Destruction Mechanisms of a Sunken Floored House

This article describes observations on the burning down of a (re)constructed Iron Age house and follows the developing archaeological situation over the following months.

Jiří WALDHAUSER (CZ)

On the 21st of April 2006 an unknown person set fire to a (re)construction of an Iron Age sunken house in the archaeological experimental centre Altamira in Kosmonosy, Mladá Boleslav. The (re)construction was based on a find from Markvartice (Jiřín region) during the excavation season of 1969. According to the finds from the feature, it was possible to date it to the 2nd century BC (Waldhauser 1970-71). The building of the (re)construction took place from 1993 to 1994 and was published in 2002 (Waldhauser 2002, 107-115). The construction was supervised by Jaromír Cvrček, a head of the experimental centre and Jiří Waldhauser, an expert on Iron Age settlements.

The general rules in constructing similar buildings were followed within the following parameters and results: The sunken house was of a rectangular plan with sides 5.4 by 2.64 m, 0.38 m deep. The constructed height was 2.9 m. The load-bearing structure was built from round logs, the side walls from split logs, front and back walls from wattle and daub. The hearth was built of clay. Altogether we used 2.9 m³ of wood and 1.2 m³ of clay. The roof was thatched with reeds attached with leather straps. In the interior there was a hearth and a raised bed covered with sheep skins. The work on the building would have taken, considering it was done by two adults and two children (10 – 13 year old) and a 10-hour working day, about seven weeks. Report on the building of the (re)construction in 1993-1994 was published in 2002 (Waldhauser 2002, 107-115).

Some spring and summer experiments with living in the Kosmonosy sunken house were carried out. The hearth was in use during these experiments. The inhabitants found problems with smoke. The smoke collected about 1.5 m above the floor, but no other significant restrictions of living in the house were recorded.

Living-in experiments were not carried out during the winter, but these were carried out in a (re)construction of a sunken house dated to the 5th century BC in the Centre of Experimental Archaeology in Všestary (Czech Republic). They recorded acceptable thermal cycle suitable for winter habitation. They used 1 m³ of wood per four days of heating (Anýž et al 2000, Richter – Novák 2001).

The state of the house before the fire

After a fairly long existence (13 years), the state of the sunken house could be described as very well-preserved, without any substantial changes. The building was in an exposed position on the higher part of the slope, open to mostly west but also to south winds. It was not renovated; none of the construction elements were exchanged.

Destruction of the construction by fire

One of the co-leaders of the project, Jaromír Cvrček arrived at the fire about 10 to 15 min. after it started. At that time the roof had already burnt through and collapsed into the house. After approximately 45 min. only the load-bearing structure, badly singed, remained standing while the plank walls had mostly burnt through. Soon afterwards a fire crew arrived and put out the remaining fire. This account illustrates the easy and quick burning of Celtic buildings, whole villages or oppida.

Post depositional processes

After the fire a 30 cm thick layer of cinders from the burnt reed and wood covered the floor of the whole house and was spread in its vicinity to distance of about 0.5 m. After a month of rainy weather the layer had settled down to about half of its original thickness. At the end of the year before snowfall it was about 5 cm thick. Around the perimeter of the house the layer was covered with organic soil but also a sandy clay.

If it would be possible to generalise these observations in archaeological situation we could say that in the absence of cinder layers over the whole floor of sunken houses they were not destroyed by fire (unless renovated after fire with most of the cinders layer removed). Therefore it seems Celtic houses would have been destroyed by decay when abandoned, usually after being used for some 20-50 years while according to other evidence parts of the settlements (farmsteads) or even whole ones (villages) were moved to other, nearby places (Waldhauser 1984).

Lumps of daub were after the fire singed only on the surface to a...
Objects inside the house

The inventory of the sunken house had consisted of replicas of La Tène vessels and a selection of iron agricultural tools. It is not necessary to highlight the different colour (even of fitting sherds) of pots which were burst in the blaze. It is difficult to comment on the replicas of iron tools, but maybe after repair by a smith they could have been reused. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials including leather were obviously used. Objects from organic materials include...