

Recording and interpretation of tool marks on historic roof structures in the Walloon Region (Belgium)



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Over the years, many historic roof structures in the Walloon Region (Belgium) have been the subject of archaeological and dendrochronological studies. This combination of disciplines has significantly improved our historical and technological knowledge of an important though often neglected part of architecture: the roof. Although finished roof structures in Wallonia are now relatively well-studied, their construction isn't. Luckily some of the specific traces that are left by each step of transformation of a log into timber can still be found on historic roof structures. In order to record them *in situ*, a specific method has been developed in Wallonia, which records them systematically using sketches, rubbed tracings, photographs... and describes them in a data sheet to facilitate comparison and interpretation. This work, when carried out on a large scale, can reveal a lot about the carpenters' techniques and tools.

In situ

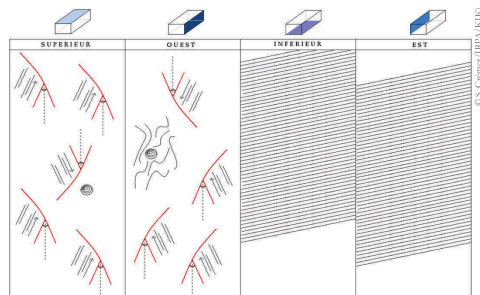
To identify and interpret the tool traces, a specific method to record them *in situ* has been developed. It combines:

Sketches

The tool traces are drawn schematically on a paper divided into four columns, with one column for each side of the beam (method based on that used by Petr Růžička).



Sketches *in situ*. P. Růžička. Notre-Dame, Slavonice (Cz)



Feuillet n° 2 - Partie XVI entre fermes principales K et N
Sketches. Saint-Jacques, Liège (B)

Rubbed tracings with graphite powder

A sheet of tracing paper, applied on a beam, is covered with graphite powder to capture the relief of tool traces observed. This technique, which records the traces to the 1/1 scale and without distortion, allows measurements to be carried out directly on the rubbed paper (width of cutting edge of the axe blade, sawing angle, frequency and direction of blows ...).



Rubbed tracings with graphite powder *in situ*. S. Crémer (PL)



Rubbed tracings with graphite powder. Saint-Jacques, Liège (B)

Photography

Take pictures with oblique lighting sometimes gives good results, despite the conditions of shooting (difficult access to the room, lack of recoil, dark and dusty environment...).



Pictures with oblique lighting *in situ*. Notre-Dame de la Paix-Dieu, Amay (B)

Data sheet

A data sheet model, serving as the "minutes of excavation", has been developed to systematize and structure *in situ* the record of all the characteristics of historic roof structures in order to understand how the carpenter has designed and made his work.