

# ‘A BLIND ARCHAEOLOGIST YOU SAY’: HOW TECHNOLOGY IS TRANSFORMING OPPORTUNITIES FOR VISUALLY IMPAIRED ARCHAEOLOGISTS

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**A**s we are all aware, archaeology is an assault on the senses. We interpret artefacts, landscapes, buildings and a plethora of other aspects of the world around us using all five senses. So imagine the impact of losing one of those senses, in this case sight, practically overnight.

In this brief article, Dr Bob Clarke, Deputy Research Director for Wessex Archaeology, describes why, after the loss of his sight, he has worked together with his employer to investigate and pioneer the use of the latest technology in the sector in a bid to inspire others who have similar disabilities to work in the discipline. And, along his journey, Bob has discovered that he can offer a different perspective on archaeology.

I have been blind for five years now and in just that short period, technology has raced forward to make the world more accessible for people with visual impairments. There is a range of speech-to-text programs now available. All such programs also have a read-back facility, meaning that any punctuation or misspellings can be highlighted.

But these have been around for years, I hear you cry. And indeed they have, but what is important, I believe, is the extremely fast learning potential of such programs. I have a broad North Yorkshire accent and in the early days of speech-to-text technology, the program struggled to such an extent I didn't hold out much hope when I suddenly had to come to rely on



*The ORCAM on Bob's glasses follows the movement of his finger to turn written text into speech in a matter of seconds. Credit: Wessex Archaeology*



*Bob uses a screen reader to convert text from print sources into speech. This allows original documents and older publications to be made accessible. Credit: Wessex Archaeology*

them. But I was pleasantly surprised by how fast this technology has progressed.

E-books and e-reading devices have become widespread and practically any print book is now available electronically. More importantly for archaeology, the number of journals that are now publishing online and digitising their back catalogues is gathering speed.

One problem for visually impaired archaeologists is the interpretation of site layouts and the age-old challenge of searching for relationships within given matrices. Here a different sort of technology can be used.

I have recently taken delivery of a machine that, using Swell Touch technology, can convert a two-dimensional plan of a site or building into a tactile relief plan. This allows me to feel the lines of trenches or sections and build a mental picture of any given site or building layout. When coupled with a description that can be listened to via the technologies mentioned above, it is possible for me to understand some of the most complex stratigraphy.

A further bonus here is that the plan can be annotated, allowing me to enhance the experience further by introducing other forms of technology. I am currently using a glasses-mounted optical reader called an Orcam, which uses optical character recognition to convert any text into speech and then pipes it into my ear. This means I can navigate around plans, maps and other forms of imagery in real time. It is this combination of two or more technologies where I am finding the most benefit.

Now, all this is not learned overnight, and it is with the support of my employer that I have been given time to work through these innovations. Wessex Archaeology



*Bob uses his fingers to explore the relief plan of a Cold War nuclear bunker. The plan was created using Swell Touch technology. Credit: Wessex Archaeology*

also funds a visually impaired technology coach, whom I meet regularly to discuss directions for improvement on these new technologies.

Of course sight is not the only sense used in archaeological investigation. Touch is just as important and is a crucial means for me to continue to engage with my archaeological specialism. This first-hand experience is vital because I have learned, over the past few years, that there are a million ways to describe one thing. Besides, part of being an archaeologist is the love of encountering material from the past. How to interpret an artefact using touch can be taught quite easily, as long as an agreed set of terms is used – an area which I believe has some way to go.

If I had been told ten years ago that I would be at the forefront of shifting our culture to be more accessible to those with visual impairment, I would certainly have been surprised, but now I realise I have been given an opportunity to make archaeology more accessible for those who wish to have a career in this fantastic discipline. Onward and upwards, as they say.

*Bob uses touch to understand and interpret the features of this gun cartridge dating to the 1940s. Credit: Wessex Archaeology*



**Bob Clarke**

Bob has been involved in professional archaeology for 25 years and has held a range of academic and professional posts throughout that time. Bob gained his PhD from Exeter in 2016, exploring the archaeological potential of Cold War sites in the United Kingdom. He has worked at Wessex Archaeology since 2017 and is currently Deputy Research Director. Bob has been severely visually impaired since March 2019.