

A castle in the making

Dear virtual visitors,

At Guédelon, autumn is a particularly fruitful season. This is when the team can devote their energies to completing the year's objectives. The busy summer season may be over, but the pace hasn't slackened: the tile makers are hard at work in the forest; the carters transport the fired tiles to the roofers; the masons have finished the masonry on the great hall's west gable and continue raising the east curtain wall and the wall's of the great tower; the stonecutters are dressing the voussoirs and the keystone for the rib vault. Meanwhile, in the virtual world, our website has received a record number of hits from around the globe. The world is watching our castle in the making!

Maryline Martin, Managing Director



The season in close-up

The North Range

In the last days of September, the final stones were laid on the west gable-end of the north range. The limestone **copings** were hoisted up using the treadmill crane in the castle courtyard. The team of masons assigned to the north range (cf *Castle in the making!* N°1) has completed one of the season's major objectives on schedule, and an important new phase of the building programme can now get under way.

The scaffolding on the gable's interior wall, and the lattice tower – the lift which enclosed the crane's cradle – has been dismantled; the carpenters can now finish the job they began two years ago: hoisting, assembling and positioning the remaining trusses, wall beams, tie beams and king posts.

The masonry on the north range is nearly complete. All that remains to build is the final stretch of the **crenellated** wall-walk and the chimney above the great hall's fireplace.

Coping: the uppermost course of masonry or brickwork in a wall usually made of a sloping form to throw off rain.

Crenellation: fortified parapet with alternate solid parts and openings: merlons and crenels.



The copings ready to be laid.



The masonry on the gable's interior wall nears the end.



The last copings are laid.



The final chislemark on the final triangle-shaped coping stone.



The great tower

6 **corbels*** and 22 **springers*** are in place. The carving of the **keystone***, which will crown the **cross-rib vault** in the lord's chamber, is complete: it took exactly one month to carve the limestone block. Like that in the great tower's ground floor guardroom, this keystone will be decorated with a sculpted motif. The floral motif, selected by the master mason, Florian Renucci, is a replica of carving found on a keystone at Dourdan castle (91). Unlike the construction of an arch, in which the keystone is the final stone to be placed at the summit, in the construction of a rib vault, the keystone is the first stone to be placed on the centering (cf *Castle in the making!* N°1); it acts as a guide during the building of the ribs. **Abrevoirs** are channelled into the side faces of both the keystone and the **voussoirs***. These grooves are designed to be filled with mortar; thus helping the stones to bond and preventing lateral movement. Once the masons have finished the levelling courses (cf *Castle in the making!* N°1) on the great tower, the centering, currently at the carpenters' workshop, will be dismantled, hoisted onto the tower and reassembled in the lord's chamber. The centring is an adapted version of that used in the construction of the 2005 rib vault on the great towers ground floor; it has been made bigger to fit the larger diameter of the lord's chamber.

* **CF Castle in the making! N°1 Springer**: the stone, or course of stones, providing the sloping surface of an abutment which receives the thrust of an arch.



Springer stones are much longer than the voussoirs

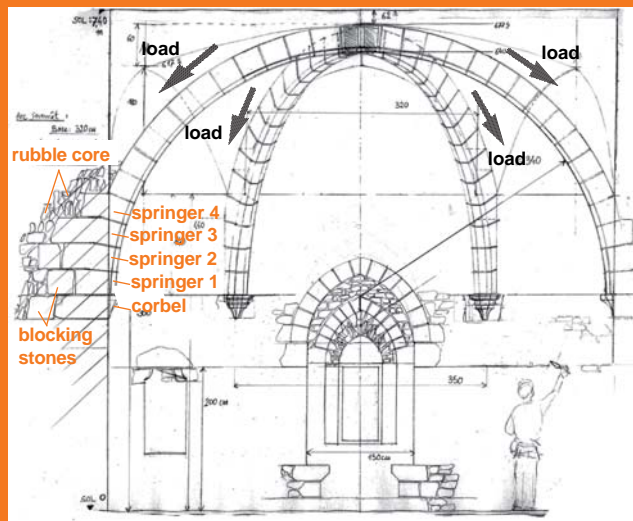


The corbels and nearly all the springers are in position.

Under pressure

The rib vault under construction this year consists of **150 metric tonnes** of masonry and mortar. The load borne by each of the vault's six ribs is about **25 tonnes**. The thrust is exerted on the first third of the ribs' arc (as indicated by the arrows on the sketch). The springer stones receive the thrust of the vault and distribute the load into the wall. Each rib has 4 springers at its base; these are positioned one on top of the other and embedded in the walls. Large blocking stones, within the **rubble*** corework, strengthen them, and distribute the load evenly. This combination of springers, blocking stones and backfill provide a solid counter-resistance to the lateral thrust exerted by the vault.

Rubble: undressed stones, used on rough walling and as filling-in of walls.



The keystone has been carved; a floral motif has been sculpted at the centre.



Barrel vaulting under construction.

The fireplace hood in the lord's chamber is under construction. This has to be built at the same time as the tower's outer walls in order for the building of the vault to continue. Another team of masons is building the **mural stair*** leading to the tower's second floor. **Barrel vaulting*** is being built above the steps; a wooden form is used to support the vault during its construction, and the stones are placed on the form with the sedimentary layers running vertically: the stones are laid "**edge bedded**".

Mural stair: stair built in thickness of a wall

Barrel vaulting: A simple continuous vault, usually semicircular in cross-section.



The forge

Much of the blacksmiths' time is taken up repairing and making tools; however, Olivier and Adrien are currently forging the decorative strapwork for the great tower's door.

The design features foliage, animal and human heads. The work is labour intensive; in the 13th century – as well as reinforcing the door – a piece like this was a status symbol: an outward show of power and wealth.



NOVA/PBS

A year ago, in October 2009, a film crew from the production company Providence Pictures came to film scenes at Guédelon; this footage was intended to illustrate how medieval builders constructed Europe's great gothic cathedrals.



On October 19th, you can see the fruits of their labour when NOVA/PBS broadcasts the film *Building the Great Cathedrals*.