THE HERITAGE BAROMETER

SENSE AND SUSTAINABILITY: HOW CAN THE HERITAGE SECTOR ADAPT AND THRIVE IN THE DIGITAL AGE?

THE FUTURE OF HERITAGE WILL BE THE PERFECT COMBINATION OF ANALOGUE AND DIGITAL. NOT TECH FOR TECH'S SAKE BUT TECH FOR PROGRESS'S SAKE

WELCOME

We live in an age where technology shapes the world around us. Yet traditional definitions of heritage tend to carry more analogue associations. Bricks and mortar, fabric and wood – what business do these have in the digital world and how can they be expected to compete with video games and online streaming services?

The COVID-19 pandemic changed all of that. Technology became fundamental to our survival and the heritage sector had to embrace a new way of interacting with audiences. Museum tours went virtual, theatre productions were live-streamed and family activities went online.
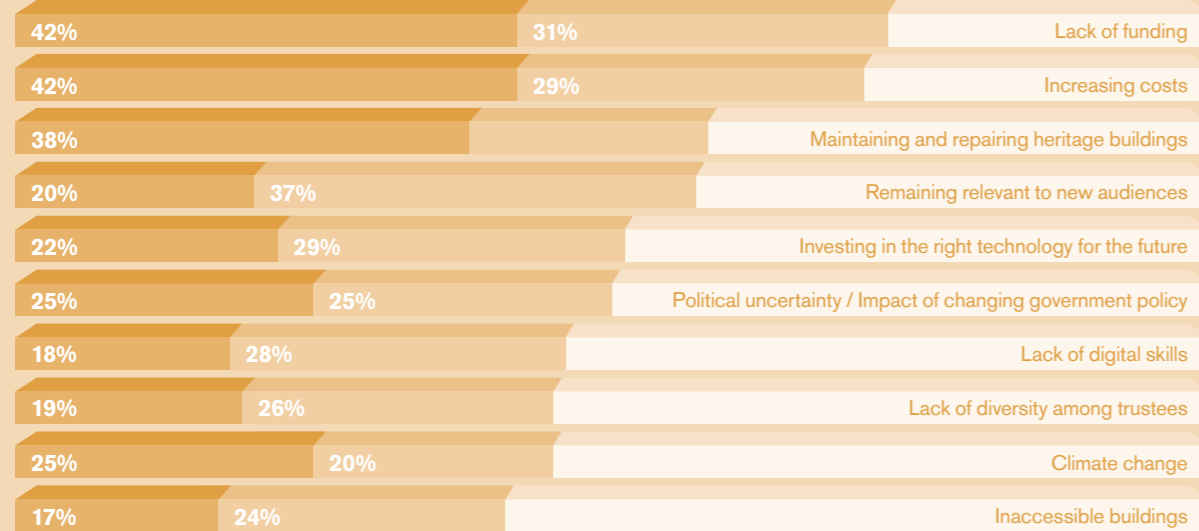
As the leading insurer of Grade I listed buildings in the UK, we've been trusted to protect some of the nation's most treasured properties for over 130 years. Our passion for heritage runs deep and we want to see the sector continue to not just survive but thrive. We believe the changes catalysed by the COVID-19 pandemic present a unique opportunity for the heritage sector and organisations within it to embrace technology and use it to both reduce risk and enhance visitor experiences. How it does this will be key to its survival.

The future of heritage will be the perfect combination of analogue and digital. Not tech for tech's sake but tech for progress's sake. These were some of the themes developed in a one-day workshop in the stunning Kenwood House on London's Hampstead Heath back in October 2019. Back then, the industry had little idea what events were about to follow but the issues discussed then will undoubtedly remain perennial.
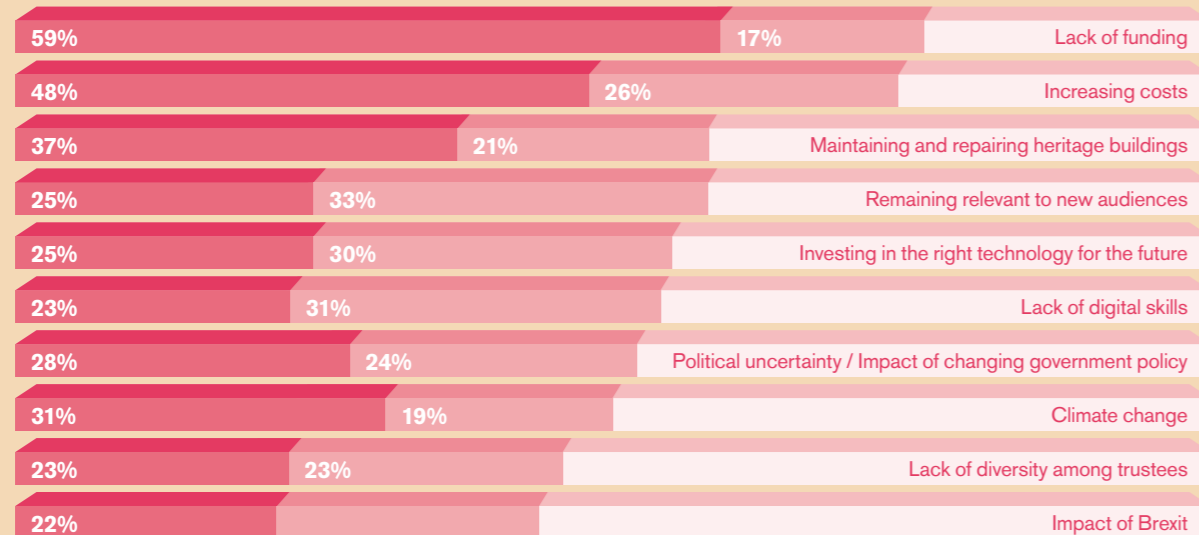
Following the workshop, we surveyed 102 heritage organisations in January and February 2020, to help us get a deeper understanding of the issues raised. It was shortly after this that the outbreak of COVID-19 began and so we have carried out additional research in September 2020 with 500 decision makers who work at museums, galleries, theatres, stately homes and castles, to get the latest perspective. This report captures the findings of all the research and shines a light on the opportunities and challenges of using technology in the heritage sector.

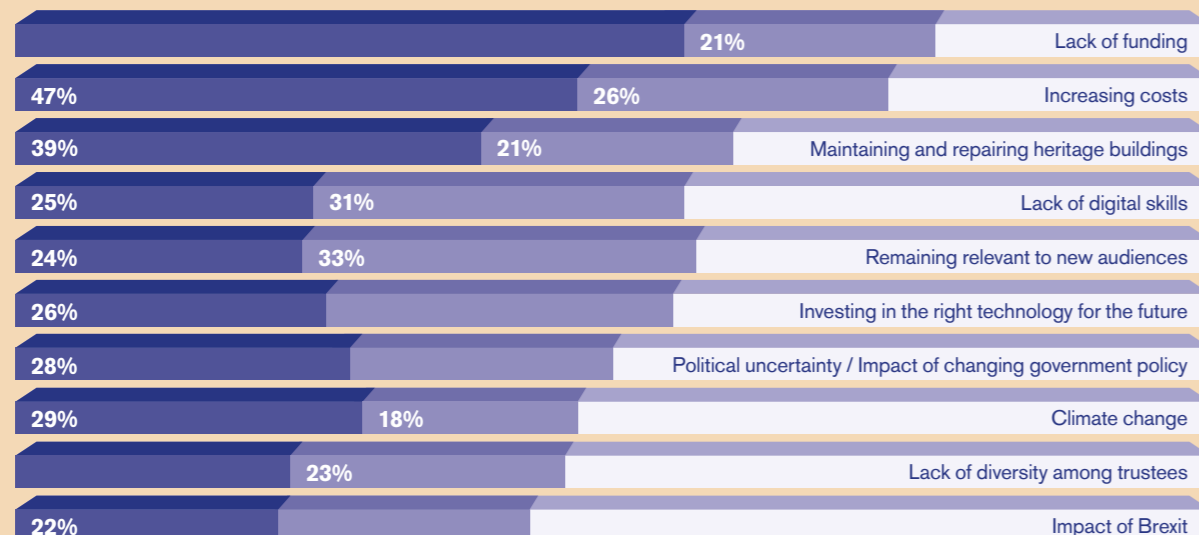**Faith Kitchen, Heritage Director, Ecclesiastical Insurance**

SHORT-TERM CONCERNS: 1 YEAR

	Extremely concerned	Very concerned	
Lack of funding	42%	31%	
Increasing costs	42%	29%	
Maintaining and repairing heritage buildings	38%		
Remaining relevant to new audiences	20%	37%	
Investing in the right technology for the future	22%	29%	
Political uncertainty / Impact of changing government policy	25%	25%	
Lack of digital skills	18%	28%	
Lack of diversity among trustees	19%	26%	
Climate change	25%	20%	
Inaccessible buildings	17%	24%	

MEDIUM-TERM CONCERNS: 3 YEARS

	Extremely concerned	Very concerned
Lack of funding	59%	17%
Increasing costs	48%	26%
Maintaining and repairing heritage buildings	37%	21%
Remaining relevant to new audiences	25%	33%
Investing in the right technology for the future	25%	30%
Lack of digital skills	23%	31%
Political uncertainty / Impact of changing government policy	28%	24%
Climate change	31%	19%
Lack of diversity among trustees	23%	23%
Impact of Brexit	22%	

LONG-TERM CONCERNS: 5 YEARS

	Extremely concerned	Very concerned
Lack of funding		21%
Increasing costs	47%	26%
Maintaining and repairing heritage buildings	39%	21%
Lack of digital skills	25%	31%
Remaining relevant to new audiences	24%	33%
Investing in the right technology for the future	26%	
Political uncertainty / Impact of changing government policy	28%	
Climate change	29%	18%
Lack of diversity among trustees		23%
Impact of Brexit	22%	

Extremely concerned   Very concerned

WHY DIGITAL MATTERS

Technology is crucial for the future of the heritage sector – in our initial survey more than four in five respondents said it was fundamental to the running of their organisations. Just 20% believe that technology is not fundamental to the running of their organisation and 7% believe that new technology is not an important consideration in the future of their organisation.

The opportunities for the sector to embrace technology are boundless – from reducing running costs, improving the visitor experience and engaging with new audiences to digital record-keeping and protecting the historic fabric of buildings. This report looks at how heritage organisations can make the most of these opportunities and what the sector needs to do to create a digitally-capable environment.

As part of our research into how heritage organisations are using technology, we first asked them about the biggest challenges facing them over the short, medium and long term.

The key issues facing heritage organisations in the short term are lack of funding (42%), increased running costs (42%) and maintaining and repairing their property (38%). Unsurprisingly, costs and maintenance remain the core concerns in the long term (the next five years) for heritage organisations.

On top of these, climate change, availability of heritage materials and political change and uncertainty also weigh heavy on organisation's minds. But through all the discussions, the use and future role of technology in heritage was a core thread – more than half of all heritage organisations are concerned about investing in the right technology for the future – so it's this we have chosen to focus on.

Even before COVID-19, more than two-thirds (69%) of those we spoke to believed that the sector must embrace new technology or it risks becoming less relevant, while more than half agree that their own organisation risks losing relevance if it does not embrace technological change.

With the experience of the last six months behind them, 83% of decision makers actually fear for the future of the heritage sector post COVID-19 if it doesn't adapt and use digital attractions. Yet, nearly half (46%) of heritage organisations don't believe they have the right skills to keep pace with technology-driven changes.

This point was proven as 29% of our September survey respondents said their organisation's workforce had to improve their digital skills to adapt during lockdown. The reasons are not unexpected; lack of funding and lack of clarity in training and continuing professional development (CPD) all play their part. But can the sector adapt and thrive in the digital age and how?

CAST HEADSETS TO SHIFT MINDSETS
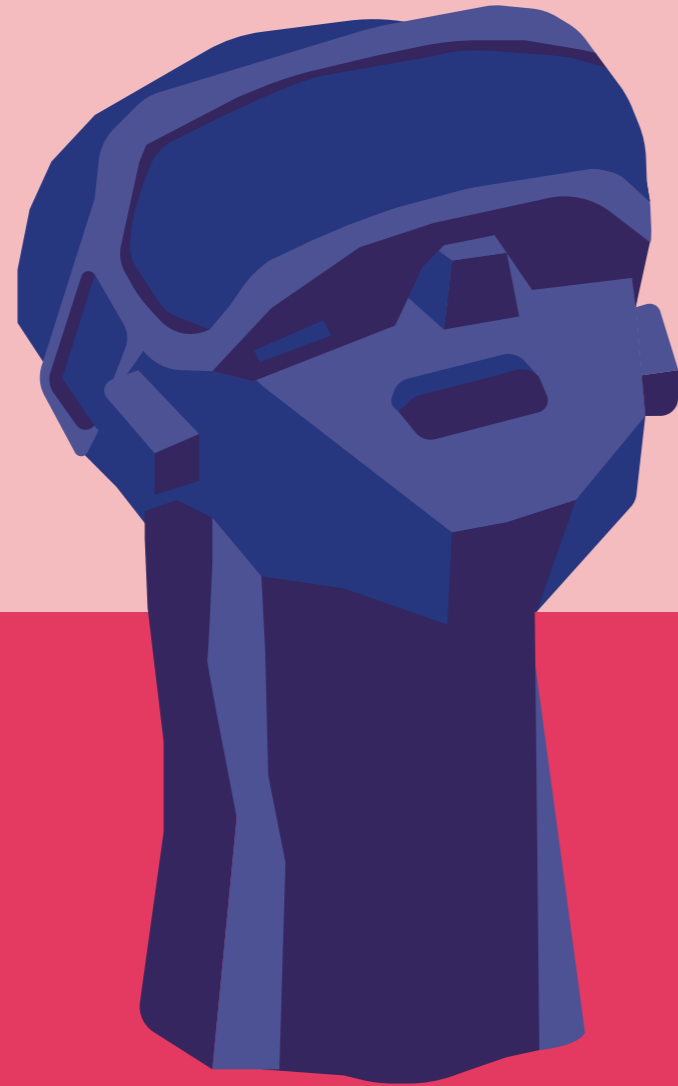
More than three-quarters (78%) of UK heritage organisations agree that the use of new technology is an important consideration in the future / planning of their organisation, with 59% agreeing that they risk losing relevance if they don't embrace technological change.

Attitudes towards technology
The COVID-19 pandemic has brought to the fore the importance of technology for heritage organisations. Without physical visitors, attractions had to act fast in creating or relying on digital experiences to engage audiences. 87% of Britain's heritage attractions started offering digital attractions due to COVID-19 according to our latest research. Galleries have opened up their exhibitions online, theatres live-streamed performances and you can even have a VR tour of Buckingham Palace. Certain parts of the sector have had to accelerate their adoption of technology in very challenging circumstances, and only 2% have no plans to offer digital attractions in the future.

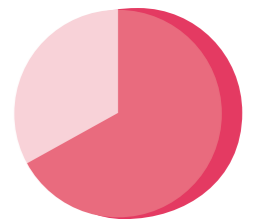## WE ASKED OUR RESPONDENTS: HOW FAR DO YOU AGREE WITH THE FOLLOWING STATEMENTS?
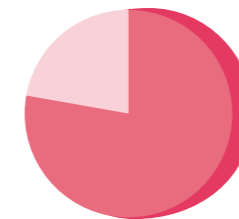
78% strongly agree or agree

The use of new technology is an important consideration in the future / planning of our organisation
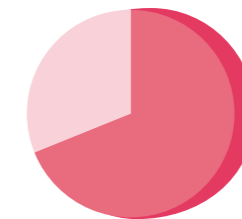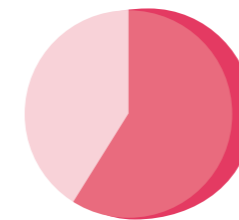
69% strongly agree or agree

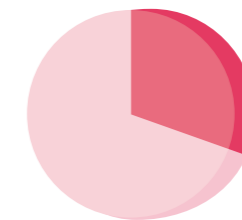The heritage sector risks losing relevance if it does not embrace technological change

67% strongly agree or agree

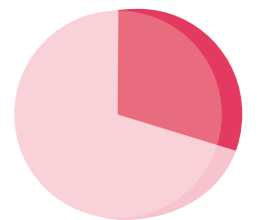Technology is fundamental to the running of our organisation

59% strongly agree or agree

Our organisation risks losing relevance if it does not embrace technological change
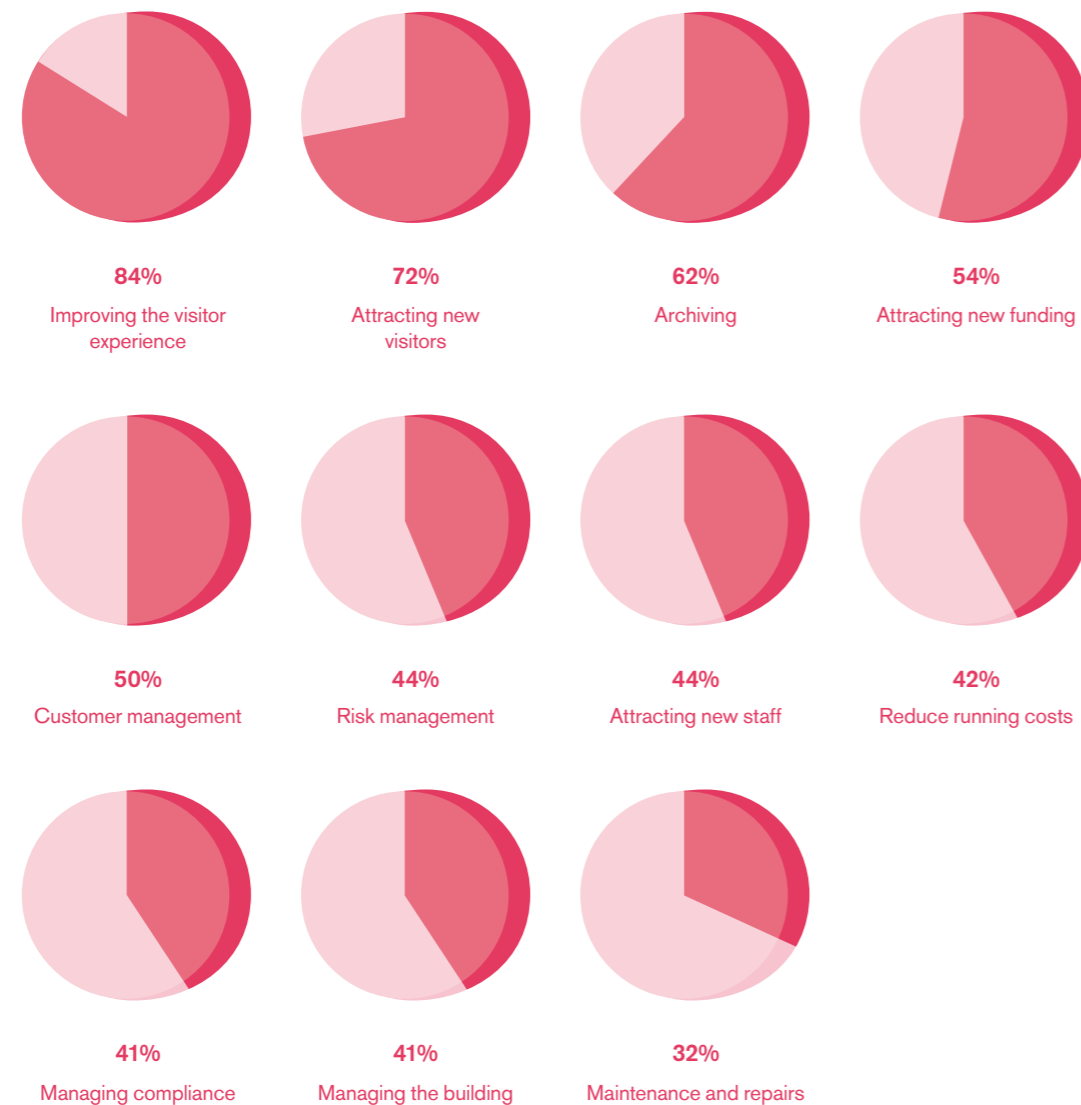
31% strongly agree or agree

Our organisation has the skills to keep pace with changes driven by technology

30% strongly agree or agree

Our organisation has the resources to keep pace with changes driven by technology

WE ASKED OUR RESPONDENTS: WHERE CAN TECHNOLOGY HAVE THE BIGGEST IMPACT IN YOUR ORGANISATION?

84%
Improving the visitor experience

72%
Attracting new visitors

62%
Archiving

54%
Attracting new funding

50%
Customer management

44%
Risk management

44%
Attracting new staff

42%
Reduce running costs

41%
Managing compliance

41%
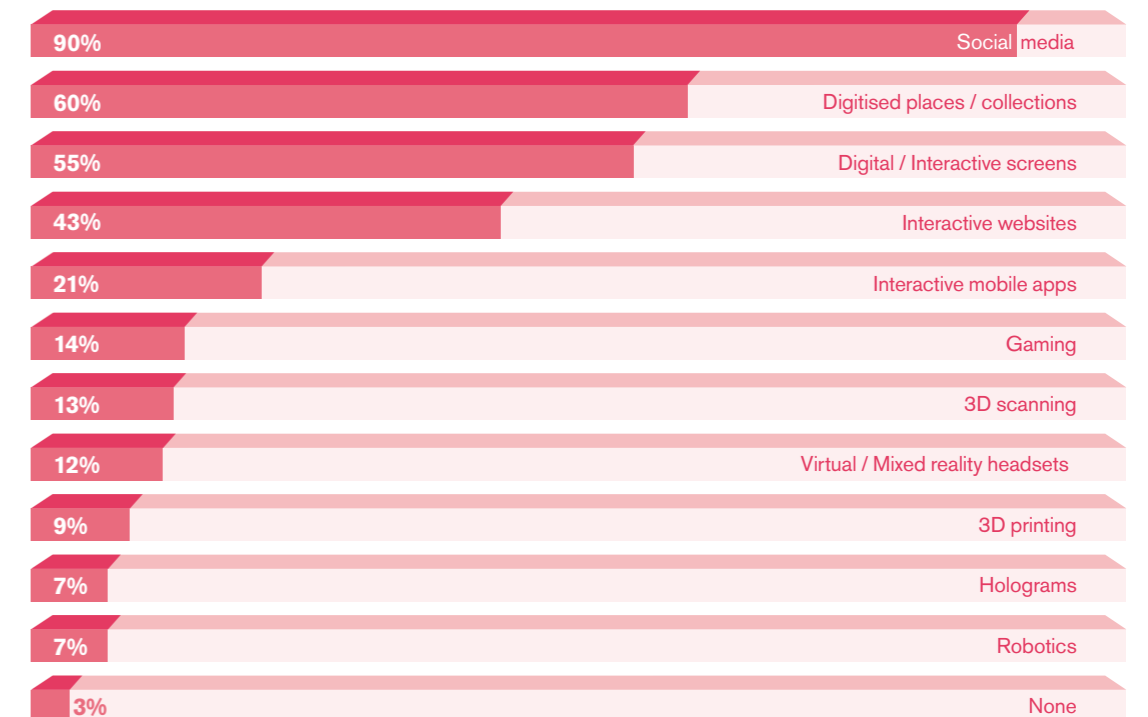Managing the building

32%
Maintenance and repairs

In our research carried out before the pandemic, 84% of heritage organisations said that improving the visitor experience is where the use of new technology can have the biggest impact, with 72% agreeing it can result in an increase in visitor numbers. Fast forward seven months and now 87% of those in the September survey said that digital attractions will be important to their organisation in the future, with 36% saying it will be extremely important.

Social media is the most widely used technology for engaging audiences with 90% of heritage organisations using it in some form (primarily through Facebook, Twitter and Instagram). However, while many in the sector can see the benefits of using digital to reach audiences, some fear this could potentially reduce footfall as people might not want to visit in person. But when that footfall was removed completely by the lockdown, four in five (80%) of those surveyed felt the use of digital attractions became more important for their organisation, a quarter said this had greatly increased.

'There's a real sense that some are scared of digital as something which is not as good as the real thing,' says James Delaney, founder and managing director of design studio and consultancy BlockWorks, which has run a season of successful Minecraft workshops with English Heritage, involving recreating scale models of Dover and Kenilworth Castles.

WE ASKED OUR RESPONDENTS: WHICH OF THE FOLLOWING TECHNOLOGIES DOES YOUR ORGANISATION USE TO ENGAGE / ATTRACT VISITORS?

Percentage	Technology
90%	Social media
60%	Digitised places / collections
55%	Digital / Interactive screens
43%	Interactive websites
21%	Interactive mobile apps
14%	Gaming
13%	3D scanning
12%	Virtual / Mixed reality headsets
9%	3D printing
7%	Holograms
7%	Robotics
3%	None

Some of the responses to our survey supported this concern. One respondent said: 'I don't think technology can improve our visitor experience as people come to see this building and enjoy history, not stare at a screen.'

However Delaney argues that heritage organisations should push their fears aside and embrace tech to stay relevant, even post COVID-19. 'Using tech for engagement and getting new audiences interested, along with tech in surveys and conservation, seem to be well accepted,' he says. 'But less well-explored are areas of virtual environments and augmented and virtual reality experiences. 2.5bn people across the world are regular gamers and gaming has caught up with film and TV and mainstream media. This needs to be recognised.'

There's a perception, says Delaney, that encouraging people to play video games detracts from the 'real' thing but, he says, 'often things they experience in a game and at home can motivate them to go and see the real thing. If you read Harry Potter and go to Edinburgh you're excited to see the castle; the famous steps in New York as seen in Joker attracted thousands of Instagram visitors. Video games are distortions of our reality and when people play games they make connections to that reality.'

Anyone with any doubt about the place of video games in modern heritage need look no further than the realistic 3D version of the 12th-century

THERE'S A REAL SENSE THAT SOME ARE SCARED OF DIGITAL AS SOMETHING WHICH IS NOT AS GOOD AS THE REAL THING. OFTEN THINGS THEY EXPERIENCE IN A GAME AND AT HOME CAN MOTIVATE THEM TO GO AND SEE THE REAL THING.
JAMES DELANEY
FOUNDER AND MANAGING DIRECTOR,
BLOCKWORKS DESIGN STUDIO AND CONSULTANCY

Notre Dame used in the Assassin's Creed Unity game that gave insight to those reconstructing the fire-ravaged cathedral. Certainly, COVID-19 caused the fast forward button to be pressed and now adoption is increasing rapidly. In the recent survey, three in five (60%) of those already offering or planning to offer digital attractions, say they will introduce virtual events. Half plan to offer video content, 44% virtual tours and 40% plan to run social media question and answer sessions.

The case for personalisation
As boundaries between heritage and entertainment blur, there's a real risk that visitor expectations will leave traditional heritage behind. There's a recognition that new revenue streams are needed but in order to make the most of the possibilities a broader dialogue and a shift in mindset is needed.

'Relevance has always been a challenge for the industry,' says a leading conservator, 'If you look at this historically then the industry has to adapt and the challenge is that different sites and museums are individual and unique. So you really have to understand your site and its use in order to maintain its relevance and, ultimately, its sustainability.'

The Department of Culture, Media and Sport (DCMS) highlighted in its June 2019 Progress Report[1], 'Culture is Digital' that 'the average Briton spends 24 hours a week online'. It said, 'Digital activity is increasingly becoming the new ordinary'. As that report, our own research and The Heritage Alliance – Heritage Digital's survey highlights, poor or average digital skills are holding back heritage organisations.

Previous research from Ecclesiastical[2] has found that over half (52%) of young people who had visited a heritage organisation online said the digital experience inspired them to want to visit in person.

'The heritage sector is at risk of becoming irrelevant, or left behind, unable to connect with younger, wider and more diverse audiences and volunteers in comparison to other sectors, or compete for funding,'

THE HERITAGE SECTOR IS AT RISK OF BECOMING IRRELEVANT, OR LEFT BEHIND, UNABLE TO CONNECT WITH YOUNGER, WIDER AND MORE DIVERSE AUDIENCES AND VOLUNTEERS IN COMPARISON TO OTHER SECTORS.
DELPHINE JASMIN-BELISLE
DEVELOPMENT AND MEMBERSHIP MANAGER,
HERITAGE ALLIANCE

says Delphine Jasmin-Belisle, development and membership manager at The Heritage Alliance, 'This in turn will impair its sustainability and capacity to protect and keep heritage and the historic environment alive for current and future generations.'

One of the solutions is to create a more personalised visitor experience. We know that personalising and making the visitor experience relevant to future audiences is important to the heritage sector. As much as 70% said personalising the visitor experience to engage future audiences was important, with 35% rating it as extremely important. However, despite this perceived importance, a third of heritage organisations are currently doing nothing to support it. Though 84% said tech could have the biggest impact on visitor experience and 42% said that heritage organisations need to offer a 'unique experience' for visitors, only half said they were planning to increase investment in visitor experience technology over the next 12 months, dropping to 10% in the next three years.

However, if funds allowed, 31% said they would invest in interactive mobile apps and 24% virtual / mixed reality headsets. Comments from the sample who didn't consider it important included, 'we don't think personalisation is the way forward', 'we are so small that every visit is personalised anyway if people want it to be,' 'we have more immediate priorities'.

But at the same time there's a line to observe. 'You do sometimes see really cheesy projects, just for the sake of it,' says James Delaney, 'there's a real case to be made for digital authenticity.'
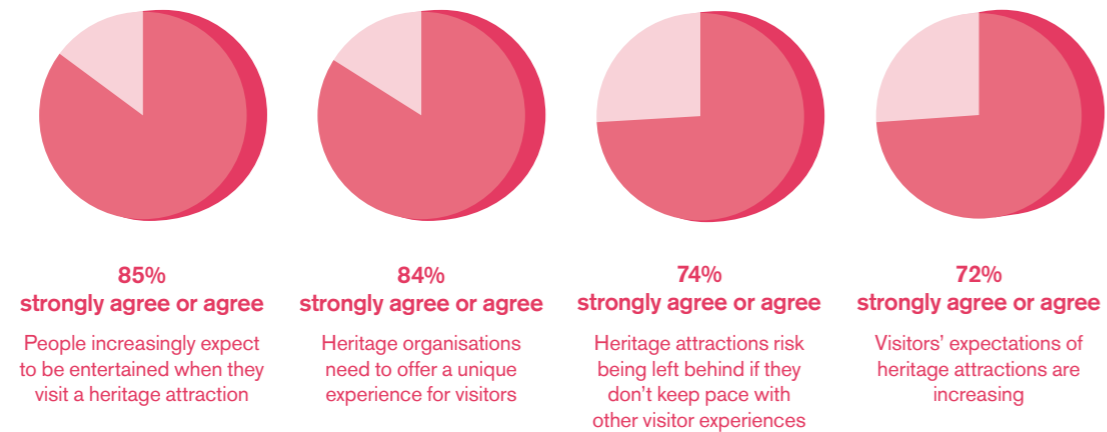
Andy Gawin-Warby, senior partner of social value consultancy, The Envoy Partnership which has worked with organisations such as Historic England, agrees: 'Sometimes a virtual reality component (online or in-house) can be very engaging, but it can all be easily overdone, killing some of the authenticity and novelty.'

WE ASKED OUR RESPONDENTS: HOW IMPORTANT IS PERSONALISING VISITOR EXPERIENCES TO ENGAGE FUTURE AUDIENCES?
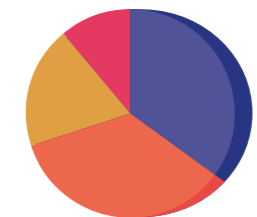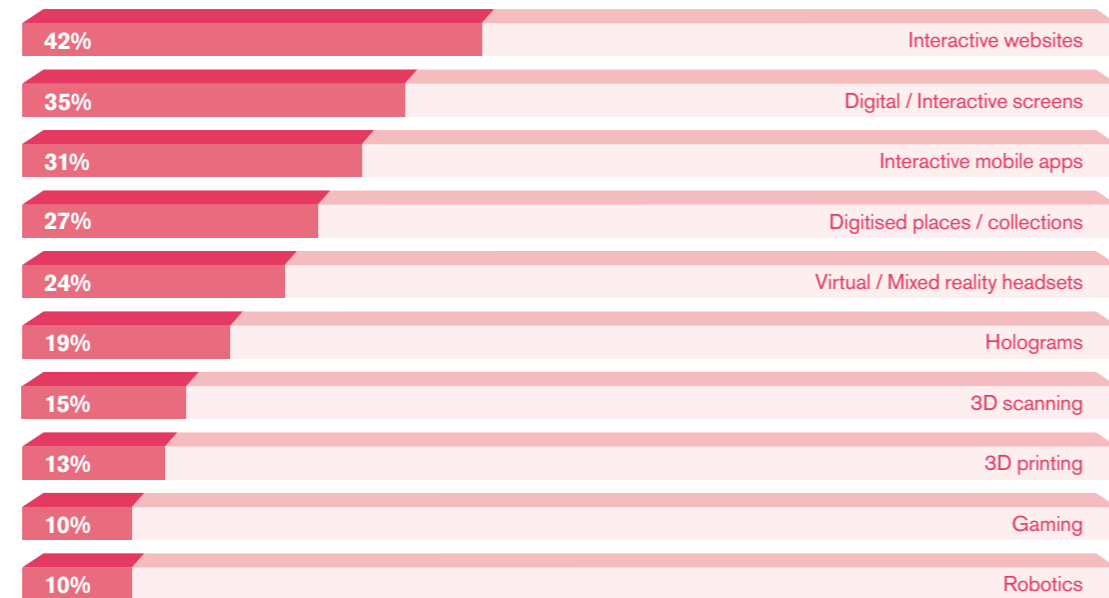

● **Extremely important 35%**

● **Very important 35%**

● **Not very important 19%**

● **Not at all important 11%**

WE ASKED OUR RESPONDENTS: HOW MUCH DO YOU AGREE OR DISAGREE WITH THE FOLLOWING STATEMENTS?
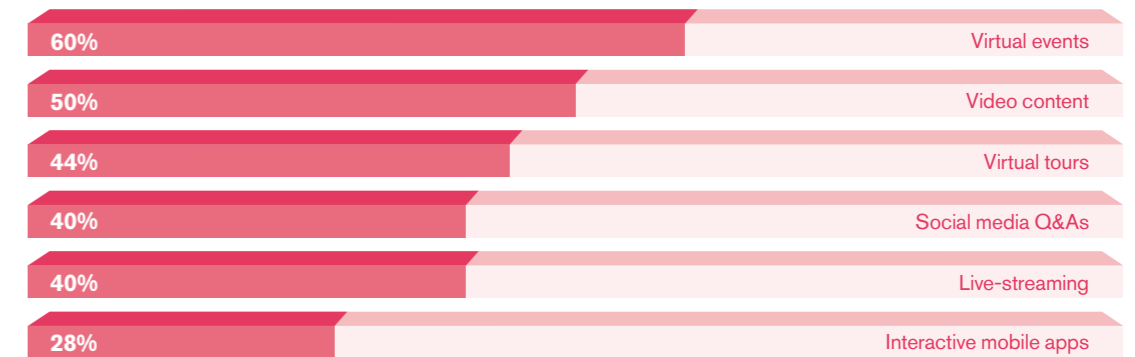
85%
strongly agree or agree

People increasingly expect to be entertained when they visit a heritage attraction

84%
strongly agree or agree

Heritage organisations need to offer a unique experience for visitors

74%
strongly agree or agree

Heritage attractions risk being left behind if they don't keep pace with other visitor experiences

72%
strongly agree or agree

Visitors' expectations of heritage attractions are increasing

WE ASKED OUR RESPONDENTS: IF YOU HAD THE FUNDS, WHICH TECHNOLOGIES WOULD YOUR ORGANISATION MOST LIKELY INVEST IN?

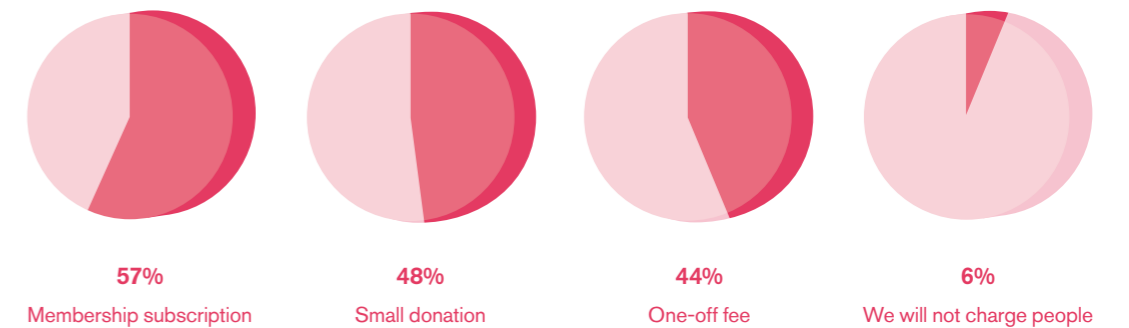| %	Technology
42%	Interactive websites
35%	Digital / Interactive screens
31%	Interactive mobile apps
27%	Digitised places / collections
24%	Virtual / Mixed reality headsets
19%	Holograms
15%	3D scanning
13%	3D printing
10%	Gaming
10%	Robotics

WE ASKED OUR RESPONDENTS: WHICH DIGITAL ATTRACTIONS DOES YOUR ORGANISATION PLAN TO OFFER IN THE FUTURE AS A RESULT OF COVID-19?

September 2020 survey

%	Attraction
60%	Virtual events
50%	Video content
44%	Virtual tours
40%	Social media Q&As
40%	Live-streaming
28%	Interactive mobile apps

WE ASKED OUR RESPONDENTS: OF THOSE WHO EITHER CURRENTLY DO, OR PLAN TO OFFER DIGITAL ATTRACTIONS, HOW WILL YOUR ORGANISATION CHARGE PEOPLE TO ACCESS DIGITAL ATTRACTIONS IN THE FUTURE?

September 2020 survey

57%
Membership subscription

48%
Small donation

44%
One-off fee

6%
We will not charge people

Investing in the future

Our January / February survey found nearly half of those we spoke to were planning to increase their technological investment in the next 12 months – principally on interactive websites, apps and at-venue screens. However, the impact of COVID-19 may well affect these decisions and where the focus of any spending might fall. In September, a resounding 90% agree that the heritage sector needs to invest more heavily in technology in order to thrive. With well over a third (41%) strongly agreeing this is the case. A Historic England report[3] found that nearly four out of five (76%) of respondents report lost business in the short term, and nearly three out of five (58%) had postponed or cancelled income-generating events as a result of the pandemic.

A MORE RESILIENT AND SUSTAINABLE SECTOR WILL INCREASINGLY USE DIGITAL TECHNOLOGY TO IMPROVE ITS EFFICIENCY, GROW SUPPORT, AND BE EQUIPPED FOR INNOVATIVE THINKING, USING ITS RESOURCES TO CHAMPION HERITAGE AND COMMUNICATE ITS ROLE IN CHANGING LIVES.

DELPHINE JASMIN-BELISLE
DEVELOPMENT AND MEMBERSHIP MANAGER,
HERITAGE ALLIANCE

Just a quarter of people we spoke to at the start of 2020 agree that their organisation has the resources to keep pace with technological-driven changes in the sector. Unsurprisingly, funding and current infrastructure are issues, with more than 80% of heritage organisations saying that the lack of funding in the sector is a barrier to using new technology. Conversely more than half (54%) of heritage organisations believe that technology can help them attract new funding. 'A venue can be creative and experientially engaging without much need for technology, whilst still enhancing the interpretation

and making a long-lasting effect on someone's experience,' says Gawin-Warby 'That requires a lot of set up and careful thinking as to managing and shaping – and exceeding – audience expectations.'
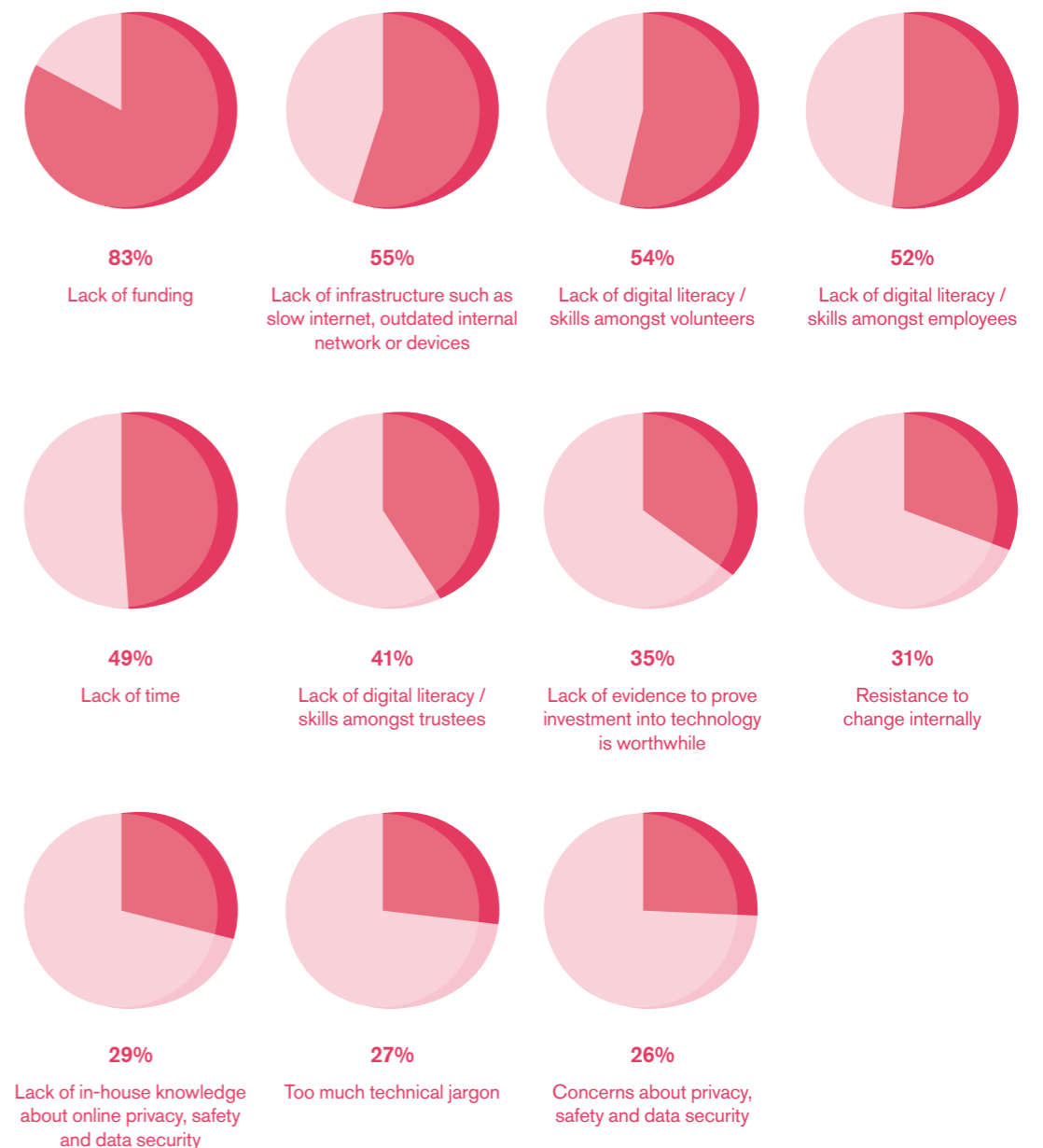
However, Gawin-Warby says, 'for heritage organisations that need a lot of tech for archiving, or simply due to the nature of their collection, it may make more sense to invest in appropriate and proportionate forms of technology for their interpretation.' 'The challenge with digital and the heritage sector goes beyond having the 'right digital tools' in place,' says Jasmin-Belisle, 'The key need is to embed a digital strategy and culture throughout heritage organisations.' She adds, 'A more resilient and sustainable sector will increasingly use digital technology to improve its efficiency, grow support, and be equipped for innovative thinking, using its resources to champion heritage and communicate its role in changing lives.'

Of course this is the dream but, as Dr Heather Smith, equality specialist at the National Trust, points out, there are barriers. These include, 'resources – financial and human, knowledge development, planning to be sure that we are able to land any new technology successfully and the opportunity of working collaboratively to find out what other organisations are utilising to help us with decision-making.'

There is of course the question, can investing in technology help to generate an income stream? We put this to the sector in the September survey. Many of those already offering digital attractions, or planning to, say they will start to charge people to access them. More than half (57%) said this will be via a membership subscription; 44% will be considering implementing this with a one-off fee and 48% will be via a small donation. Only 6% do not plan to charge for their digital offerings in the future.

English Heritage offered live coverage of the summer solstice at Stonehenge this year. Events were live-streamed across their social media channels reaching people across the globe. While the event was free to attend, viewers were asked to make a small donation on a voluntary basis.

WE ASKED OUR RESPONDENTS: WHICH OF THE FOLLOWING ARE BARRIERS TO USING NEW TECHNOLOGIES IN YOUR ORGANISATION?

83%
Lack of funding

55%
Lack of infrastructure such as slow internet, outdated internal network or devices

54%
Lack of digital literacy / skills amongst volunteers

52%
Lack of digital literacy / skills amongst employees

49%
Lack of time

41%
Lack of digital literacy / skills amongst trustees

35%
Lack of evidence to prove investment into technology is worthwhile

31%
Resistance to change internally

29%
Lack of in-house knowledge about online privacy, safety and data security

27%
Too much technical jargon

26%
Concerns about privacy, safety and data security
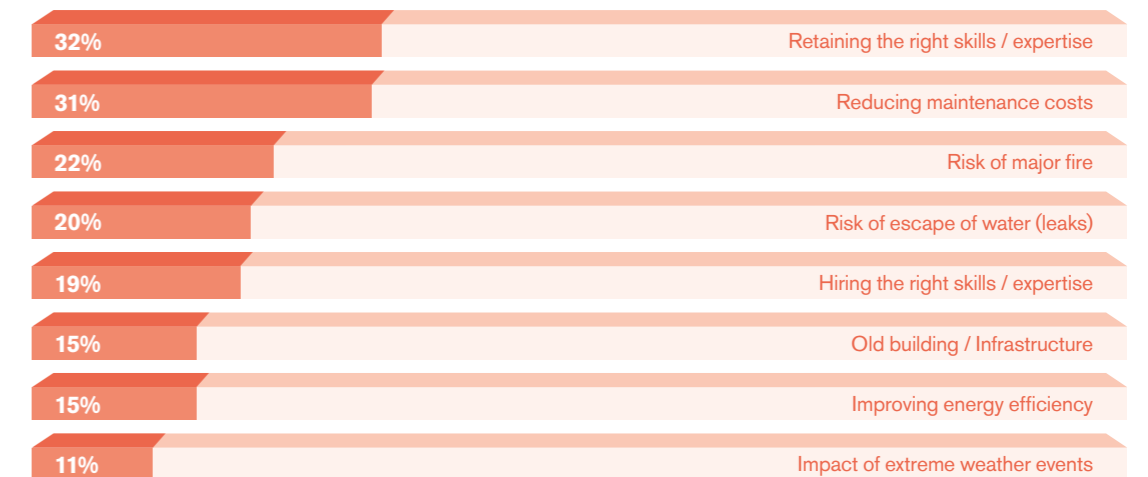
SENSE THE NEXT MOVE

In our sample, the top three maintenance and conservation concerns are retaining the right skills, reducing maintenance costs and fire. Approximately a third (32%) of all heritage organisations are not using technology to maintain or conserve but some 41% of our sample believe that tech could have a real impact on reducing compliance and managing the building, with the same amount agreeing that it would help with reducing running costs. Thirty two per cent agree that it could impact maintenance and repairs.

It's clear that some organisations are missing a trick, says Nicholas Hartley, Ecclesiastical's head of business improvement and innovation: 'Maintenance costs alone can account for a significant part of a heritage building's annual budget and maintaining these buildings can often be difficult and very expensive. Scheduled maintenance programmes are often too rigid or out of date and the standard, onsite facility management model focuses on failure and reactive repairs. This often results in staff deployment, unexpected disruption and unwanted downtime for the property.'

In fact, Historic Royal Palaces[4] announced in June that it spent £37m solely on conservation and maintenance in the last financial year.

WE ASKED OUR RESPONDENTS: OUT OF THE FOLLOWING WHICH ARE YOUR ORGANISATION'S TOP THREE MAINTENANCE /CONSERVATION CONCERNS?

%	Concern
32%	Retaining the right skills / expertise
31%	Reducing maintenance costs
22%	Risk of major fire
20%	Risk of escape of water (leaks)
19%	Hiring the right skills / expertise
15%	Old building / Infrastructure
15%	Improving energy efficiency
11%	Impact of extreme weather events

Technology is being used well by some in cutting operational expense. 59% of our sample said they used sensor technology for maintenance /conservation. At Kenwood House, for example, wireless battery-operated sensors are being used to discreetly monitor machinery and environmental changes within the building.

The numerous sensors that have been installed upload data 24/7 to the platform which uses machine learning to analyse this large volume of information and builds up a pattern of normal operation. It then uses these data-driven insights to focus on the probability of what could happen and triggers an alert to the property management team who can then investigate and undertake maintenance.
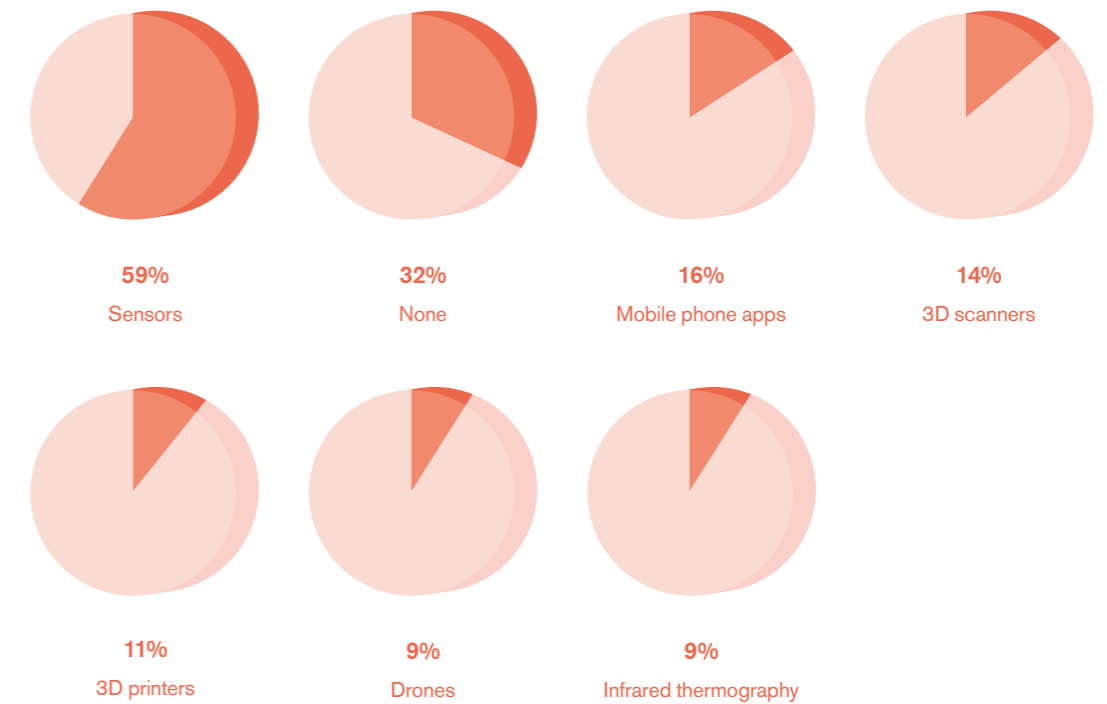
The data platform can be viewed remotely on a computer, phone or tablet and the automatic alerts mean that the onsite team can react to any incidents before they become disruptive events. Hartley says 'Sensor technology now enables property managers to move beyond reactive or preventative programmes into a new era of predictive maintenance'.

At Worcester Cathedral, drone technology has been used to survey the external building envelope to look for damage to slates, tiles, stonework or missing pointing without the need to send people up to the roof or deploying scaffolding. Elsewhere, thermography is being used by some as a way of preventing fires by picking up electrical issues before they become dangerous. And in maintenance terms, being able to monitor, for example, how cracks are moving over time, means maintenance teams are able to predict future damage and budget for repairs.
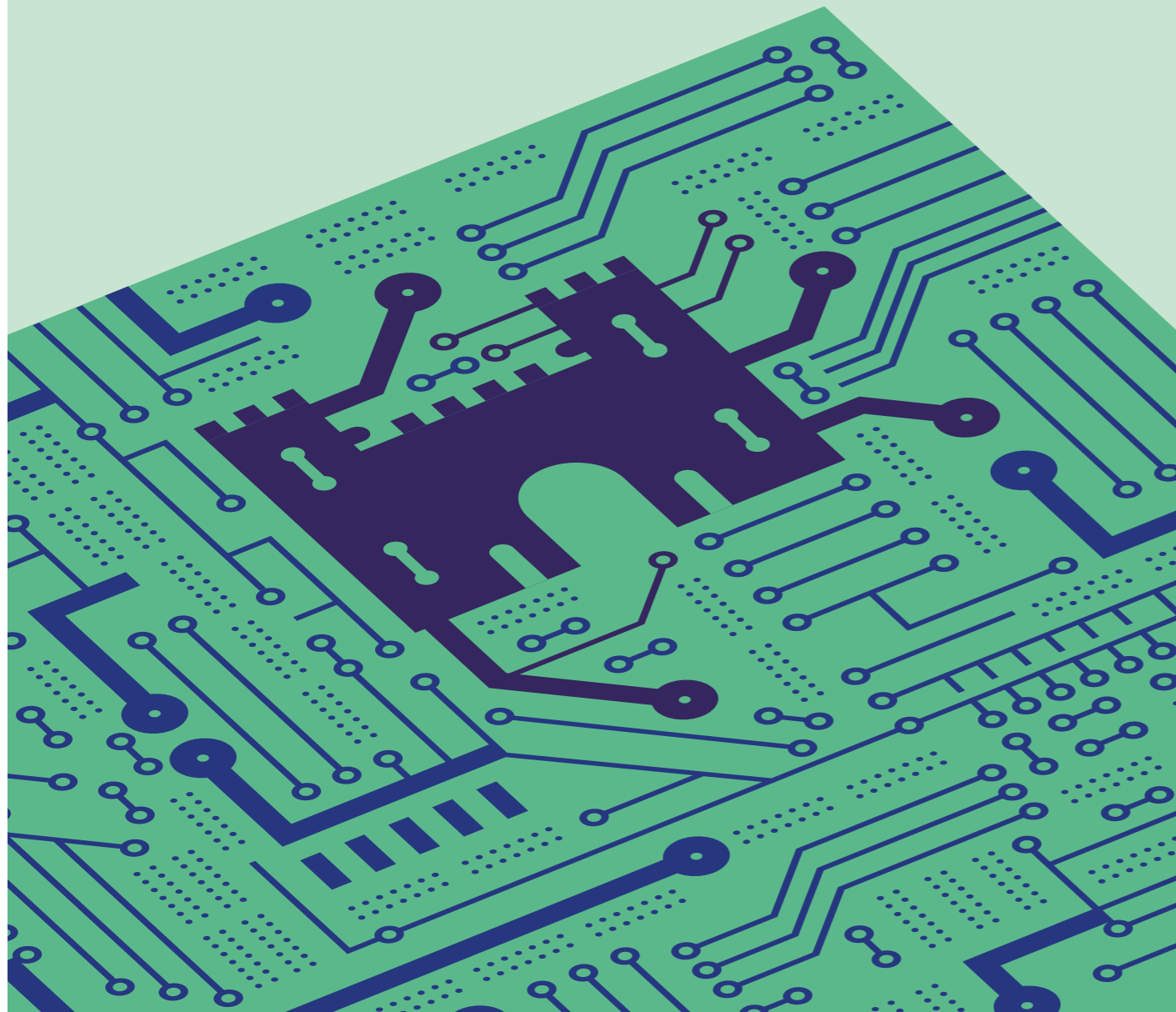
SCHEDULED MAINTENANCE PROGRAMMES ARE OFTEN TOO RIGID OR OUT OF DATE AND THE STANDARD, ONSITE FACILITY MANAGEMENT MODEL FOCUSES ON FAILURE AND REACTIVE REPAIRS. SENSOR TECHNOLOGY NOW ENABLES PROPERTY MANAGERS TO MOVE BEYOND REACTIVE OR PREVENTATIVE PROGRAMMES INTO A NEW ERA OF PREDICTIVE MAINTENANCE.
NICHOLAS HARTLEY
HEAD OF BUSINESS, IMPROVEMENT
AND INNOVATION, ECCLESIASTICAL

WE ASKED OUR RESPONDENTS: DOES YOUR ORGANISATION CURRENTLY USE ANY OF THE FOLLOWING TECHNOLOGIES FOR MAINTENANCE/CONSERVATION?

59%
Sensors

32%
None

16%
Mobile phone apps

14%
3D scanners

11%
3D printers

9%
Drones

9%
Infrared thermography

LEARN TO KEEP PACE

Though there is real keenness for technological innovation among heritage professionals, there is a skills gap, on top of the financial limitations. A 2019 report from Historic England[5] estimates that approximately £140m of potential Gross Value Added (GVA) was lost in the sector due to skills shortages in 2016.

Building up the skills rampart
In our pre-COVID-19 research, more than 40% thought their organisation does not have the right skills to keep pace with technology-driven changes and an additional 28% were unsure. More than half of heritage organisations believe that the lack of digital skills amongst their employees and staff was also stopping them embrace new technology. Again, this was borne out in the follow up research, where more than a quarter (29%) said their organisation's workforce had to improve their digital skills in order to adapt during lockdown. Of those needing to improve their skills 81% found this challenging, 23% extremely so.

The original research highlighted areas such as a lack of in-house knowledge about online privacy, data safety and data security was cited by 29% of our respondents as a key barrier to using new technology. In addition, 41% mentioned a lack of digital literacy skills among trustees.

Our initial discussions revealed that the large numbers of small organisations, with lots of volunteers and lower-paid staff means that people 'zigzag' around the sector. This means it can be difficult to maintain rigorous and consistent training in the right areas.

'Technology and data will be the way forward,' a leading conservator told us, 'We need data as supporting evidence – whether that is for modelling, maintenance, surveying, collections, or condition checking; the list is endless. So in terms of skills, the understanding of how to obtain accurate and scientific data which makes it valid, is crucial and being able to interpret it, is essential.'

Security is a major hurdle with tech, she adds: 'Architectural plans, documents such as finance and reports, photographs or 360 degree pics, (showing alarms, cameras or positions of valuable objects) must be kept safe with hard copies kept to a minimum. Document control has changed a lot over the years – everything was kept in paper format and audited onsite, now it is pretty much all digital. Small, medium and larger organisations will deal with all of this differently and will probably have different skill sets and experience. You do have to understand who you are managing when it comes to technology in practice and adoption – and this is a skill set of its own.'

Surprisingly, cyber security wasn't one of the biggest concerns in our sample, with only 13% saying they were 'extremely concerned' – 33% were not at all concerned. However, our own 2018 research[6] found that 1 in 10 heritage organisations have experienced a cyber attack. The same research found that nearly two-thirds of organisations (64%) didn't have a cyber security plan, 70% were without cyber security training and 71% without cyber insurance in place.

Half of all organisations agree that it is difficult to recruit people with digital skills in the heritage sector. There is some agreement that closer collaboration and increasing digital skills via training or recruitment of new staff, will help to create a digital culture in the sector but that ultimately pay will be the primary carrot to get the right skills.

The Heritage Alliance initiated conversation with the Heritage Fund more than two years ago on the need for communications and digital skills training for the sector. This fed into the Heritage Fund strategy and its new 'Digital Skills for Heritage' campaign.

In response to this campaign, in 2019 The Heritage Alliance formed a consortium of heritage and digital experts 'Heritage Digital'[7] in partnership with Media Trust, Charity Digital and Naomi Korn Associates. The consortium was awarded a Heritage Fund grant to deliver a high-quality UK-wide training

programme for the heritage sector, informed by Heritage Digital's digital skills survey, which took place in August 2019. Jasmin-Belisle says: 'Our aim is to drive the digital maturity of the heritage sector and set heritage organisations on a journey of digital skills development that will continue beyond the programme. As a result, an empowered sector will be able to reach broader audiences, engaging them through inclusive and diverse content.'

Peering above the parapet: collaboration and sharing

Across the board, collaboration is seen as crucial. One of our respondents believed that 'the bigger richer venues need to do more to support the smaller ones', another suggested that 'archives are way ahead of museums in digitalising and should share good practice and expertise more'.

However, a key issue is time, with some taking the view that 'managing technology can take up time that is better spent looking after a museum and its collections.' Some spoke of their struggle to go anywhere for continuous professional development (CPD) in digital skills due to staffing issues; and others said they missed out on vital training because museums and galleries were seen as low priority by council IT specialists.

'Collaboration requires time, resource, and commitment,' says Gawin-Warby, 'It relies on motivating other people, and showing your own motivation, leading by example at all times, and then sharing and showing the benefits.'
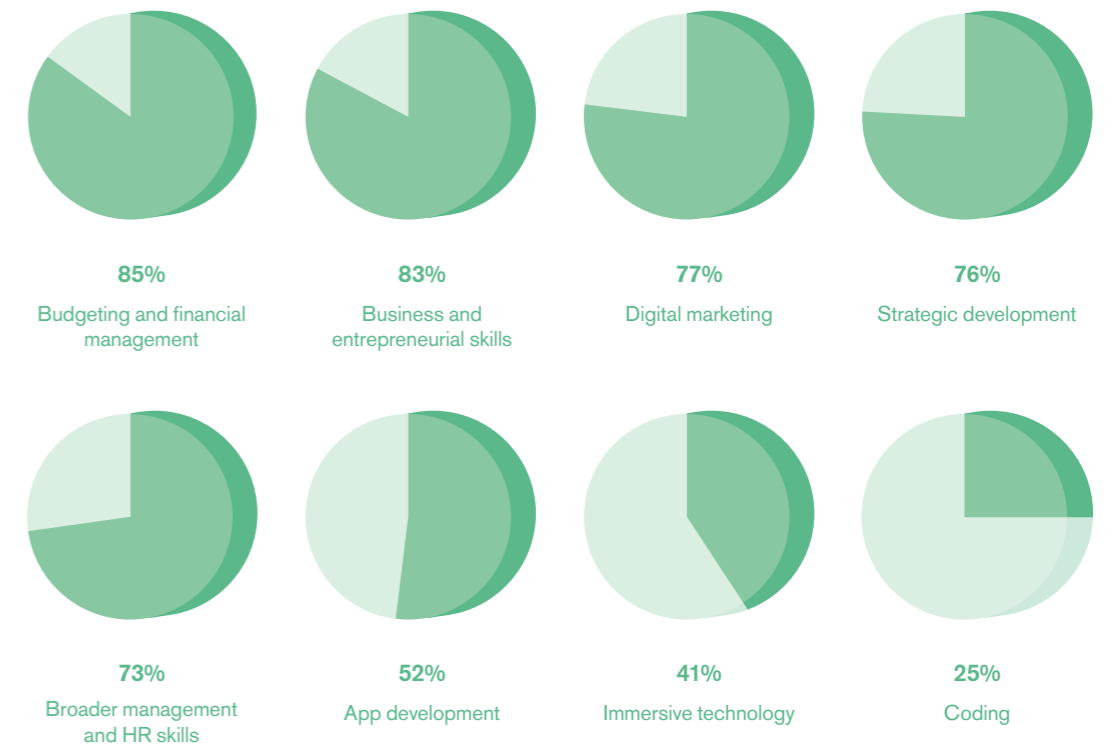
There is a real sense that the sector wants to collaborate more effectively. The Heritage Volunteering Group has a mission to help organisations unlock the power of volunteering through collaboration and best practice. There is a twice yearly networking forum, annual conference and regional networks to bring people together to share ideas, and help transform volunteering in the heritage sector. The National Trust is doing an increasing amount of collaborating through its 'Everyone Welcome' work. Says Dr Smith: 'Learning from and with others is really important to develop a more inclusive organisation, and a methodology which grows support and connection – amongst different communities – with our places.'

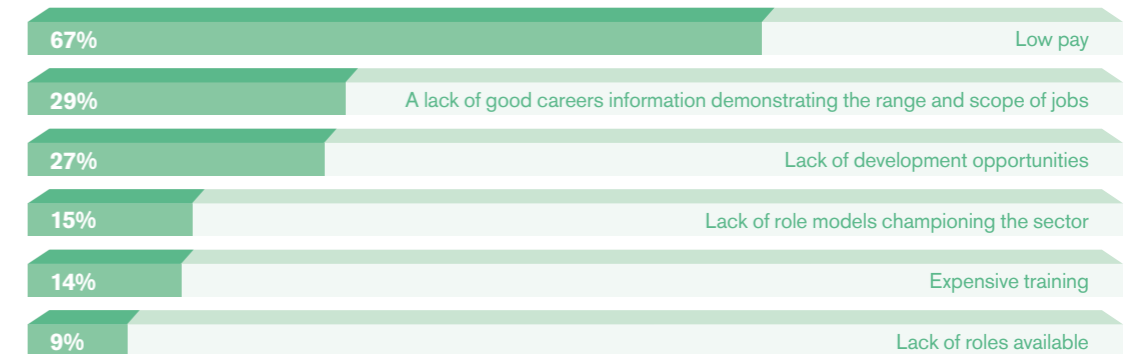## LEARNING FROM AND WITH OTHERS IS REALLY IMPORTANT TO DEVELOP A MORE INCLUSIVE ORGANISATION.

DR HEATHER SMITH
EQUALITY SPECIALIST, NATIONAL TRUST

The National Trust is also collaborating with the Research Centre for Museums and Galleries at the University of Leicester to test inclusion hypotheses and it has a research relationship with the University of Oxford. 'Locally', says Dr Smith, 'our properties are working with smaller organisations on specific pieces of work and also on the place of the property in the local community.'

WE ASKED OUR RESPONDENTS: WHICH OF THE FOLLOWING SKILLS WILL THE HERITAGE SECTOR NEED IN THE FUTURE IN ORDER TO THRIVE?

85% Budgeting and financial management

83% Business and entrepreneurial skills

77% Digital marketing

76% Strategic development

73% Broader management and HR skills

52% App development

41% Immersive technology

25% Coding

WE ASKED OUR RESPONDENTS: WHICH OF THE FOLLOWING DO YOU THINK ARE BARRIERS THAT PREVENT PEOPLE FROM WORKING IN THE HERITAGE SECTOR?

67%	Low pay
29%	A lack of good careers information demonstrating the range and scope of jobs
27%	Lack of development opportunities
15%	Lack of role models championing the sector
14%	Expensive training
9%	Lack of roles available

PLAY WITH THE PAST TO PROTECT THE FUTURE

The main risk to the heritage sector is lack of relevance. People don't come, revenues drop and this, in turn, prevents the innovation necessary to stay relevant. 'However, it's an unusual organisation that isn't looking at the world of digital to understand what it can do for them,' says Alex Book, chief strategy officer at augmented reality practice Arcade, which helps visitor attractions use immersive experiences to engage audiences. 'Those organisations which will succeed will be those that are open and able to grapple with some of the apparent threats that tech can bring to a sector that has so much invested in the 'real world'.' He adds, 'Either you bury your head in the sand and say "heritage matters and people will keep coming regardless" or you say "the world is changing and how can we think about what 2025 and 2030 might look like?".'

Something still very much missing from the heritage investment portfolio, Gawin-Warby points out, is evaluation technology, 'that is, using practical online tools or apps to follow up with visitors, audiences and consumers of heritage, as to the effectiveness of the heritage / culture they experienced and what emotional, social, or learning benefits they derived over the longer term.' And this was something of which our respondents did not report much use.

But Gawin-Warby thinks this is remiss: 'Can this change in social value be better monitored by culture and heritage sites, so as to connect back to the investment made? Affordable technology and data are certainly out there.'

However, there are barriers. As one of our workshop participants pointed out, 'organisations need to be bold in their decisions and accept we can't always present, save or pay for everything.' This might involve looking at the parts of the site they can make the most of, rather than everything and looking for alternative uses – such as education, research and private business – for other parts of a site. This could mean losing some heritage but making the most of what remains.

On the whole, among our sample, new technology was seen as a huge opportunity for the heritage organisations we spoke to and not a single heritage site perceived it as purely a threat to their survival.

However, it is easy to invest in new technology hoping that it's a miracle cure, 'This often brings limited results,' says Jasmin-Belisle, 'A more effective angle is to embed new technology within strategic planning, developing skills through training, while employing relevant tools at a tactical level – for example supporting stronger storytelling or streamlined operations.'

As we have seen in the response to coronavirus, heritage organisations must be able to adapt and respond to changing economic pressures and changing needs of visitors, as well as evaluate appropriately to meet the demands of funding.

The sector as a whole and organisations within it have the opportunity to selectively embrace technology and use it to both reduce risk and enhance visitor experiences. Those willing to experiment and collaborate will be the ones who remain most successful.

THOSE ORGANISATIONS WHICH WILL SUCCEED WILL BE THOSE THAT ARE OPEN AND ABLE TO GRAPPLE WITH SOME OF THE APPARENT THREATS THAT TECH CAN BRING TO A SECTOR THAT HAS SO MUCH INVESTED IN THE 'REAL WORLD'. EITHER YOU BURY YOUR HEAD IN THE SAND AND SAY "HERITAGE MATTERS AND PEOPLE WILL KEEP COMING REGARDLESS" OR YOU SAY "THE WORLD IS CHANGING AND HOW CAN WE THINK ABOUT WHAT 2025 AND 2030 MIGHT LOOK LIKE?".

ALEX BOOK
CHIEF STRATEGY OFFICER,
AUGMENTED REALITY PRACTICE ARCADE

Knowing where to begin can often be the biggest challenge to starting something new. We wanted to share some fantastic examples of the use of tech. From newsletters to events, using virtual reality to inform and engage audiences, through to managing buildings or training staff for the future, there are so many ways tech can be used to help heritage organisations thrive.

We hope you enjoy reading about what is possible and that these examples inspire you to embrace technology in your organisation.

WESTON PARK

Weston Park's augmented reality experience, The Enchanted Glen, encourages visitors to discover characters from 100-year-old fairy stories and poetry by Park resident Lady Diana Bridgeman. Visitors download the Enchanted Glen App, find trigger points and create their own adventures. The site worked with Stoke-on-Trent based video and production company Inspired Film and Video and app developers ohh-AR to create the experience.

Credit: English Heritage

Credit: English Heritage

ENGLISH HERITAGE

Back in 2017 English Heritage installed a virtual reality tour of St Augustine's Abbey in Kent, following a research partnership with the University of Kent. English Heritage also worked with VR company BlockWorks in 2018 as part of its #LoveCastles season. The company helped English Heritage rebuild Kenilworth Castle in Minecraft and hosted workshops at Kenilworth and Dover Castles. Workshop participants were given VR headsets to see their work in 3D. 'For things like this to work,' says BlockWorks' James Delaney, 'you have to have in place a long-term digital strategy rather than something that's just there as a media hit. It's about a programme of activities or a good solid plan.'

THE HERITAGE ALLIANCE

The Heritage Alliance runs multiple digital communications channels, including a website; direct emails from its CEO to members; 'Heritage Update', a fortnightly newsletter going to over 14k inboxes, keeping the sector abreast of the latest news and events; and its social media channels, engaging more than 24k followers. The Heritage Alliance has also started to live-stream some of its events on Twitter via Periscope.

CULTURE&

Culture&'s New Museum School programme provides one-year accredited traineeships, leading to an RQF Level 3 Diploma in Cultural Heritage. The course includes training in conservation, collections management, digitisation, public engagement and traditional restoration skills. The course partners with organisations such as English Heritage, Museum of London and Bletchley Park Trust.

KENWOOD HOUSE

The 18th-century Kenwood House in London has piloted cutting-edge technology to monitor and manage building services. The estates team has installed battery-operated sensors to discreetly monitor environmental changes within the building. The real-time, 24/7 monitoring, part of Ecclesiastical's loss prevention innovation programme, helps pre-empt and prevent damage, breakdowns and emergencies as well as showing how energy usage can be reduced and informing a more proactive maintenance approach.

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Useful links

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https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/686725/Culture_is_Digital_Executive_summary__1_.pdf

Heritage Digital
Heritage Digital is a project supported by the National Lottery Heritage Fund Digital Skills for Heritage funding stream, aiming to increase the amount of free digital skills training and support available to heritage organisations.
https://charitydigital.org.uk/heritage-digital

The Heritage Volunteering Group
http://www.heritagevolunteeringgroup.org.uk/

Cyber security
Ecclesiastical risk management
https://www.ecclesiastical.com/risk-management/cyber-security/
The National Cyber Security Centre
https://www.ncsc.gov.uk/

THE MAIN RISK TO THE HERITAGE SECTOR IS LACK OF RELEVANCE – THOSE WILLING TO EXPERIMENT AND COLLABORATE WILL BE THE ONES WHO REMAIN MOST SUCCESSFUL