet high vaults the meeting of the web and the diagonal ribs is handled in two different ways. In vaults 8 and 9, just above the point where large block masonry gives way to the web, a single course of small block set radially to the diagonal ribs makes up the interface between the ribs and the lateral vaults. This row of blocks ends short by more than a meter of the vault's summit. Vault 10 does not have this feature, while it appears again in vault 11. Vault 12, the hemicycle vault, also lacks the radial course. Again, more than one type of execution is found in these vaults.

The chevet vaults were probably completed around 1240, marking the end of structural operations in the 13th-century chevet.



Vault 10 contour drawing



Vaults 8-12 (L to R)