

# 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 (Jičín 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.



■ Fig. 1 Interior of the sunken house after the fire

Altogether we used 2.9 m<sup>3</sup> of wood and 1.2 m<sup>3</sup> 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 constrictions 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 m<sup>3</sup> 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.



■ Fig. 2 After 45 minutes only a badly singed skeleton was left standing

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 soil from its surroundings, mostly 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

depth of 3-5 mm, of ochre-orange colour. Bigger bits of daub with a diameter of more than 5 mm had brown-black unfired centre. This contradicts the usual archaeological situation of homogeneously ochre coloured lumps of daub from infill or deposits in Celtic buildings. These therefore probably represent the remains of domed kilns and could be part of the infill of the structures after they were abandoned, mostly by natural erosion.

### 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 totally destroyed.

### Conclusions

Observing the mechanism of the origins of various archaeological deposits and the infill of both sunken and surface houses (not only from the Iron Age) helps to solve the problems of the demise of buildings.

The experience with the Kosmonosy sunken house showed that it was a substantial building which had lasted for 13 years without the necessity for any repairs and could have lasted for many more years. This corresponds with archaeological finds which suggest a high quality carpentry work (for example *P. Drda and A. Rybová 1998*).

The recent fire in a (re)constructed Iron Age house has shown, during observation of the post depositional processes, an unexpected fact – the charcoal layer found at the bottom of the sunken house has few analogies in archaeological documentation from research of more than a thousand La Tène sunken houses (*Waldhauser 2001*, 56).

As a result, fire does not need be the main accidental or deliberate cause of the destruction of Iron Age sunken houses and probably also of

other less known surface houses. Either we have to accept the idea of non-violent abandonment of sunken houses at the end of their serviceable life or they may have had, for example, turf roofs where the deposit pattern would differ.

According to archaeological evidence, fire did not need to play substantial role in demise of unfortified settlements. This disagrees with rare written reports of constant warfare and seizing/destroying settlements, not even talking about the burning of all oppida, farmsteads and villages by the Helvetii on their leaving in 58 BC for which we have not found sufficient traces in archaeological situations (*Vencl 1984, Waldhauser-Mangel 2007*). This maybe because classical authors concentrated on rare events rather than everyday occurrences.

Traditional fired lumps of daub do not need to be a result of burnt walls, but they are more probably related to the destruction of domed kilns or hearths.

The original interior and stored objects in the sunken houses are rarely found which could be connected to the fact that apart from exceptional cases the houses were probably abandoned.

### Bibliography

- Anýž et al., 2000*: Experiment s obýváním polozemnice z doby železné v experimentálním středisku Všešary, (Re)konstrukce a experiment v archeologii 1, Hradec Králové, 131-142.
- Drda, P. – Rybová, A. 1998*: Keltové a Čechy, Praha.
- Richter, D. – Tichý, R. 2001*: Druhá etapa zimního obývaní rekonstrukce polozemnice z doby železné, (Re)konstrukce a experiment v archeologii 2, Hradec Králové, 109-113.
- Vencl, S. 1984*: Otázky poznání vojenství v archeologii, Archeologické studijné materiály 14, Praha.
- Waldhauser, J. 1970-71*: Výzkum čtyřúhelníkových valů a laténského sídliště u Markvartic (okr. Jičín) v roce 1969, Sborník Československé společnosti archeologické 4, 66-88.
- Waldhauser, J. 1984*: Mobilität und Stabilität der keltischen Besiedlung in Böhmen, in: Studien zu den Siedlungsfragen der Latenezeit, 167-186, Marburg.
- Waldhauser, J. 2002*: Poznatky z rekonstrukce keltského zahloubeného domu z Markvartic na Jičínsku ve skazenu střediska Altamira, (Re)konstrukce

a experiment v archeologii 3, Hradec Králové, 107-115.

*Waldhauser, J. et al. 1993*:

Die hallstatt- und latenezeitliche Siedlung mit Gräberfeld bei Radovesive in Böhmen, Praha – Teplice.

*Waldhauser, J. – Mangel, T. 2007*:

Agresivita Keltů v Čechách, Živá archeologie 8, Hradec Králové.

### Summary

#### Le processus de destruction d'une maison excavée

En 2006, un inconnu mit le feu à la reconstruction d'une maison excavée de l'Age du Fer dans le Centre expérimental d'Altamira à Kosmonosy (République Tchèque). L'un des responsables d'Altamira arriva 10 à 15 minutes après le départ du feu; le toit avait déjà entièrement brûlé et s'était effondré dans la maison. Après 45 minutes environ, il ne restait plus que l'ossature de bois, gravement atteinte mais encore partiellement debout. Après l'incendie, une couche de cendres d'une trentaine de centimètres d'épaisseur recouvrait le sol de la maison, et les environs. Le torchis n'était quant-à-lui carbonisé que sur 3 à 5mm de profondeur. Cette situation n'est pas celle que les archéologues retrouvent habituellement sur le site archéologique, ce qui laisse penser que la majorité des maisons retrouvées sur le site n'a pas été détruit pas le feu, mais par le temps.

#### Mechanismus der Zerstörung eines Grubenhauses

Im Jahr 2006 wurde die (Re-)Konstruktion eines eisenzeitlichen Grubenhauses im Experimental-Zentrum von Altamira, Kosmonosy (Tschechische Republik) von einem Unbekannten in Brand gesteckt. Ein Verantwortlicher von Altamira erschien bereits 10 bis 15 Minuten nach Beginn des Brandes am Tatort, zu dem Zeitpunkt war bereits das Dach abgebrannt und in das Haus gestürzt. Nach weiteren ca. 45 Minuten stand lediglich noch die tragende Pfostenstruktur des Hauses, auch wenn sie sehr stark versengt war. Nach dem Brand bedeckte eine ca. 30 cm mächtige, aus verbranntem Reetdach und Holz bestehende Schicht aus Asche den Boden des gesamten Hauses und auch der unmittelbaren Umgebung. Der Lehmewurf war lediglich in einer Tiefe von 3 – 5 mm verbrannt. Dieser Befund ist ungewöhnlich auf archäologischen Fundplätzen und deutet darauf hin, dass die überwiegende Zahl von archäologisch nachgewiesenen Häusern auf natürliche Weise verfallen sind und nicht durch Feuer zerstört wurden.

■ **Jiří Waldhauser** specialises in the Iron Age research. He is a co-author of 'Encyklopedie Keltů v Čechách' and was a head of an international project studying prehistoric and Iron Age gold in Central Europe.