Desktop pests: treating an early computer to prevent risk to the Science Museum's collections

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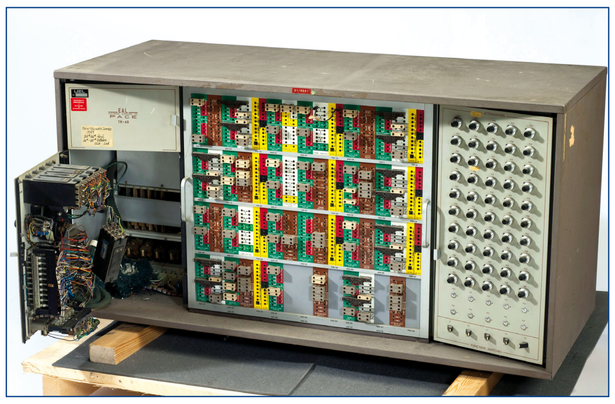

Figure 1

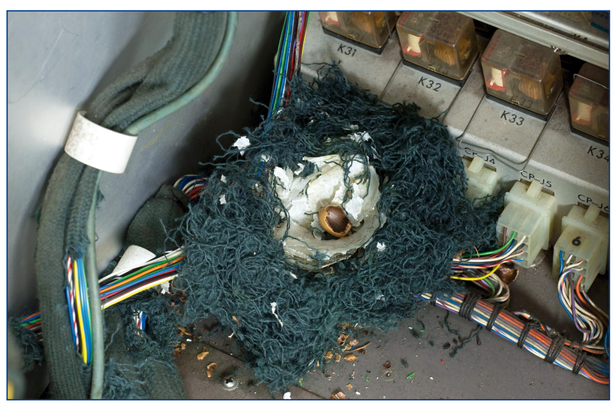

Figure 2

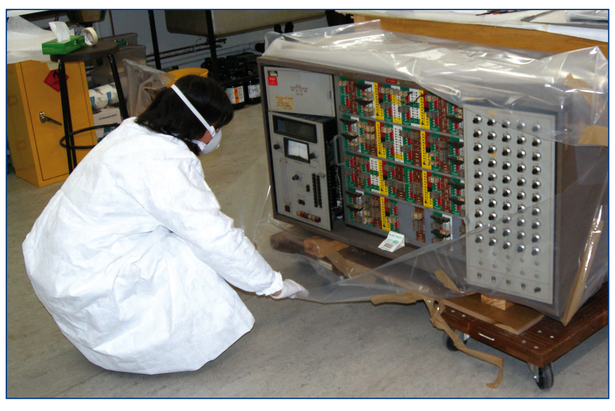

Figure 3

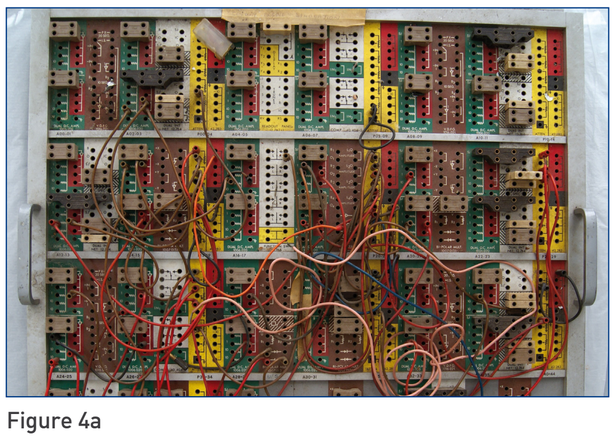

Figure 4a

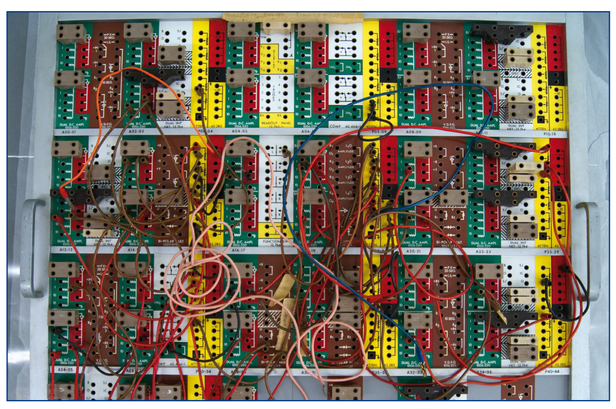

Figure 4b

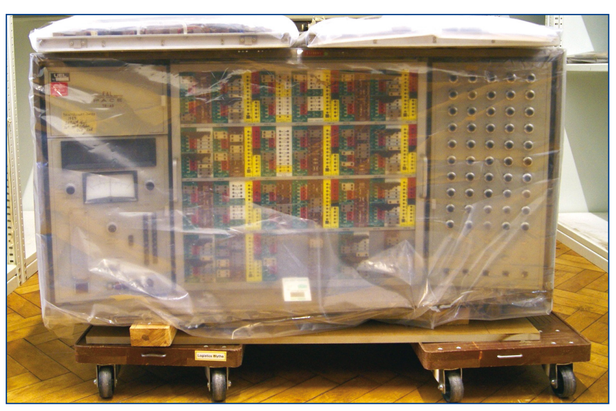

Figure 5

Background

An early example of a desktop computer, the EAI Pace TR-48 analogue computer, was acquired by the Science Museum in 2008. When the object arrived at the Museum's storage facility at Blythe House, it was noticed during pest inspection that there was a small nest within the internal workings of the computer. This was later identified as being made by a species of mouse. The object was subsequently quarantined while a treatment proposal was drawn up.

What are the issues with this object? Are the materials within the object at risk from pest attack? No. Could the dirt and debris within the object harbour pests that could infest other objects within our collections? Yes. How should we proceed?

The computer is constructed of enamelled metal, metal components including wiring, plastic coatings (possibly PVC), hard plastic components and woven fabric sheaths. There are a number of compartments and voids within the body of the computer. Its dimensions are 1230 x 610 x 510 mm.

Treatment methods

Freezing

This is relatively quick, but the object would require a walk-in freezer because of its size. Things to consider include the protection of delicate components from condensation and embrittlement or shrinkage of the plastics during the process.[1]

Nitrogen oxide

This requires more time, specialist knowledge and equipment. Therefore it is potentially more expensive. There is minimal risk to the object from this method.[2]

Carbon dioxide

Can be cheaper than nitrogen treatment and has been used successfully in the past for this type of material.

Fogging

This was not considered because of the risk posed to the metal components within the computer.

Monitoring and deep clean

Cheap, but not a quick answer. The method would not be suitable for an object that had already shown signs of infestation.

Outcome

A risk assessment looking at the object's construction and materials showed that it was at low risk from insect pest attack. Preliminary monitoring of the object had not discovered any pest activity. Combined with budget constraints and the need for a workable timeframe, this led us to conclude that monitoring and thorough cleaning was the best option.

The nest and debris were fully documented before cleaning took place. The computer was dry cleaned using microfibre cloths, brushes and vacuumed. Wet cleaning of components to removed residues was then completed. This was done for health and safety reasons as well as for the preservation of the object. Pest traps were then placed in and around the computer, before it was wrapped in polythene for monitoring.

Conclusion

This treatment raised a number of questions and allowed us to research the use of traditional pest eradication methods for modern materials. However, it was these modern materials themselves that ultimately allowed us to go for the simplest option – that of cleaning and monitoring. We were aided in this decision by our timeframe and budget constraints. However, this will not always be the case and I feel confident that we are now equipped with the knowledge to allow us to make further treatment decisions in the future.

References

Y Shashoua, 'Inhibition of degradation by low temperature storage', in *Conservation of Plastics* (Oxford: Butterworth-Heinemann, 2008), pp202–7

S Maekawa and E Kerstin, *The Use of Oxygen-Free Environments in the Control of Museum Insect Pests* (Los Angeles: The Getty Conservation Institute, 2003).

Figures

Figure 1 EAI Pace TR-48 computer before treatment.
Figure 2 Close-up of the nest location.
Figure 3 Natsumi Henzan removing the nest during cleaning.
Figure 4a Before cleaning of computer components.
Figure 4b After cleaning of computer components.
Figure 5 The computer wrapped and ready for monitoring.