Saint-Denis-en-France, Saint-Denis

The narthex

The portals to the narthex was carved in a number of campaigns, discussed in 08 construction timetables.pdf and 29 Portal impost study 2.pdf

We may extrapolate the latest dates for each level of the narthex capitals by working backwards from the upper chapel consecration on June 9, 1140. The narthex construction history is involved as there are capitals on seven levels within a tangle of arches and ribs each of which has to be supported on formwork that remained in place until the mortar had set.

The portal capitals would have been carved first, then the upper and lower capitals of the aisles, the central vessel and then those over the openings just under the central vault and, after the vaults were completed, the capitals for the chapel of Saint Romanus. These would have been carved at least six months before the dedication to allow the vaults to be set up and the centring struck. If the process of construction had been uninterrupted and we allowed for pauses while the mortar set under arches and vaults, we can work back from the chapel's dedication to provide the earliest likely dates for each group of capitals.

It may be thought that because Suger does not mention it, and because the general opinion is that it was a sustained building operation, there would have been only one contractor. However, just note that the imposts and arch profiles change between levels, and there are distinct stages to the design of the stairs. Without delving into all the changed details there is one obvious design alteration over the XN2 pier. The capital underneath was placed at 45^{o} whereas the impost is set square. The capital would have logically supported another arch alongside the rib. The impost supports an arch flanking the doubleau. There is also a change in impost profile at this level. There was clearly a new template for a new design, and therefore a probable change in contractors.

Multiple contracting is also apparent in the capitals, for if one builder had had control of the entire works we should expect that the same carvers would have worked on many levels. In fact, this is noticeably not the case. Every level of the work was carved by a different group of men as can be seen here – a sure sign of discontinuous contracting. Nearly every break occurs where we would expect it, at the arches where time was needed while the mortar set.

The dates at Saint-Denis are particularly important for the hundreds of capitals that are exceptionally well-preserved. Crosby found that the narthex capitals had avoided restoration as they had been covered in plaster. For this we are incredibly fortunate.

The west portals which had to be complete before the aisles could be vaulted. Restorations have removed much of the toichological evidence that facilitated the analysis at Chartres, but my impression is that all the sculpture would have been commissioned early in the work and carved and erected over a three-year period.

We can say from these analyses that unless Saint-Denis was built very slowly and therefore begun long before 1130, and unless Chartres was also constructed slowly and the portal not finished until later in the 1140s, the carving of the Chartres portals was begun five years after Saint-Denis was completed. The appeal of the three-door arrangement at Saint-Denis may have inspired the clergy at Chartres to squeeze three doors into the central space.

Confirmation may lie in the concave facets on the original Saint-Denis pier bases that are now under the floor. The present bases are new, following the raising of the narthex floor last century.

The facets on the originals are extremely rare, and are found only in the earliest parts of the north tower at Chartres and the castle at Etampes.

There are approximately 80 courses from the original level of the bases to the top of the chapel and three layers of vaults. Allowing for the delays in setting up the arches and pauses while the mortar sets, building the cells and then filling over the top, it would have taken roughly 8 courses per year. At Chartres they built over eighty courses in seven years in the north tower, including the entries to the crypt and two layers of vaults. Taking the vaults into account, this is more than a dozen courses a year, and the tower being a single rectangular cell it would naturally have been faster than the more complex six-bay narthex at Saint-Denis.

The choir

Suger laid the foundation stone for the choir in July 1140. This could have been done after the footings had been dug to a firm foundation through the soft loam of the area, a task that would have taken some time. Many historians follow Frankl in believing that Suger built a three storey choir, yet how many admit to understanding construction principles or have had direct experience of building? How many have lifted stones or carried mortar across gangways elevated high above the ground? Yet all those who do build and carve, and do supervise architecture, and all the masons I have spoken to in detail on this subject over the last forty years all agree that Suger could not have built above the aisle vaults. There is general agreement in the trade that only on rare occasions would as many as a dozen courses be laid in a year in a tightly constricted multilevel space like this.

From a toichological perspective there is nothing in the stonework above the vaults to show anything was laid over them in the 1140s. Crosby himself acknowledged “Even my own enthusiasm for Suger’s abilities questions the possibility of his erecting such a complex structure, especially one so novel, in such a short time”.

The storm described by Suger refers, I believe, to the ambulatory vaults, not the high vaults. After the storm the cells were then laid over the ribs fairly quickly and a roof provided for the grand consecration in June 1144.

Suger’s words have been discussed by many, including Panofsky and Crosby. These were “from the crypt below to the summit of the vaults above, elaborated with the variety of so many arches and columns, including even the consummation of the roof”. I explain these words to read “... to the summit of the vaults above (those of the crypt - i.e. the vaults of the ambulatory), elaborated with the variety of so many arches and columns including even the consummation of the (temporary) roof (at the level of the aisle vaults)”. “So many arches and columns” describes the ambulatory with words that could not have been used to describe the simpler ribs and walls of a main vault, and if he is referring to the main roof this “even” is curious, as roofs were usually erected before the high vaults to keep out the rain and carry the lifting gear.

And there are precedents for building a temporary roof at the level of the aisle vaults to allow ritual to continue while the upper parts were being completed. This is why I cannot agree that Suger built the whole four-storey choir and the roof and the high vaults in four years.

To test my opinion I set out a construction timetable course by course on a monthly basis. Stones were not laid every month as delays were essential in erecting arches and vaults to allow the mortar to harden. Three months is a fair time to allow for this. Sometimes a few blocks can be laid alongside the lower edges of an arch while the mortar was setting, but only a few as once the

formwork was struck the arch would settle and a gap could be opened up between it and any adjacent ashlar.

Allowing for pauses in the construction for setting the mortar, and for one course every month, starting with the first stone laid in July 1140 and for the consecration four years later, we get a very reasonable construction schedule. Not only that, but the miracle of the storm occurred on exactly the date noted by Suger.

For me, this timetable has removed all doubt on the matter. Even for this relatively small building without the upper stories, Suger was building 8 or 9 courses per year. As will be seen, the almost matching Soissons south transept managed less than six. To have built the proposed gallery and clerestory would have raised Suger's construction rate to around 15 courses per year, a rapidity not even marginally reflected in any other building in this study except the simple rectangle of the north tower at Chartres.

However, if this chronology is wrong and Suger had performed another miracle, the changes make only moderate differences to the dating of the capitals. The monthly timetable may be annualised with the earliest date at the bottom, and this format will be used in the rest of this study.