

## **Making a living in Viking soils: The study of internal space use through geochemical analyses.**

This paper will demonstrate the value of multi-element geochemical analysis of floor levels in Viking Age houses using geochemical analyses done on the floor of a Middle Norse house from Mound 2, Bornais, in South Uist in the Outer Hebrides, Scotland. This study revealed interesting results in terms of the use of internal space. The application of this method of soil analysis has helped in identifying specific areas of use within the house. The floor of this house was analysed for fifteen elements including Phosphorus using a Total X-ray Fluorescence (TXRF) spectrometer. The analysis revealed previously unidentified storage areas, meat processing area, social area and two primary hearths in the central hearth aisle and possible partitions in the house which essentially showed the work area and how the residents made their living. This method also revealed the different primary fuels used as initially it was concluded through soil micro-morphology that peat was the primary fuel used in this house but later through geochemical analyses it was found to be peat or wood depending on the location of the hearths. The analysis of the floor of this Middle Norse house also showed that certain activities have chemical signatures in the form of elevated levels of certain groups of elements in soils. Thus, suggesting chemical signatures of the activities through which they made a living. This is, especially, evident when compared to the results from similar analyses carried out at an Iron Age roundhouse at Meillionydd in North Wales and a late Iron Age chambered house at Orosaigh in South Uist, using the exact same method. This paper shall demonstrate that for the study of domestic space in structures, geochemical analysis is a way forward in archaeology. Results from this study when compared to other sites with geochemical data also suggest perhaps universal chemical signatures for specific activities carried out in different areas of the house.