

SILBURY HILL CONSERVATION PROJECT

Update 29: progress for 25th Jan – 20th Feb 08

Engineering Update

Backfilling works

Backfilling of the tunnels continues to progress steadily, but has continued to be affected by further tunnel collapses in the outer sections of the Atkinson tunnel as a direct result of the adverse weather conditions experienced throughout January 2008.

Backfilling of the East and West lateral tunnels, including all of the known voids above and associated with the central Merewether and Atkinson tunnels, was successfully completed by 8th Feb 08.

The central Atkinson chamber has also now been completely filled. All of the excavations within Silbury 1 (the central turf stack zone) have been filled with a combination of crushed chalk installed by hand and chalk paste which does not include any lime or other materials, thus providing an uncontaminated environment with the aim of ensuring the long term preservation of the central organic material.

Backfilling progress in February has improved due to the drier weather leading to improved working conditions. The main 'Kirkbride' tunnel (the new section installed during 2007 following the initial collapse of the Atkinson tunnel) has now also been completely backfilled inwards from ring 48 using a chalk paste fill which includes hydraulic lime to provide additional strength; Figure 1 shows the backfill being emplaced. The mining arches in much of the main tunnel and the laterals could not be safely removed without great risk of collapse and major personal injury.

The current work is focused on filling the main void above this section of the tunnel, after which the remainder of the tunnel to the portal will be filled with chalk & lime paste as above.

For those interested in the quantities involved, the current records show that more than 3,500 chalk bags have been filled by hand and used within the tunnels (more than 70 tonnes of chalk), a further 142 tonnes of chalk has been emplaced using the skid-steer loader and compacted both mechanically & by hand, and a further 310 tonnes has been introduced as a pumped chalk paste.



Figure 1: Paste backfilling of the 'Kirkbride' tunnel



Figure 2: A typical stop-end wall constructed in the tunnel to compartmentalise the paste backfilling