

## **THE RESTORATION OF THE MAIN SPIRE OF ST PAUL'S CATHEDRAL**

### **Geology trip on Monday 5 June, 2006**

Anyone who has been in the City in the last few months will have noticed the scaffolding around the main spire of St Paul's Cathedral. The restoration work is being carried out by James Charlwood and his company Cathedral Stone. James gave a talk to the Geology Group in 1999 on building stones in Victoria and in July 2003 we saw a presentation in the deanery next to the Cathedral about the work being done on the two smaller spires. This time, because of a change in his insurance policy, James tells us, a small group of us were allowed to go up the lift to the scaffolding at the base of the spire.

The lift is a construction lift going straight up the centre of the tower. Concrete floors had to be cut through to enable the lift to be installed. One of the workers commented that the Cathedral is over-engineered in the sense that it has a very strong concrete and steel framework beneath the stone, and this was evident in the bracing visible inside the spire. While waiting for the lift, James pointed out some patches inside where they had experimented with different kinds of cleaning methods for the basalt, Hawkesbury Sandstone and Waurn Ponds Limestone used inside. One was a method used in England in which a latex is painted onto the stone and then peeled off, removing the dirt with it. Another involved spraying and vacuuming off the water, and a third blasted the stone with an abrasive – aluminium oxide. The company have the contract to clean the interior of this part of the Cathedral. James suggests that the building needs to look clean, not brand new, and so has opted for the less severe water cleaning internally and the abrasive method for the outside.

Up on the scaffolding we were able to see the restoration work close at hand, not to mention the spectacular view of this part of Melbourne. It is usually the tops of ornamental stonework that have been damaged by exposure and these are often completely or partly replaced with new stone. The original stone is a creamy sandstone from Pyrmont, Sydney which weathers to a reddish-brown. The replacement stone is from the same area and almost indistinguishable from the original. There is a cost constraint and repairs are also being done with coloured mortar keyed into the stone using stainless steel screws. It is important that these repaired surfaces are angled to allow rainwater to run off and care is taken that the re-pointing is water-tight.

Down at ground level, passers-by on Swanston can look through a window in the hoarding to see heads being sculpted. For a suitable donation one's image can be incorporated in the fabric of the Cathedral. Dame Elisabeth Murdoch's was being done as we watched. Our thanks to James Charlwood and his workers for allowing us a once-in-a-lifetime experience and a further insight into how major stone buildings are restored.

**Rob Hamson**