

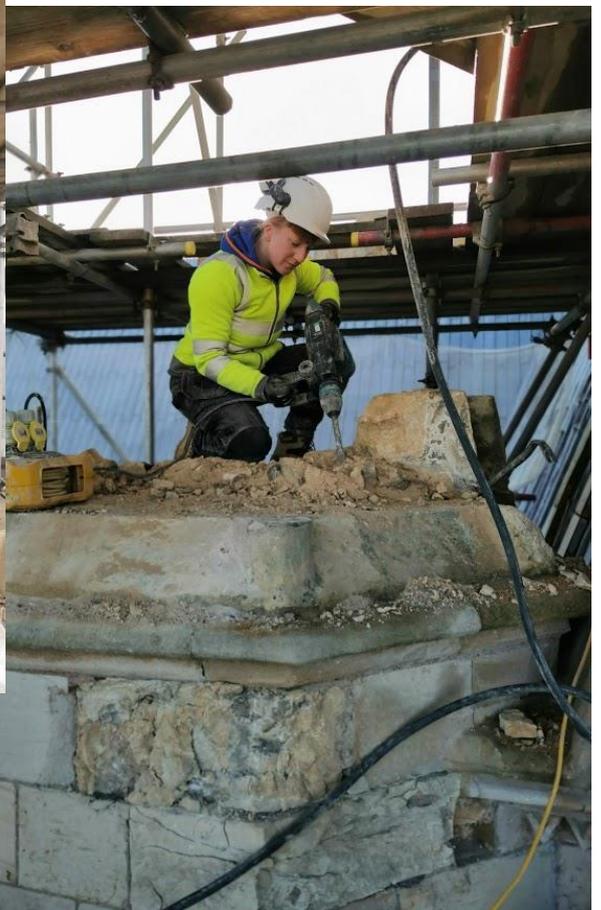
Pinnacle rebuild at Lincoln Cathedral

As part of the North East transept project at Lincoln Cathedral, which saw a host of conservation works, cleaning, glazing and stone replacing, I was lucky enough to be able to assist 2 experienced masons in the rebuilding of an entire pinnacle.

Large rebuilds like this don't happen very often; working on a heritage building the top priority is always to save as much original fabric as possible, so as masons we were particularly excited about the opportunity to rebuild a full structure like a pinnacle, which had become structurally unsound.

This particular pinnacle on the North East Transept is a part of the building originally constructed in the 14th century, however upon closer inspection of the pinnacle some of the original medieval stone had already been replaced with a different stone type possibly in the victorian era when a lot of restoration work was done with cement which can ultimately cause major structural damage.

As you can see from the photographs below the stone was delaminating, and crumbling away, the damage became even more apparent as we were dismantling it.



In the process of dismantling the pinnacle each stone was removed and hoisted down from the scaffold, a small number of original stones were deemed structurally sound and where to be kept and incorporated into the rebuild. The stones being kept were assessed, labeled and marked up with a code so we knew exactly where it needed to be placed in the building of the new pinnacle.

One of the most exciting parts of the project was the discovery of a putlog hole and a small decorative carving.

The putlog hole (see photo below) is a hole or channel usually found in medieval buildings in which a wooden beam or log would have been placed in order to support a scaffold. Very often they will have been filled in but this one was fully intact and lined with walling stones. A fantastic insight into the construction methods of our medieval colleagues!



The second item we found buried in the 'infill' which makes up the core of the pinnacle. A small decorative carving featuring delicate flowers. The core of a solid structure like this will usually be filled with rubble and mortar, so to find a carving is very exciting; why was it discarded? We will never know.



Once the old Pinnacle was finally dismantled, stones to be kept had been labeled and exciting features photographed and logged we were ready for the rebuild.

The setting out process had started a year previously, setting out being the measuring, planning and creating of scale drawings from which the templates can be made for each individual stone to be worked by the masons. From this information a cutting list is sent to the quarry for stone to be cut and as these sawn stones arrive in the work shop the masons can start to work and shape the stone ready for the rebuild. The pinnacle had in total 170 new stones ranging from plain ashlar, string course, roll mould and carved finial. Each stone had its own unique code so we knew exactly where each one should go in the building.

Over the course of a year all the new stones were worked and transported to site ready for hoisting and fixing, I was very lucky to be able to work the top roll mould and the finial to sit on the very top of the carving. See pictures below.



Once all the stones had been worked and the old pinnacle dismantled we were ready for the rebuilding process.

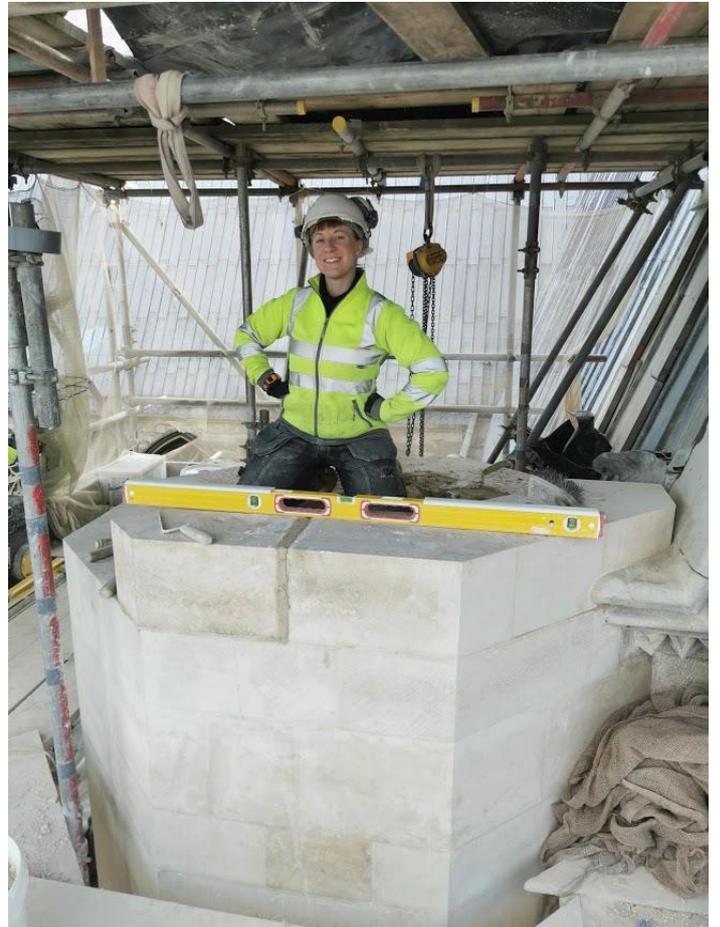
In total we had 10 courses of ashlar that make up the octagon at the base of the pinnacle, one course called the string course on top of that to carry the water away from the building below it, then 14 courses of roll moulds on top of that getting increasingly smaller as they go up to form the point of the pinnacle. Then finally a carved decorative finial topped with the 'clowns hat' finial on the very top.

As with all building at the cathedral we use hot lime for the entire fixing process as the medieval masons would have and because it is a lot better for the longevity of the building.



As we build each course it is filled in with rubble and mortar to create a strong core at the centre.

(left + below) The ashlar courses being fixed.



The string course sits on top of the ashlar and then the roll moulds carry the pinnacle up to a point.





The final few courses along with the carvings we dry fixed at the bottom of the scaffolding to make sure everything lined up correctly before core drilling through the centre and cutting crosses known as joggles into the top and bottom of each stone.

The hole created by the core drill will take a phosphor bronze dowel all the way through from the top 3 courses of roll moulds to

the carved finial on top. As we fix each stone hot lead is poured in to lock each stone in place.



Once the carving has been fixed to the top hot lead is then poured in through a hole in the side and plugged up with a hot lime pointing mix. Following a rinse to remove any dust the pinnacle is finished.

This was such a rewarding job to be a part of, seeing the project all the way through and being able to have a hand in almost every process.



Once the scaffolding comes down this pinnacle will be seen from miles around for hundreds of years to come; being part of a team able to make that happen is a source of much pride for all of us.