



ENGLISH HERITAGE

## NEWS RELEASE

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# HISTORIC CASTLE STONES USED IN MICROBIOLOGY RESEARCH

Scientists arrive in Bolsover today (Thursday 5 February 2004) to collect historic stone from the castle for use in an exciting new European microbiology research project.

Led by [University of Portsmouth](#), the research is being carried out as part of a European Union funded project called BIOBRUSH, which investigates the use of micro-organisms in cleaning pollution products from historic stonework and identifying which environmental conditions will get the best results.

Eight large stones were carefully removed from the castle's chimney after being identified as in poor condition during on-going repair work. They are the first stones used for this kind of research from [England](#) and were put forward by English Heritage for use in the project because of the high pollution levels they have suffered over the years.

Dr Jim Williams, Archaeological Science Advisor for English Heritage co-ordinating the transfer of the stones, said:

“One of the principle factors contributing to the pollution and stone decay at Bolsover Castle has been previous output from coal burning industries in the local area. When environmental controls were less strict, pollution levels, such as those for sulphur dioxide would have been much higher than they are today. This ‘acid rain’ pollution

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has been particularly harsh at Bolsover causing the stone to decay quite rapidly. Even now that the levels of pollution are much lower, the exposed stonework continues to be affected by the wind and the rain.”

Dr Eric May from the University of Portsmouth, said:

“For the many years, microbiologists have been studying the damage that micro-organisms can do to stonework. With this innovative project, we are trying to use different microbes to remove damaging chemical and biological pollutants from the stone’s surface, and others to consolidate the stone after this initial treatment.

“Our aim is to provide practical treatment options based on bioremediation for conservators and other end-users to restore and conserve stone in important buildings and monuments across Europe’s different climates. BIOBRUSH research will ensure that the technology is safe, effective, environment-friendly and extend the range of conservation options available.”

The BIOBRUSH project has been running for **2 years**, and will be complete by **mid-2005**. The results, including detailed results from the stone at Bolsover will be displayed at the site towards the end of the project.

Dr Jim Williams added:

“It is excellent that stonework will now be used for research purposes that will broaden the range of stone conservation techniques that can be used in the future.

“The study of this material will add to the existing data that has already been collected by the Building Research Establishment from the castle over the years, and hopefully help to reconstruct the past pollution that has affected the castle’s stonework. This will provide extra information for the BIOBRUSH project that is unlikely to be available for material from other sites.”

[ENDS]

## Notes to Editors

1. The chimney stones removed from the castle have been replaced with newly carved ones, based on the design of the ones taken down.
2. Digital images of the stones being collected from the castle are available on request.
3. More information about BIOBRUSH can be found on the project website: [www.biobrush.org](http://www.biobrush.org)
4. For the latest information on all English Heritage properties log on to [www.english-heritage.org.uk/visits](http://www.english-heritage.org.uk/visits).
5. Bolsover Castle is open:
  - 1 November to 29 March - 10am to 4pm Thursday to Monday
  - 1 April to 30 September - 10am to 6pm daily
  - 1 to 31 October - 10am to 5pm daily

Entry: £6.20 / £4.60 / £3.10 / Family ticket £15.50

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