Desktop computing has come a long way since the 1980s, too. There is no need to invest in a supercomputer to use one of the new head-mounted VR displays. Add a mid-range graphics card to your existing desktop PC, and chances are you can plug your headset straight into the virtual world.

The commitment to VR of major computer games production companies, Hollywood movie studios, Facebook, Microsoft, Google and even the BBC has built to a critical mass which suggests that this time VR is here to stay. So what about those archaeological hopes and fears? Are they rekindled?

Accessible, experimental

Today's VR technology may have been developed with mass-media potential in mind, but plenty of other uses are emerging as hardware and software become more accessible. VR is now successfully used in emergency service training and the treatment of substance addiction. Several new and exciting archaeological applications have emerged.

Last year the team from the Samsung Digital Discovery Centre invited British Museum visitors to explore 3D scans of objects from the bronze age collection in the context of a virtual bronze age roundhouse. The museum worked closely with the virtual reality developers to ensure that the roundhouse was based on valid curatorial research.

Below: Still from an early 3D rendering inside St Saviours church, London, which was built for a deaf congregation

VR also allows us to visit real sites which are too fragile or inaccessible to permit actual access. As part of the EU-Inter-regional project Shared Culture, Clara Perinetti headed a team to provide virtual access to the statues of St Mark's Square in Venice (see www.meravigliedivenezia.it/en/index.html). These breathtaking objects include the Lion of St Mark and the Tetrarchs group, but their inaccessibility prevents close examination. The project also involved the digital recreation of two extraordinary museums which no longer exist: Tribuna Grimani and the Statuario.

As well as communicating what we can already see or already know about the past, VR technology has been used by archaeologists and historians to perform virtual experiments in long-lost locations. For example, Mike Gulliver of Bristol University is researching London's St Saviour's church – Britain's first church built for a deaf congregation, which closed in 1925. Sermons were delivered in sign language. Knowing just which parts of a congregation would have been able to read those signs relies upon an understanding of the church's layout, but this no longer exists. Gulliver plans to use VR to recreate and then virtually visit the lost church in an attempt to answer many outstanding questions about how it functioned.

Similar questions were asked by David Hill and John N Wall as part of the Virtual St Paul's Cross project. The team used both visual and acoustic modelling to recreate the experience of John Donne's sermon of November 5 1622. The project integrated what was known about a space destroyed by the Great Fire of London in 1666, with a virtual "recording" of how the sermon may have sounded to the congregation. VR allowed them to think about experiences in the 17th century in ways we could not before have contemplated.

The technology is not of course yet mature, but VR is seen by advocates as a potential game changer, allowing us to visit ancient Rome, neolithic Skara Brae or the London Blitz. VR could be the closest thing to a time machine we will ever have.

Dishonest, unreal?

On the other hand, some maintain that VR will only ever be (at best) a manifestation of our current ideas about the past. At worst it will offer make-believe worlds masquerading as historical fact.

Each VR world represents the result of intense work; creative licence invariably plays its part. In this, VR is no different from any other form of interpretation. However, the unmatched ease with which we can dive straight into a highly seductive and apparently complete world belies the huge number of developmental decisions which have gone into its making. This has left the technology

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