

Wardown Park Museum

Resolving a pest management nightmare using the AnoxiBug anoxic treatment



DID YOU KNOW

A four-week exposure at room temperature is sufficient for insect eradication. Anoxia kills insects more by dehydration than by suffocation. At very low oxygen concentrations, the spiracles (breathing openings) of the insect open so wide that the insect essentially desiccates. Dry and warm conditions can accelerate this effect.

Challenge

Hat-making first emerged in Luton in the 1600s and had become synonymous with the town by the 18th century. Today, hats are still produced in the town, notably for the royal wedding in 2011. The history millinery industry is commemorated and celebrated at the Wardown Park Museum's Women's Hat Industry collection, home to original headwear dating from the 1600s to the present day. The collection of around 600 hats is in storage and can be viewed by prior arrangements with the museum.

On the morning of 24th May, Veronica Main, head curator of the Women's Hat Industry collection, received the kind of phone call most heritage professionals dream of. A virtually unique specimen of a hat had been discovered, concealed in a 17th-century cottage in Essex. The owner of the cottage, who had discovered the hat in an interior wall during renovation work, had heard of the museum's collection and wanted to donate the hat for research, and Mrs. Main was to be responsible for its cleaning, and subsequent conservation.

In Mrs. Main's words, the find presented 'an ethical and professional dilemma'. Firstly, the hat turned out to be very rare – one of

only four such hats known of worldwide – a fact determined by its distinctive design and weaving technique, which was typical of hats produced in the Canary Islands in the early 18th century. There was the moral issue of whether it was right to publically display an artefact that had been deliberately concealed. Happily, the fact that the hat was damaged and in an extremely fragile state made it a good candidate for research and restoration. This solved the moral problem, but before it could be added to the collection, it was essential that the hat be thoroughly but sensitively treated so it would not introduce pests and contaminants into the controlled environment where the rest of the collection was stored. Storing the variety of hats was already 'a pest management environment control nightmare', according to Mrs. Main, with a mix of materials

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It never occurred to me that I could do an anoxic treatment, first because I thought only a conservator could, and secondly because of the expense.

– Mrs Main, Head Curator,
Wardown Park Museum

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Industry

Museums/Galleries

Situation

A valuable 18th-century hat discovered during a renovation needed to be thoroughly treated for pests before it could join a museum collection.

In the words of the curator, storing the hat was “a pest management environmental control nightmare”.

Company Profile

Wardown Park Museum, formerly the Luton Museum & Art Gallery, focuses on the traditional crafts of Bedfordshire. Its Women's Hat Industry collection features over 600 hats in an extensive collection.

Solution

Hanwell deployed the AnoxiBug anoxia system, a gas-tight oxygen scavenger treatment that eradicates all insect pests within one month.

Results

- Rare hat treated and added to collection
- Simple, low-cost treatment
- Treatment took just one month
- No hindrance to visitors or museum staff

including metal (which requires low humidity), fur (low temperatures), straw (alternating conditions) and wool (susceptible to moths). With limited resources, Mrs. Main needed a low-cost but effective solution to safely and thoroughly eradicate all insect pests prior to storage.

Solution

Hanwell specialists travelled to the Wardown Museum in Luton to meet with the curator and assess the problem. After consultation, we decided to deploy the AnoxiBug anoxia system, a non-toxic, pesticide-free method of eradicating pest insects from virtually any material by removing oxygen from the air retained in a sealed, gas-tight flexible enclosure Flexicube™ for a period sufficient to kill all stages of the organisms' life cycle.

This involved placing the artifact in a gas-tight Flexicube™, along with a container of AnoxiBug oxygen scavengers and a AnoxiBug Alert transmitter to monitor the oxygen level, and sealing the Flexicube™ using an electric iron. Within 24 hours, the transmitter indicated that the oxygen level had dropped to an acceptable level and within 30 days, all insects present had been eradicated. Once the dead pests had been removed, the hat could be safely researched, and ultimately, added to the museum's existing collection.

Results

- Simple, low-cost treatment enabled curator to perform conservator's task
- Hat safely and thoroughly cleaned
- Treated and cleaned hat was added to collection immediately following treatment
- Women's Hat Industry collection now boasts rare hat with only three extant contemporaries available worldwide
- Because of its condition, the hat is the only fully accessible artifact of its kind in the world
- Treatment took place within one month without hindrance to visitors or museum staff

ADVANTAGES OF ANOXIBUG TREATMENT

- Simple and inexpensive
- Appropriate for a wide variety of collection materials
- Oxygen scavengers are not registered pesticides; no licensing is required

Equipment

- 1m³ ready to use Flexicube™
- AnoxiBug Oxygen Depletion Pack
- AnoxiBug Alert oxygen meter.
- Domestic iron

Timeframe

September 2012 – October 2012

