UKBIM
ALLIANCE
buildingSMART
United Kingdom and Ireland

UKBIM
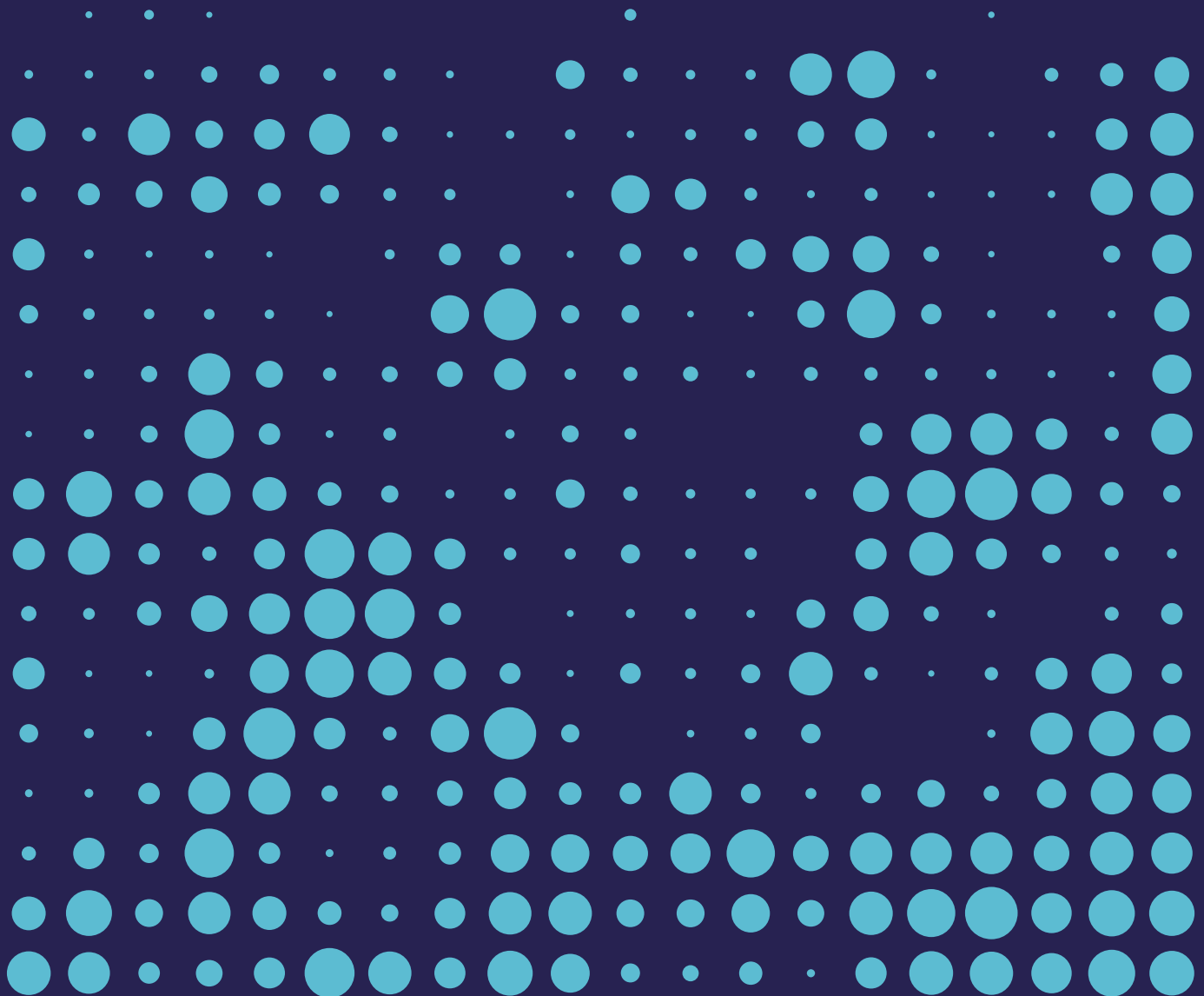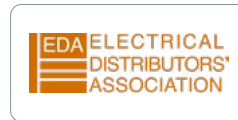ALLIANCE
Enabling Digital Transformation

State of the Nation Survey 2021

Acknowledgements

We'd like to thank the following organisations for their help promoting the survey and gathering responses:

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2 Foreword

The journey to rolling out "BIM" as business as usual across the UK's built environment sector has been a long one, which while projected to be largely achieved by 2020 has continued to be a long time coming.

Now, with a tumultuous 2020 behind us, we find ourselves still on that journey. So rather than trying to give another unrealistic target, the UK BIM Alliance (UKBIMA) wants to provide the industry a means to measure year on year uptake. This is in part our motivation for starting this annual survey. But it is also a means for us to discover and test the needs of the industry in enabling practical implementation, and to act on this.

We have found the findings insightful and challenging. It confirms that we have a lot still to do. There is no room for complacency. But rather than being demoralised, this gives us further impetus to continue our work. Whilst we have an amazing team of volunteers, we continue to welcome anyone who can help us in supporting our industry in moving forward on its digital transformation journey.

But let us remember why we are doing this. Information management for its own sake is not what incentivises us. Realising value not only for our industry, but also for the wider economy, for the environment and for society at large, most certainly is.

Dr Anne Kemp OBE
Chair of UK BIM Alliance

"

Whilst we have an amazing team of volunteers, we continue to welcome anyone who can help us in supporting our industry.

3 Survey results

3.1. Introduction

The UK BIM Alliance launched this annual survey to measure the understanding and adoption of information management using BIM across the UK built environment. Our hope is to give a reliable year-on-year indication of the progression to a 'business as usual' state for project delivery and asset management using the standards, tools and guidance provided within the UK BIM Framework.

Depending on role, discipline or even individual view, BIM may mean different things to people and there are also many varying definitions for BIM in the marketplace. Therefore, to help respondents we decided it was important to clarify what we mean by 'BIM' by using the definition within ISO 19650-1.

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Use of a shared digital representation of a built asset to facilitate design, construction and operation processes to form a reliable basis for decisions.

3.2. Methodology

The data collection and analysis was carried out by a research agency on behalf of the UK BIM Alliance and data was collected from January 4th, through to March 2nd, 2021.

Methodology used conformed to accepted marketing research methods, practices and procedures. Email invitations to participate in an online survey were sent to members of the research agency database. Participation was also encouraged through links promoted in social media and through email invitations by the Alliance and members of our Affiliate programme..

By March 2nd, 2021, we had received 1,170 responses (as well as 375 partially completed responses).

3.3. Survey response headlines

1,170 total respondents to the survey spanning over 25 organisational roles/functions

65% of respondents said their organisations are currently implementing BIM

Architecture, main contracting and clients/asset owners were the top three organisational roles/functions to respond

Difficulty of cultural/behavioural change is seen as the main barrier to implementing BIM

89% of respondents feel that BIM is significant to their role

3.4. Approach

To encourage a prompt response and increase the response rate overall, a live link to the survey was included in the email invitation to route respondents directly to the online survey.

- Members of our Affiliate programme were provided with a specific URL to promote the survey to their membership via newsletters, emails and social media, along with key strategic partners such as Centre for Digital Built Britain (CDBB) and British Standards Institution (BSI).

- The survey was promoted to all groups within the Alliance to share amongst their contacts, for example the UKBIMA Technology Group and the UKBIMA Communities group, and posts were made on our social media accounts to route respondents to the online survey.

- Each respondent was afforded the opportunity to enter a draw to win a £100 Amazon gift voucher.

4 Respondent base

The purpose of these questions was to understand the setting and experience of the respondents.

4.1. What size organisation do you work for?
and
Where in the UK & Ireland does your organisation operate?
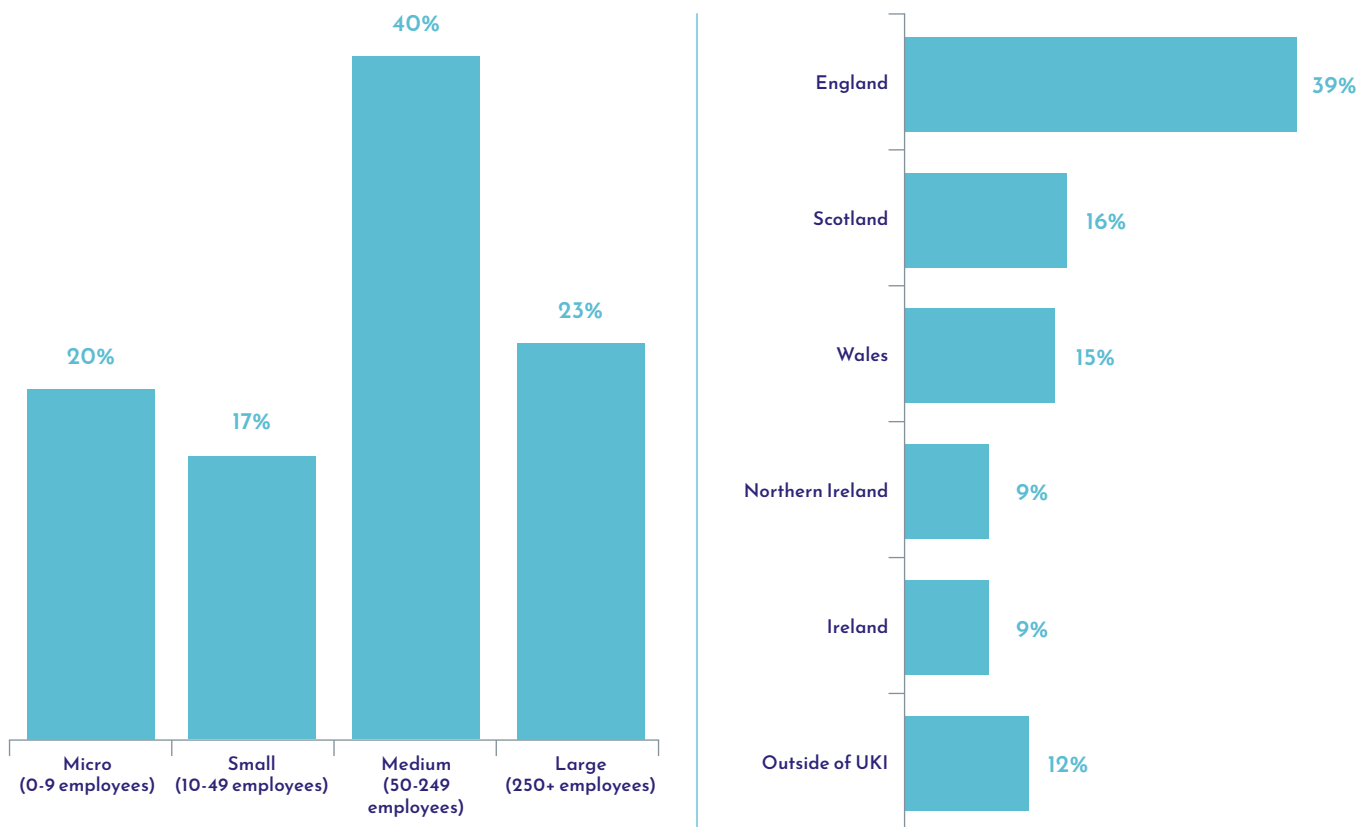
OBSERVATIONS

- While medium sized organisations represent the majority at 40% of the responses, it is encouraging to see good representation from micro, small and large organisations.

- In terms of geography, most responses were from England, but there was also good representation from across the other home nations. Interestingly, 21% of responses were from outside the UK – for a survey about the UK built environment.

- Further analysis will be undertaken to understand the proportional representation of each size of organisation across the built environment. This will be useful for future annual survey analysis to understand the differences in BIM adoption in organisations of varying sizes.

- Although over 400 responses from micro and small organisations have been submitted, there is clearly work to be done to engage a greater number, and we will investigate initiatives to help with this. The Alliance must ensure that the needs of micro and small organisations are catered for, as well as others, as they form a large percentage of the industry.

4.2. What is your organisation's primary project role/function?

Role	Responses
Architecture	165
Main contracting	143
Client or asset owner/operator	115
Sub-contracting	83
Civil engineering	79
Information management/BIM consulting	75
Structural engineering	61
Multi disciplinary consulting	53
Project management	45
Manufacturing	43
Cost consultanting	34
Combined building services engineering	31
Specialist designing	26
Landscape architecture	26
Topographical surveying	24
Facilities/asset management	23
Highways and transport engineering	20
Other	123

Other roles include (no. of responses):

Education & Educational organisation (21)

Developer & Building Services Consultant (12)

Demolition/dismantling (6)

Trade supplier (7)

Electrical engineering (10)

Building surveying (11)

Software vendor (11)

Town and country planning and building control (13)

Mechanical engineering (16)

Combined Building Services Engineering (9)

OBSERVATIONS

- It's especially encouraging to see a high proportion of clients/asset owners responding to the survey (just less than 10%), as one of the perceived barriers to BIM adoption (as discussed later in this report) is the lack of client demand for information management using BIM.

- It's also good to see BIM awareness reaching sub-contracting and manufacturing, as well as some trade suppliers taking part.

- The results indicate a real cross-sector representation of the UK built environment, which was the hope.

5 Main results

5.1. Is your organisation aware of and implementing BIM?

Aware and implementing **65%**

Aware but not yet implementing **30%**

Unaware **5%**
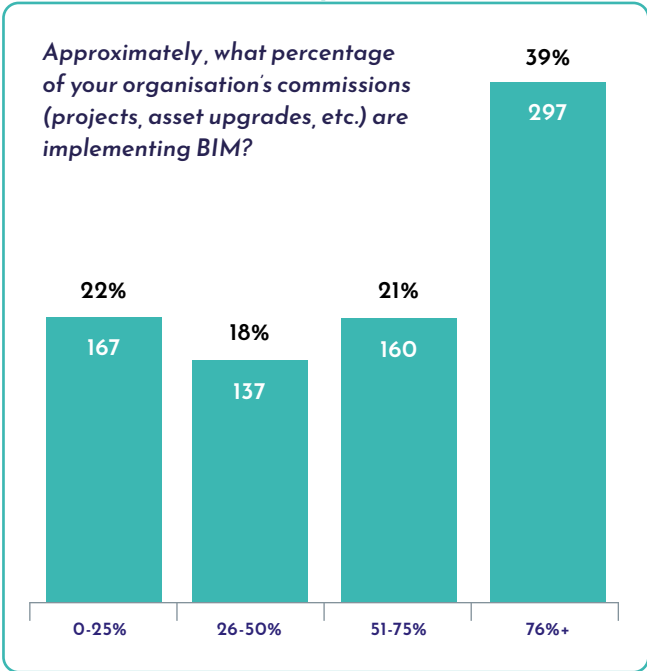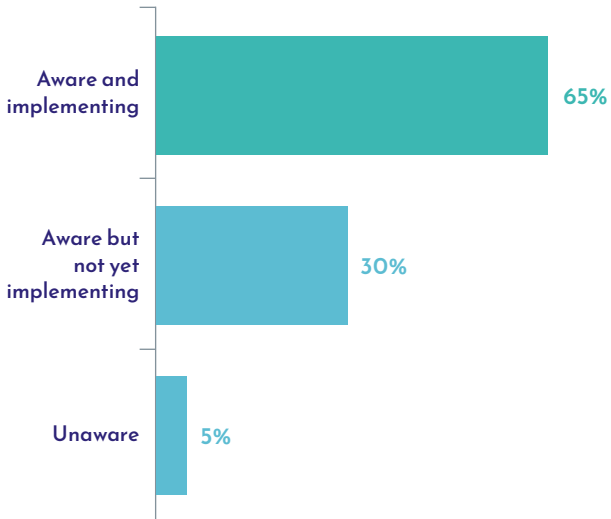
OBSERVATIONS

- Of the 65% who are aware of and implementing BIM, 60% of them state that over half of their organisation's projects/asset upgrades are implementing BIM. In real terms, this equates to over 450 companies that adopt BIM in more than half of their projects.

- We are pleasantly surprised but appropriately sceptical of the 290+ companies who implement BIM on more than three quarters of their projects!

Approximately, what percentage of your organisation's commissions (projects, asset upgrades, etc.) are implementing BIM?

0-25%	26-50%	51-75%	76%+
22%	18%	21%	39%
167	137	160	297

"

It is encouraging to see that the adoption of BIM within organisations continues to improve and that most respondents are recognising the opportunities that BIM can bring to their practices. It's of note that the migration from PAS 1192 to ISO 19650-1 is not yet fully complete which we expect to improve over the course of the next few years. Cultural change appears to be a perennial issue in the adoption of new technologies, but with 95% of respondents either aware of or implementing BIM within their practices it's clear that the industry is moving forward with the adoption of BIM in spite of the difficulties of the last year.

Ian Besford on behalf of IStructE BIM Panel

5.2. What is your organisation's primary project role/function
versus
Is your organisation aware of and implementing BIM?

Role/function	Aware and implementing	Aware but not yet implementing	Unaware
Architecture (165)	75%	24%	1%
Main contracting (143)	76%	22%	1%
Client or asset owner/operator (115)	58%	36%	6%
Sub-contracting (83)	39%	51%	11%
Civil engineering (79)	77%	22%	1%
Information management/BIM consulting (75)	88%	9%	3%
Structural engineering (61)	89%	10%	2%
Multi disciplinary consulting (53)	89%	9%	3%
Project management (45)	51%	42%	7%
Manufacturing (43)	63%	33%	5%
Cost consultanting (34)	41%	56%	3%
Combined building services engineering (31)	77%	23%	
Specialist designing (26)	65%	31%	4%
Landscape architecture (26)	50%	50%	
Topographical surveying (24)	33%	63%	4%
Facilities/asset management (23)	43%	43%	13%
Highways and transport engineering (20)	55%	30%	15%
Other (123)	42%	39%	20%

Legend:
- ■ Aware and implementing
- ■ Aware but not yet implementing
- ■ Unaware

> "
>
> This survey clearly demonstrates just how important a role BIM plays in our industry and the many benefits that it delivers. There is still a lot to do, especially around culture and increasing the uptake within smaller organisations, but this survey provides a positive picture to build upon.
>
> *Alison Nichol, Head of Constructing Excellence (CE)*

OBSERVATIONS

- This further analysis shows the highest implementation rates by role/function are within structural engineering and multidisciplinary consulting closely followed by information management / BIM consulting (which by the nature of their services, we would have expected to be higher).

- The greatest lack of awareness is from highways & transport engineering, facilities & asset management and sub-contracting. The latter two are particularly concerning, and we hope to address this with the work developing in our Affiliate programme and our Communities 'Back to BIM basics' campaign.

5.3. What size of organisation do you work for?
versus
Is your organisation aware of and implementing BIM?

	Aware and implementing	Aware but not yet implementing	Unaware
"Micro (0-9 employees) (238)"	36%	55%	8%
"Small (10-49 employees) (271)"	57%	36%	7%
"Medium (50-249 employees) (193)"	76%	21%	3%
"Large (250+ employees) (467)"	81%	17%	2%

- Aware and implementing
- Aware but not yet implementing
- Unaware
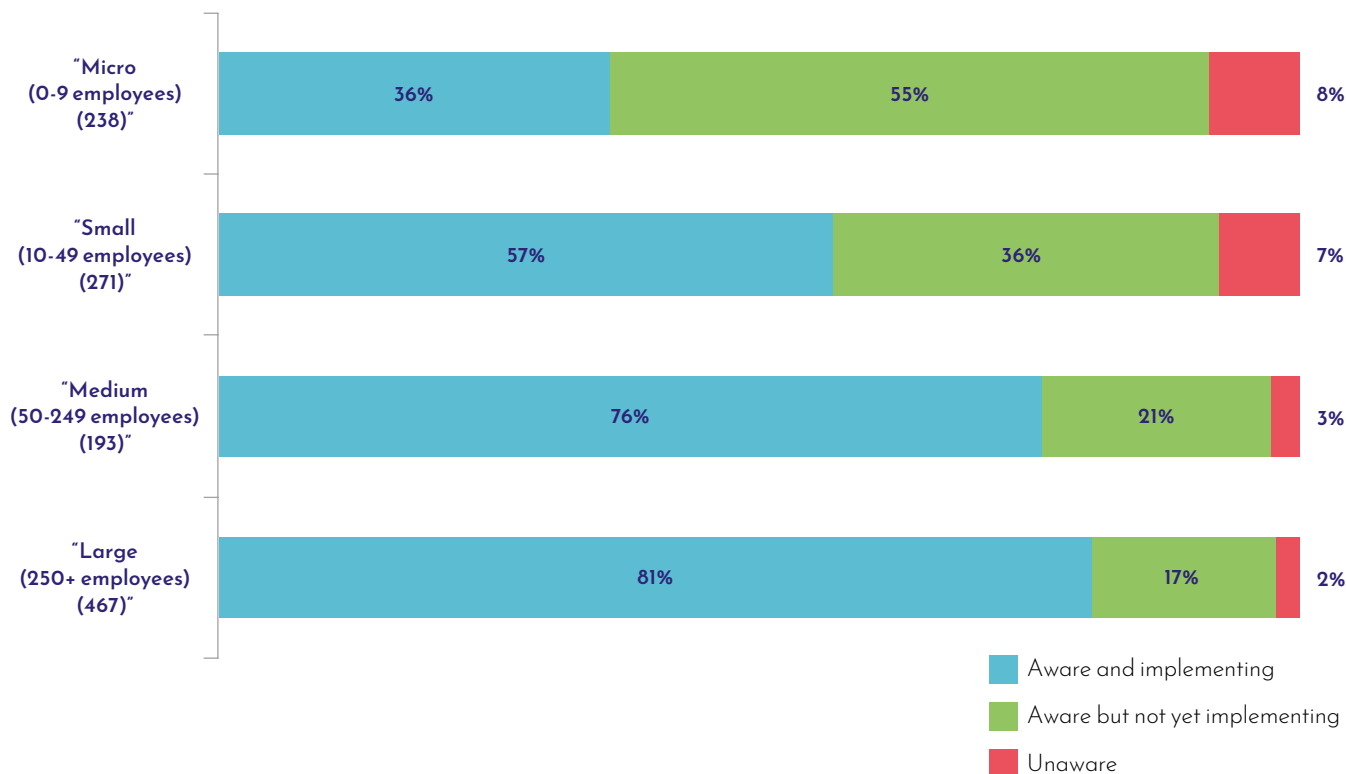
OBSERVATIONS

- This further analysis indicates that implementation levels are proportionally highest in large organisations (467), and lowest in micro-organisations (238).

- The (incorrect) perception could be that larger companies are more suited to information management using BIM and are able to more quickly adopt through greater financial and time investment opportunities. This perhaps demonstrates that the original perceived barriers to adoption persist.

- It could also suggest that information requirements are not being cascaded down the supply chain, which is where alignment to BS EN ISO 19650 could help promote best practice and increase BIM adoption.

"

CIAT is reassured to see the number of respondents to the UK BIM Alliance State of the Nation Survey which have been positive and clearly shows that BIM is now being adopted across the built environment. Also encouraging is the adoption of the new BS EN ISO 19650 suite of documents as the key standards in delivering BIM.

It is encouraging that the UK BIM Alliance is being seen as the de facto source in terms of information and guidance.

The adoption of BIM appears to be gaining traction from small businesses upwards. However, it does show that more effort is required to ensure micro businesses are not left behind and that this should be a key area to focus on. This is of significant importance as the majority of practices in the built environment is made up of SMEs.

We are also pleased to see that the adoption of BIM is being seen as a key driver in achieving Digital Twins.

The survey is an indicator on the positive approach being undertaken by all sectors of the built environment.

Francesca Berriman MBE Chief Executive, CIAT

5.4. Which (if any) information management/BIM standards does your organisation use and base internal processes around?

Standard	Count	Percentage
BS EN ISO 19650 series	421	30%
Company BIM policy/strategy that aligns to industry standards	406	29%
BS/PAS 1192 suite	356	25%
Internal standards that don't align to industry standards above	113	8%
BS 8536 Soft landings	111	8%
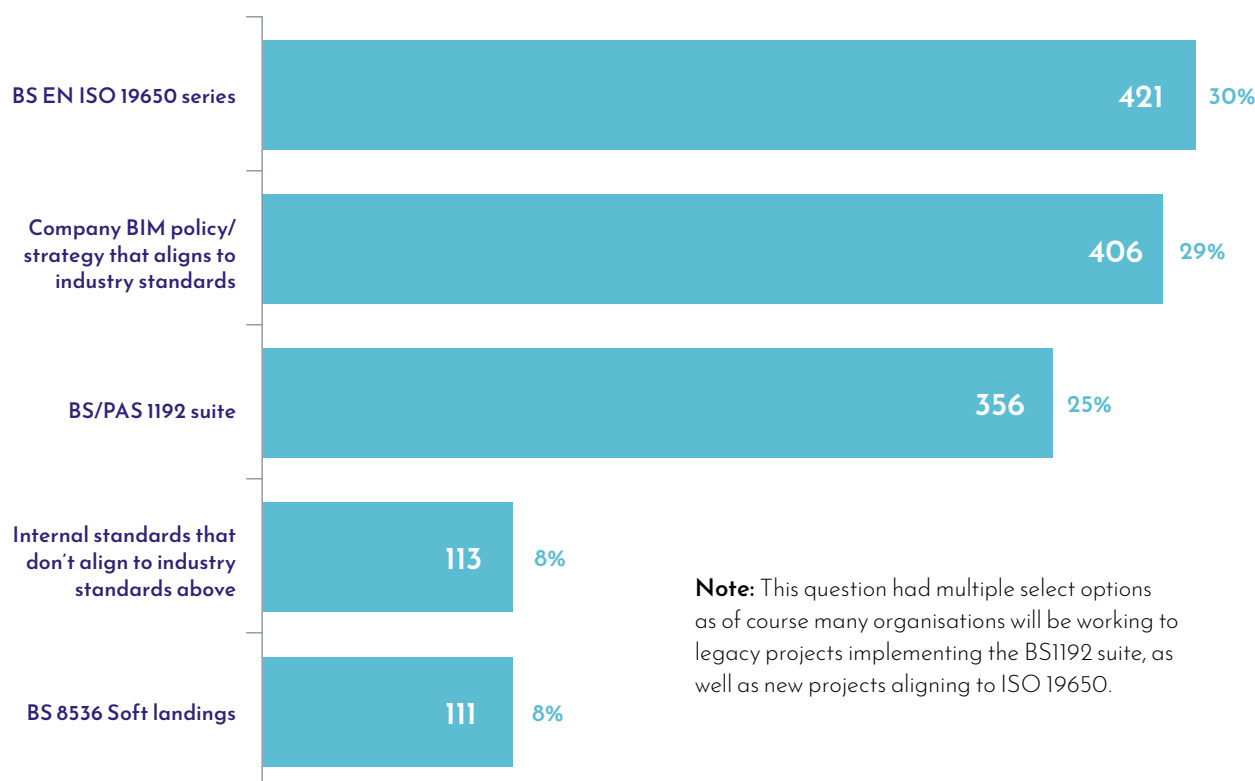
Note: This question had multiple select options as of course many organisations will be working to legacy projects implementing the BS1192 suite, as well as new projects aligning to ISO 19650.

OBSERVATIONS

- Despite the ISO 19650 series being relatively new, the results seem to show an encouraging uptake and therefore awareness of the UK BIM Framework.

- However, whilst the bar chart above may look convincing, when taken in the context of the wider survey, those using the BS EN ISO 19650 suite only represent 20% of all respondents.

- It's clear to see that more work is required to promote and support the implementation of BS 8536 Soft Landings. Work is currently underway to further develop and revise BS 8536 and a communications push to extol the benefits of it, will be beneficial.

- It's a little concerning, that of those who are already aware of and implementing BIM, there were 113 people (or 8%) identifying that they use internal organisational standards that don't align to the industry standards mentioned. It would be helpful to better understand the reasons for this and to recommend different adoption approaches in future surveys.

"

It is encouraging to see 77% of building engineering services firms aware of and adopting BIM, however, we can clearly see the further we go along the construction and asset lifecycle path, the weaker BIM adoption is. There is still important work to do helping sub-contractors with BIM adoption as this is standing at just 39% according to the survey. A significant area of concern is BIM adoption within facilities and asset management (43%), an area which arguable could reap the most benefit from data rich and accurate as-built models.

The recent data mapping completed by BESA and NBS between Uniclass 2015 and SFG20 will be an important step in helping to drive BIM adoption in asset management.

Steve Tompkins, Head of Development & Research BESA

5.5. If you wanted to find information and guidance regarding BIM, where would you go?

Source	Value
UK BIM Alliance	514
BSI	443
UK BIM Framework	394
buildingSMART	262
Centre for Digital Built Britain (CDBB)	254
Professional Institution / Trade Association	216
Building Research Establishment (BRE)	213
BIM Wiki	172
Software Vendor	142
Colleague	58
Consultant	20
NBS	20
Internet search	15
Scottish Futures Trust	6
Other	48
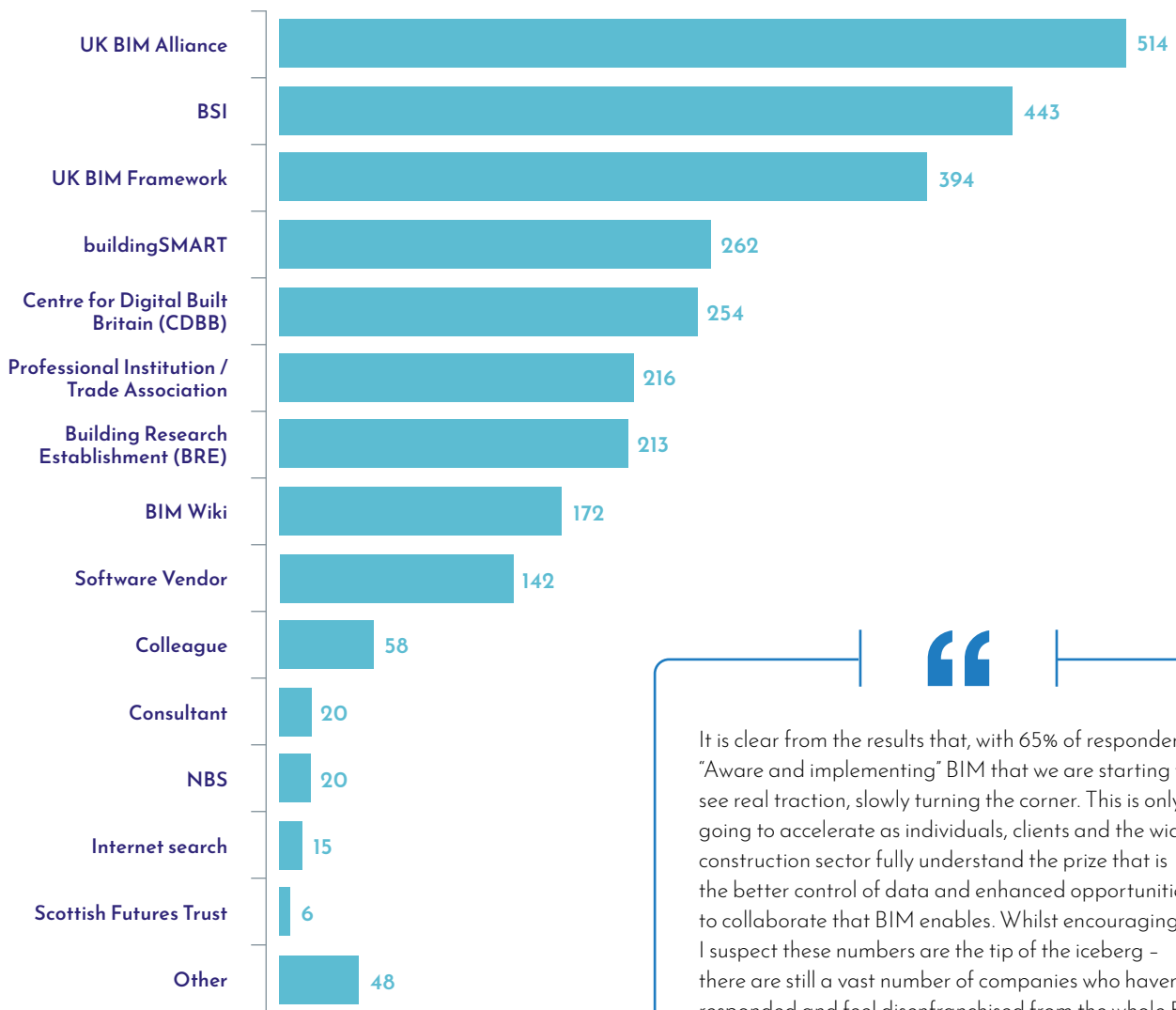
OBSERVATIONS

- A positive insight from these results shows that the generic 'internet search' is less favoured over the more formal, trusted sources available which provide up-to-date ratified information from a UK-specific perspective.

- We are obviously aware of the bias here (as it is a UK BIM Alliance survey), however it is encouraging to see the UK BIM Framework as a heavily referenced resource.

- We can see that 216 people and 142 people respectively selected 'professional institutions / trade associations' and 'software vendors' as a source of information and guidance. The Alliance is already working with a large number of these organisations via our Affiliates programme and Technology Group to help drive consistent information and guidance. If, however you'd like us to reach out to specific organisations in these categories, please do let us know.
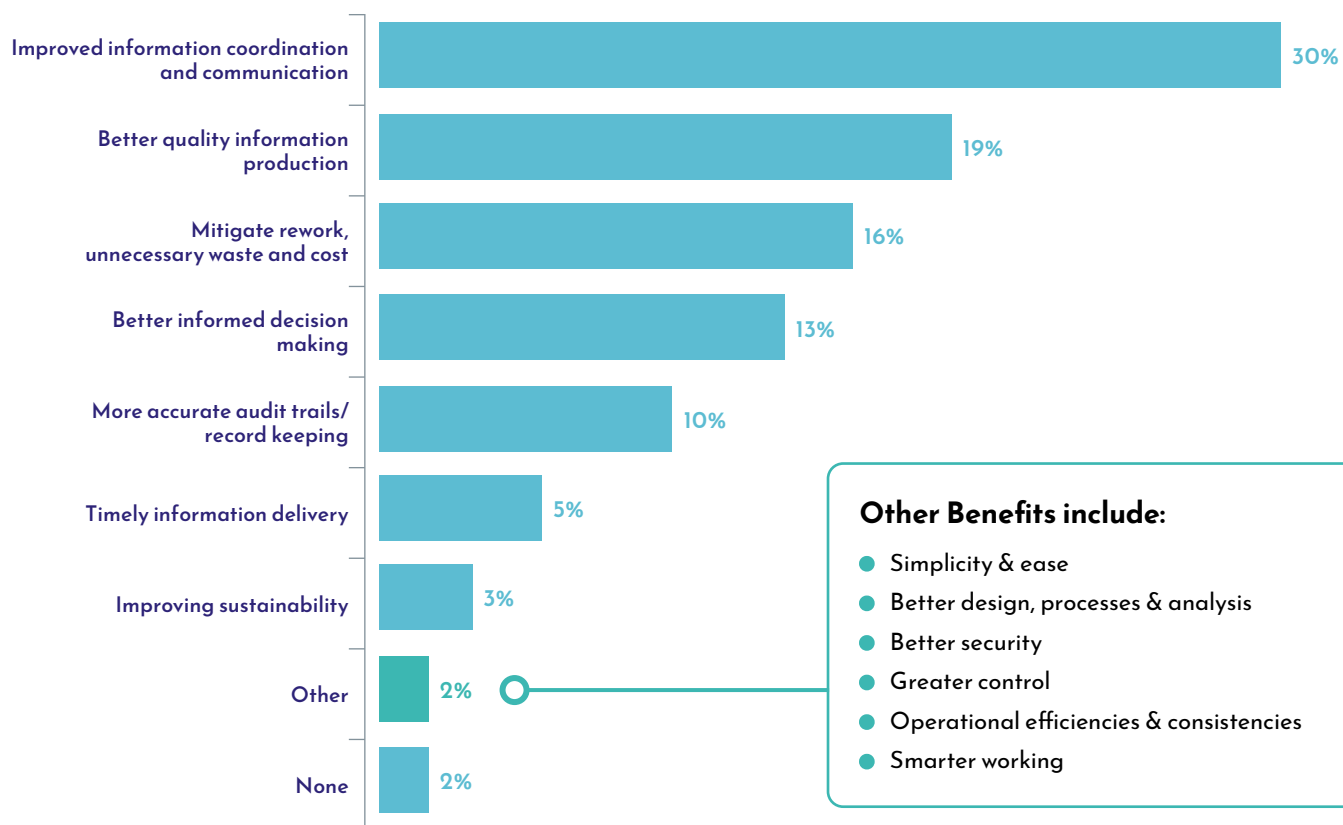
> It is clear from the results that, with 65% of respondents "Aware and implementing" BIM that we are starting to see real traction, slowly turning the corner. This is only going to accelerate as individuals, clients and the wider construction sector fully understand the prize that is the better control of data and enhanced opportunities to collaborate that BIM enables. Whilst encouraging, I suspect these numbers are the tip of the iceberg – there are still a vast number of companies who haven't responded and feel disenfranchised from the whole BIM conversation because we are simply not speaking their language. This is backed up the fact that "difficulty of cultural/behavioural change" is seen as the main barrier to implementing BIM.
>
> We need to move on a conversation for a supply chain that has been in a digital daze, confounded by complexity and demoralised by talk of disruption to one that is excited by the potential of the amazing new digital solutions that will help to improve quality, support productivity, reduce waste and ultimate transform our businesses and the wonderful, wider supply chain that is construction.
>
> This for me is where the UK BIM Alliance is starting to come into its own – it isn't just a broadcast community, there is a clear listening brief and a network of people dedicated to cutting through the jargon and helping even the very smallest of businesses understand how they need to operate in a BIM environment and gear up to getting themselves BIM enabled.
>
> *Iain McIlwee, CEO, Finishes and Interiors Sector (FIS)*

5.6. What are the main potential benefits of implementing BIM in your opinion?

Benefit	Percentage
Improved information coordination and communication	30%
Better quality information production	19%
Mitigate rework, unnecessary waste and cost	16%
Better informed decision making	13%
More accurate audit trails/ record keeping	10%
Timely information delivery	5%
Improving sustainability	3%
Other	2%
None	2%

Other Benefits include:

- Simplicity & ease
- Better design, processes & analysis
- Better security
- Greater control
- Operational efficiencies & consistencies
- Smarter working

Note: For this question we created a multi select answer by identifying the main benefits from implementing BIM as we understand them. Respondents were permitted to select three answers, as well as provide a free text answer via the 'other' field.

Some additional benefits provided in the 'other' field:

"Accurate and maintainable asset handover data for the infrastructure or building life"

"Transparency"

"Better security of information"

"Working smarter, rather than working harder"
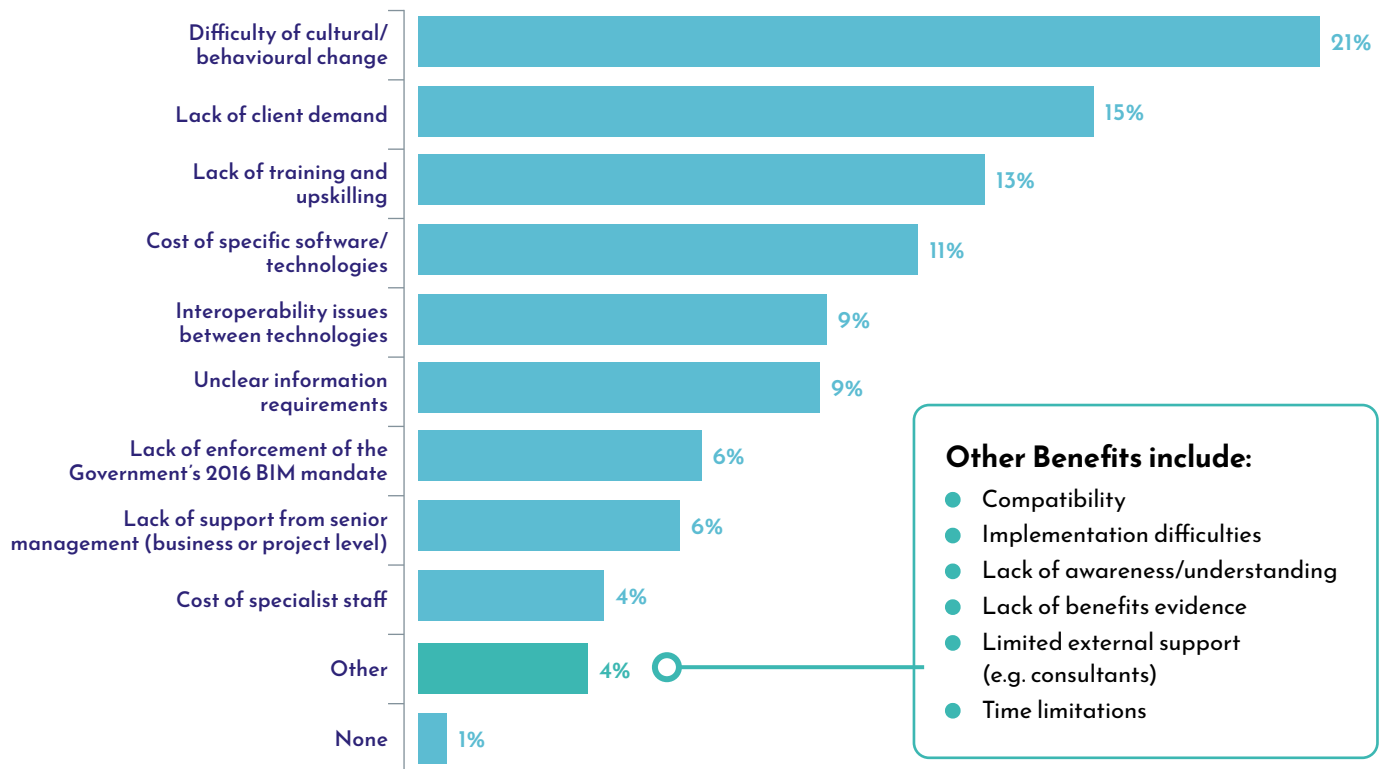
"Teamwork and systems thinking"

OBSERVATIONS

- There are no stand-out surprises from the results, and it perhaps reaffirms that the benefits of BIM and the wider opportunities for digitalisation are achievable as well as having longevity.

- 2% felt there were no benefits from implementing BIM, which although very low, is still disappointing to see. We are certain that this is due to a lack of awareness and/or education and hope that our 'Back to BIM Basics' campaign along with the UK BIM Framework guidance being produced, will help those who are currently of the opinion that BIM offers them no benefits.

"

As the survey shows, the sub-contracting trades and smaller companies are less advanced in adopting BIM. Support from their trade suppliers, including our members, with whom they have close relationships, will be beneficial to both categories as the level of adoption grows. While there were comparatively few responses direct from trade suppliers, we consider it vital that wholesalers and distributors are aware of BIM and understand their involvement in the digitalisation of the construction sectors.

Richard Appleton General Manager, EDA Data Services

5.7. What are the main barriers to implementing BIM in your opinion?

Barrier	%
Difficulty of cultural/behavioural change	21%
Lack of client demand	15%
Lack of training and upskilling	13%
Cost of specific software/technologies	11%
Interoperability issues between technologies	9%
Unclear information requirements	9%
Lack of enforcement of the Government's 2016 BIM mandate	6%
Lack of support from senior management (business or project level)	6%
Cost of specialist staff	4%
Other	4%
None	1%

Other Benefits include:

- Compatibility
- Implementation difficulties
- Lack of awareness/understanding
- Lack of benefits evidence
- Limited external support (e.g. consultants)
- Time limitations

Note: For this question we created a multi select answer by identifying the main barriers to implementing BIM as we understand them. Respondents were permitted to select three answers, as well as provide a free text answer via the 'other' field.

Some responses entered in the 'other' field:

"Calling it BIM, mystifies the process"

"Contractor and supplier behaviour"

"Cost of ISO 19650 for SME's"

"Industry members believe it is a designers 'thing'"

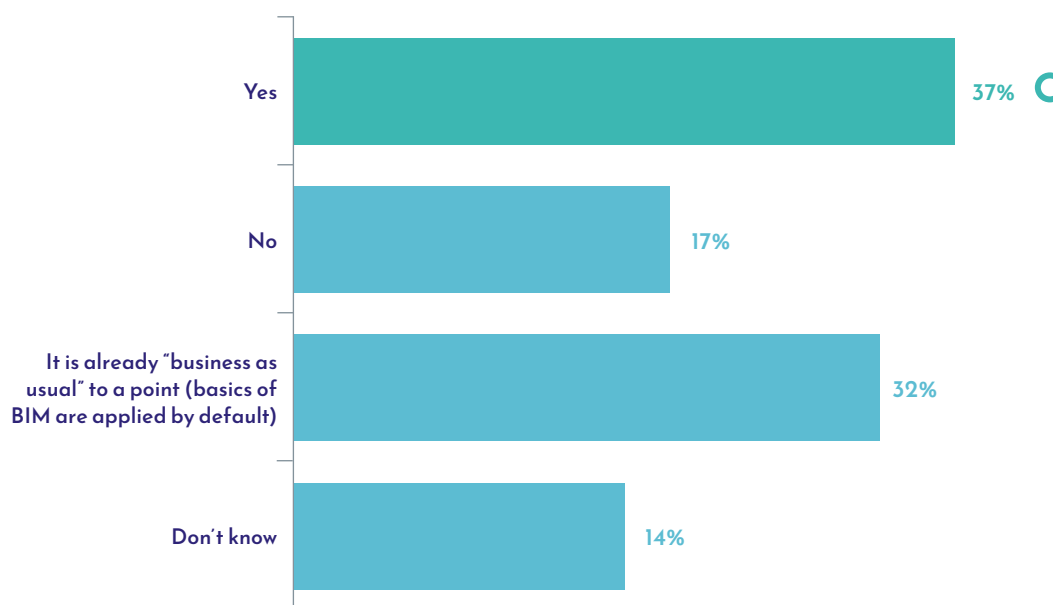"Difficulty implementing on existing building stock"

"Lack of investment commitment"

OBSERVATIONS

- Again, there are no surprises in the responses here, with the original/traditional barriers of cost, skills and client demand being the most popular identified. These are often 'perceived' barriers and are not formed of current thinking.

- With the cultural/behavioural change barrier sighted as the main barrier, perhaps this signposts the need for the Alliance to focus even more on industry advice to manage and overcome the cultural challenges. With this in mind, the Alliance's collective effort is in supporting and leading the cultural change required by making BIM relevant to all in the built environment. This is of course a huge task, and we can't do it alone; we need your help and support!

- In terms of the overall concept, the responses seem to suggest that industry is still, in part, of the impression that 3D models and expensive software is required to play a part in a BIM process.

- The Alliance are always seeking more effective ways to communicate the correct understanding of Better information Management, in order that it appeals to all parties involved in the industry. We will investigate different communication methods as a matter of urgency.

- When it comes to project delivery detail, the guidance and tools we have published and continue to develop, goes a long way towards demystifying the process, as well as aiming to move the conversation away from '3D models' and towards the benefits for ALL through better information management.

5.8. Do you think BIM will become 'business as usual' for the way your organisation works?
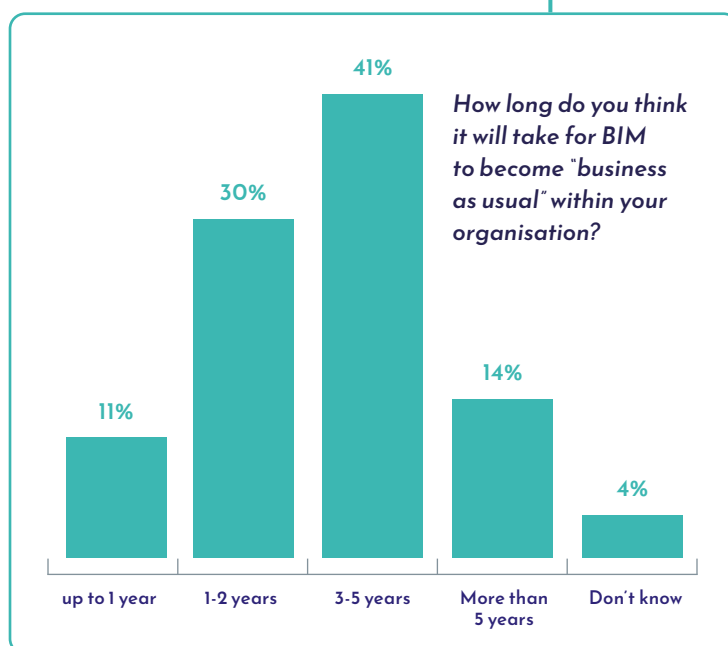
This question aims to provide insight into respondent's own organisation and their knowledge of how they currently operate on a daily basis.

Yes — 37%

No — 17%

It is already "business as usual" to a point (basics of BIM are applied by default) — 32%

Don't know — 14%

Note: For this question we deliberately didn't define what 'business is usual' is, to let people make up their own minds

OBSERVATIONS

- Of those who answered 'yes' to BIM becoming business as usual for the way their organisation works, the majority believe it will take another 3-5 years.

- The majority of respondents (almost 70%) view BIM favourably and see it becoming business as usual at some point in the future.

- It's encouraging to see that one third of respondents see BIM as already being 'business as usual' in their organisations.

How long do you think it will take for BIM to become "business as usual" within your organisation?

up to 1 year — 11%
1-2 years — 30%
3-5 years — 41%
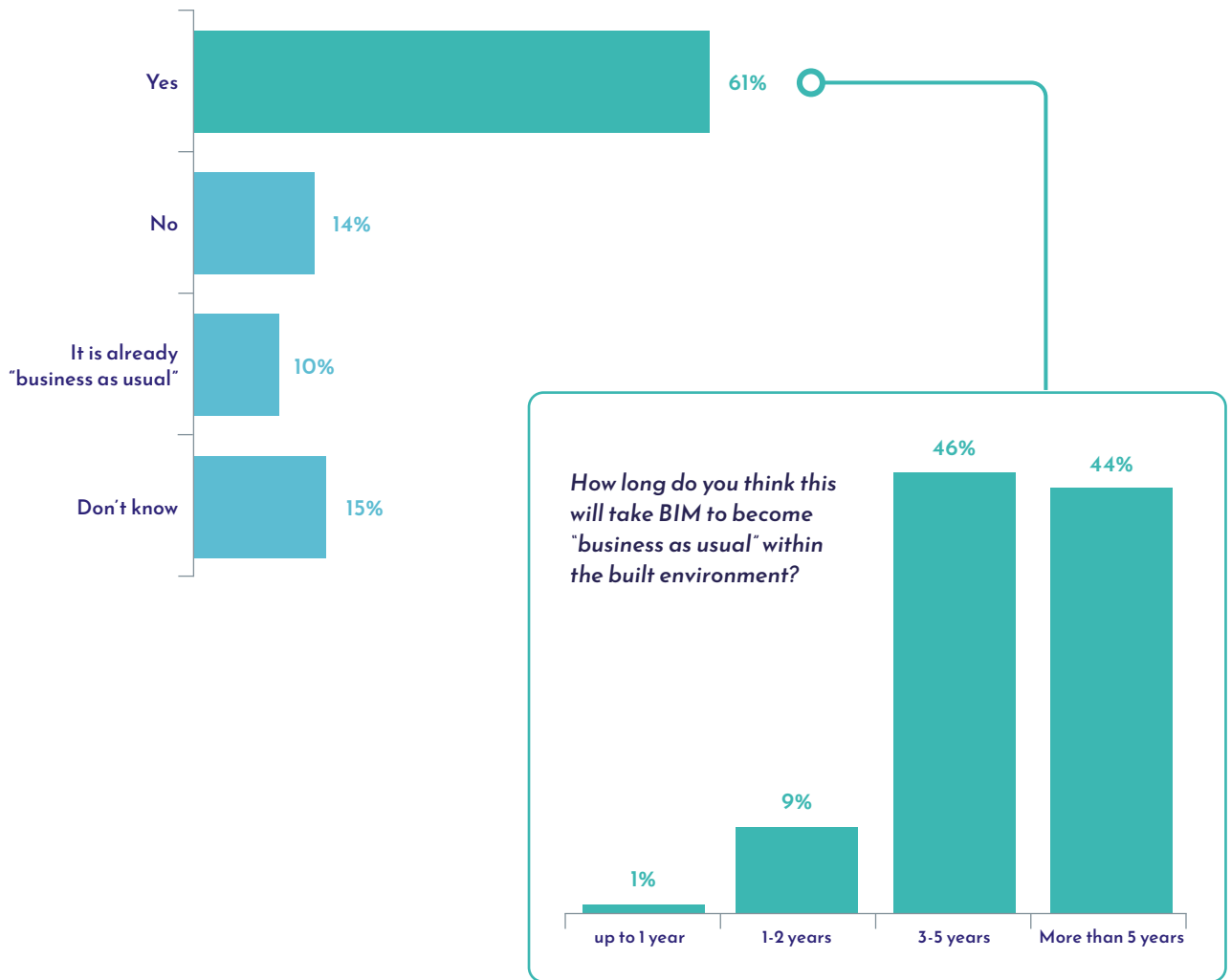More than 5 years — 14%
Don't know — 4%

"

From a building services perspective, CIBSE have been pushing BIM for well over a decade now, so we find it a little surprising that there are still some MEP organisations out there who have not even heard of BIM. The results for building services organisations are slightly hidden by the differing ways in which our engineers describe what they do; building services, MEP, mechanical, electrical, public health, etc. When combining some of these descriptions from the report findings, it is encouraging that we are very close to structural engineering in percentage uptake.

Thanks to the UK BIM Alliance work, the proportion of companies that are using BIM regularly or by default is continuing to increase. This can only be a good thing as most companies do see benefits from using BIM processes pretty quickly and making our profession sharper and leaner is one of the founding tenets of digital engineering and BIM generally. We look forward to continuing to work with the UK BIM Alliance in making BIM business as usual for all.

Carl Collins, Head of Digital Engineering CIBSE

5.9. Do you think BIM will become business as usual for the way we work in the built environment?

Similar to the previous question but this looks to understand respondent's opinions on BIM adoption generally within industry and how it might accelerate.

Yes — 61%

No — 14%

It is already "business as usual" — 10%

Don't know — 15%

How long do you think this will take BIM to become "business as usual" within the built environment?

up to 1 year — 1%

1-2 years — 9%

3-5 years — 46%

More than 5 years — 44%

OBSERVATIONS

- Positively, the majority think BIM will become 'business as usual' for the way we work as an industry, but again most feel this will take between 3 – 5 years, with an almost equivalent number also seeing it taking more than 5 years.

- We're encouraged by the 10% who see BIM as already 'business as usual' in industry but the UK BIM Alliance have seen no evidence of this. This is evident in the results of this survey.

- The UK BIM Alliance's original target was to help industry reach business as usual by 2020, however it became clear that this was an enormous task and ultimately, unachievable. We are more realistic about where we are now and there is still plenty to do!

"

Information Management using BIM is a transformative force in the UK Built Environment. The more of us that do it, the more we all benefit from embedded collaboration, efficiency and transparency, making our sector a better place for people to build their careers and flourish. We have reached a tipping point for change, and those of us who are experienced in implementing Information Management using BIM have a responsibility to support our colleagues and collaborators who have less experience. The work of the UK BIM Alliance has been central to that effort and this survey shows it is getting results!

Henry Fenby-Taylor, Head of Information Management Centre for Digital Built Britain (CDBB)

5.10. Is BIM becoming 'business as usual' critical to building the foundations for Digital Twins?

Industry is deep in discussion about digital twins, what they offer, how they can be procured and all of the common themes when discussing digital transformation.

The intention of this question was to gauge the audience's understanding of how BIM and digital twins relate.

The Alliance have published a Digital Twin positioning paper which can be accessed here https://www.ukbimalliance.org/the-uk-bim-alliance-issue-a-bim-and-digital-twins-positioning-statement/.
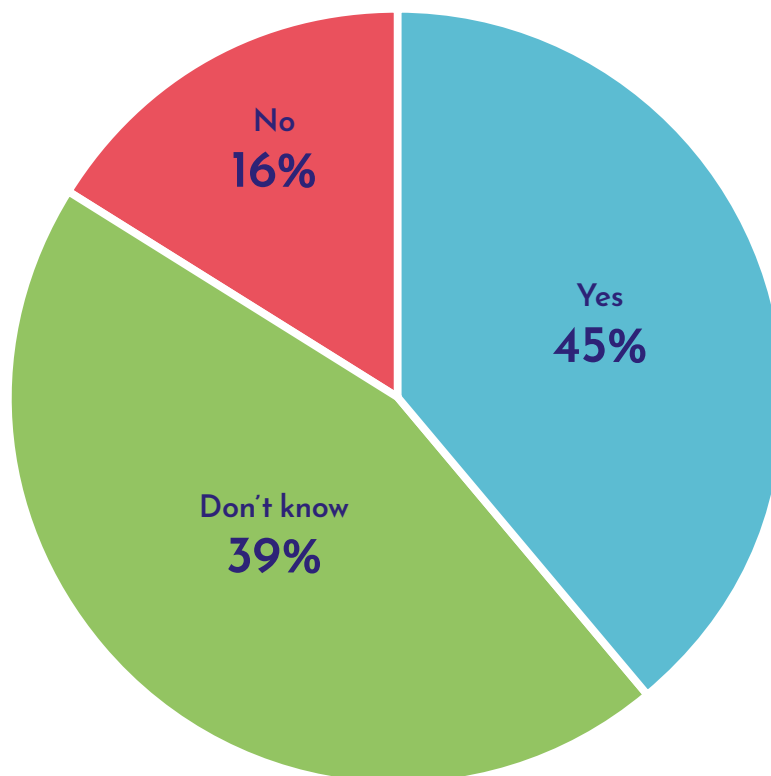

OBSERVATIONS

- It's reassuring to see that the majority feel that BIM becoming business as usual is critical to facilitating digital twins, but it is alarming that 39% don't know and 16% think it isn't.

- It is important that we strengthen the link between BIM and digital twins, as the success of both is dependent on information management. The UK BIM Framework is the critical foundation to what is being envisaged as the National Digital Twin.

"

Many thanks to colleagues from the Nuclear industry who responded,... This shows the holistic positiveness of how BIM, Digital and the ISO 19650 standards are being integrated throughout project ownership. Early Client input to project initiation which develops the Scope and positively includes all technical disciplines. The Nuclear Institute Digital Community Special Interest Group as a key Affiliate with UK BIM Alliance will build on this and take positive note of the key thoughts shared by other affiliates.

Philip Isgar, Associate at Nuclear Institute

5.11. How relevant do you feel BIM is to your role?
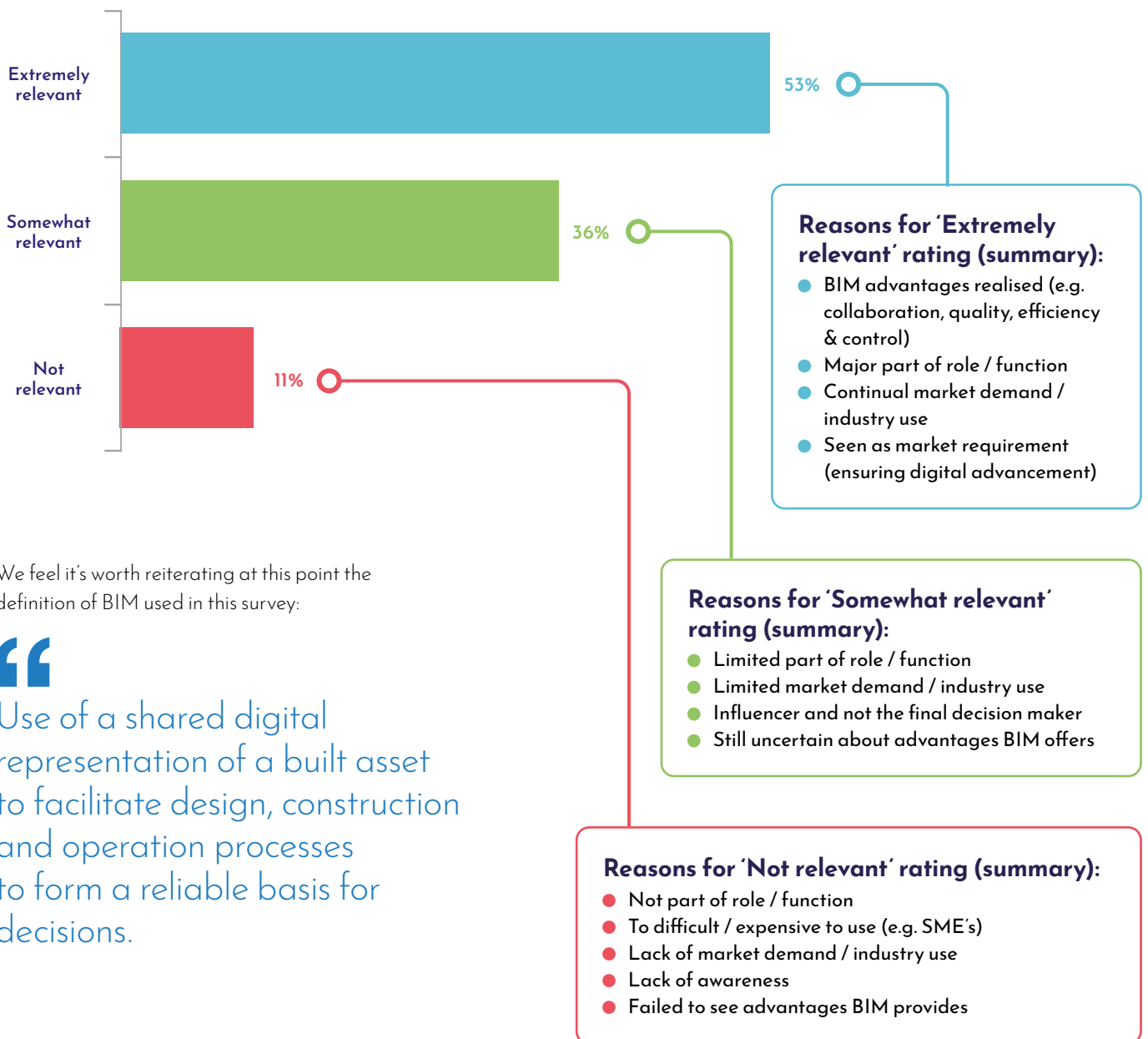
We feel it's worth reiterating at this point the definition of BIM used in this survey:

> **"**
> Use of a shared digital representation of a built asset to facilitate design, construction and operation processes to form a reliable basis for decisions.

Reasons for 'Extremely relevant' rating (summary):
- BIM advantages realised (e.g. collaboration, quality, efficiency & control)
- Major part of role / function
- Continual market demand / industry use
- Seen as market requirement (ensuring digital advancement)

Reasons for 'Somewhat relevant' rating (summary):
- Limited part of role / function
- Limited market demand / industry use
- Influencer and not the final decision maker
- Still uncertain about advantages BIM offers

Reasons for 'Not relevant' rating (summary):
- Not part of role / function
- To difficult / expensive to use (e.g. SME's)
- Lack of market demand / industry use
- Lack of awareness
- Failed to see advantages BIM provides

OBSERVATIONS

- It is encouraging to see that 89% of respondents feel that BIM has some relevance to their roles, but interesting that 11% feel it isn't relevant.

- As the UK Government Construction Playbook effectively mandates the UK BIM Framework for public works projects and programmes, we should see understanding and relevance rise in the coming years.

- Noting that circa 3 million people work in the UK construction industry and related built environment services but not for public projects, it would be interesting to segregate the responses in future surveys.

- Comments provided in the responses give some idea of the perception of BIM and its relevance to various roles, this is explored in greater detail in the next question comparison. However, some more extreme examples have been extracted below, with Alliance responses provided to help with awareness and clarity.

"As a commercial manager of construction projects, I don't deal with BIM, it's primarily a design function tool. I only get involved in the change to design models after agreement of contract conditions"

UK BIM Alliance Clarification

BIM encompasses all information produced and exchanged across project teams within an information management process. As a commercial manager, ensuring the required resources are included within appointments and contracts is critical.

"As a developer we are not required to use BIM by our clients and are happy to use AutoCAD to produce drawing information"

UK BIM Alliance Clarification

As a developer you stand to gain significant benefits from the creation and management of digital information that integrates across all of your systems. We actively encourage individuals and organisations to consider the internal benefits of BIM implementation before being asked to work within the process by your clients. Internal benefits could include improved standardisation, efficiency gains and improved record keeping/regulatory compliance to name a few. AutoCAD can still be used to produce 2D drawings and work within a common data environment following the BIM process – you will however find that BIM authoring tools that generate 3D models may also generate 2D documentation much more quickly, with fewer staff and with increased coordination.

"BIM is just the latest cliché item"

UK BIM Alliance Clarification

BIM is not going away and is fundamental to build the foundations to support the future state National Digital Twin programme. The UK Government Construction Playbook mandates use of the UK BIM Framework for public projects. With this in mind, the private sector tend to adopt much more quickly and current industry feedback supports this.

"I found the old way more productive"

UK BIM Alliance Clarification

Whilst persistence is key to adopting and benefitting from any new way of working, the BIM process is designed to reduce wasted work, wasted time and wasted money, not only within your organisation but across the industry. If organisations are finding traditional ways of working more productive, please speak with us to identify your challenges!

"I do not operate BIM because my practice is too small to benefit"

UK BIM Alliance Clarification

This is a common misconception; the benefits are proportional and relevant to all sizes of organisation. Often, small companies have the most to gain and can realise the benefits sooner by being agile, able to change faster and become more competitive for winning work.

"House building/Drylining, BIM is not required"

UK BIM Alliance Clarification

The residential sector is very much accelerating their BIM implementation, some of the ongoing initiatives in this space helping to support this charge are BIM4Housing and BIM4 Housing Associations. Creating and managing the information produced on a residential building is of utmost importance, especially when considered in the context of the Hackett Report and the resulting Building Safety Bill (currently available in draft).

5.12. What is your organisation's primary project role/function?
versus
How relevant do you feel BIM is to your role?

This question comparison provides insight into the roles/functions being undertaken and to what extent the respondents consider BIM relevant to their role.

Role/function	Aware and implementing	Aware but not yet implementing	Unaware
Architecture (162)	60%	32%	8%
Main contracting (137)	64%	31%	6%
Client or asset owner/operator (110)	46%	45%	9%
Sub-contracting (69)	29%	39%	32%
Civil engineering (76)	54%	41%	5%
Information management/BIM consulting (75)	81%	19%	
Structural engineering (59)	54%	41%	5%
Multi disciplinary consulting (53)	72%	21%	8%
Project management (43)	44%	49%	7%
Manufacturing (40)	43%	45%	13%
Cost consultanting (32)	41%	38%	22%
Combined building services engineering (31)	65%	26%	10%
Specialist designing (24)	71%	25%	4%
Landscape architecture (24)	17%	58%	25%
Topographical surveying (22)	18%	55%	27%
Facilities/asset management (20)	45%	45%	10%
Highways and transport engineering (17)	59%	35%	6%
Other (102)	45%	34%	20%

- Aware and implementing
- Aware but not yet implementing
- Unaware

OBSERVATIONS

- Unsurprisingly 'Information Management/BIM consulting is the highest organisational role/function to feel that BIM is extremely relevant. However, main contracting, multi-discipline consulting and specialist design are not far behind.

- One concerning insight is that sub-contracting is the highest to suggest BIM is not relevant, there is work to be done here in understanding what these services/trades are and how we might help them appreciate the relevance.

"

Ensuring information management using BIM becomes business as usual is vitally important to the UK Built Environment enabling better decisions on our built infrastructure. The UK BIM Alliance Annual Survey 2021 provides us with a vital pulse check on our collective progression towards adoption of this security minded information management approach. It is extremely positive to see how relevant and significant BIM is becoming to our job roles. Furthermore, it is encouraging to see high levels of adoption of the ISO 19650 series so early on since its publication. The report is also a timely reminder that there is still a long way to go to make information management the norm across the breadth of industry. I believe that the UK BIM Framework will help ensure that we continue to see continued BIM uptake at scale and help us continue to advance the UK digital journey.

David Philp, Head of Digital Impact Construction Innovation Hub (CIH)

6 UK BIM Framework Overview

The UK BIM Framework comprises the core standards and supporting guidance needed to enable the digital transformation of the UK's built environment. The standards include the BS EN ISO 19650 series of standards, which focus on *information management using building information modelling* for the delivery and operational phases of an asset with BS EN ISO 19650-5 setting out requirements for a *security minded approach to information management*. The UK BIM Framework also includes BS 1192-4:2014 – the code of practice for *information exchange using COBie* and PAS 1192-6:2018 covering *health and safety and building information modelling*. The BS 8536 series, which provides the code of practice for facilities management falls under the umbrella of the UK BIM Framework as well; we're perhaps more familiar with BS 8536-1 and BS 8536-2 as setting the 'standards for soft landings'.

These standards provide recommendations and requirements for **what needs to be done by whom** to fulfil each publication's focus or purpose. But they are technical in nature, and in the case of the ISO 19650 series, written for an international audience rather than a UK specific one. Guidance is helpful, therefore, to provide insight into unfamiliar terms and to consider the detail and practicalities of **how** to work in accordance with the standards and achieve the digital transformation we are seeking.

The development of the supporting guidance is a collaborative project that brings together industry experts who have and continue to share their understanding and experience of working in accordance with the ISO 19650 series. Since its first release in 2019 it has evolved to offer guidance about the requirements of ISO 19650 parts 1, 2 and 3 (such as who needs to what, when and why) and it explores themes that cut across the standards (for example the purpose and contents of different types of information requirements).

The guidance will continue to evolve in both its presentation and content as experience expands and an update to the guidance is planned for early autumn 2021. It will also be revisited as and when the standards are revised.

The UK BIM Framework also contains an information protocol template that supports the implementation of ISO 19650-2 (the delivery phase). It is appointment agnostic and can be used equally with all available standard forms as well as bespoke appointments and alliancing, partnering and other multi-party appointments. An information protocol to support ISO 19650-3 (the operational phase) is in development.

The UK BIM Framework is steered and maintained by the BSI, the CDBB and the UK BIM Alliance. This partnership has a clear vision for the UK BIM Framework and is committed to ensuring that it supports organisations, large or small operating across the entirety of the built environment to work digitally and to optimise the use of information. This is fundamental if we are to improve productivity and become sustainable, efficient and technologically advanced. No matter what part you play in the life of an asset, whether this is in briefing, design, construction, operation or decommissioning, the UK BIM Framework is relevant to you.

> Please visit www.ukbimframework.org to see the standards and access the free to use guidance, the information protocol template and other helpful resources.

> **"**
>
> While British Standards may be the keystone, they work alongside further guidance and tools to provide the built environment with the support it needs to realise good information management. Working in tandem, these resources constitute current thinking, collectively known as the UK BIM Framework. This is why BSI is both a supporter and a contributor to these guidance documents and tools, as they provide real value as catalysts for the implementation of information management as specified within the ISO 19650 series of standards.
>
> *Dan Rossiter, Sector Lead BSI*

> **"**
>
> As an author and contributor to both the original UK standards and the new ISO standards, I am conscious that the language and structure of ISO standards can present challenges. This is where guidance has such an important role to play, and for this reason there has been a concerted effort to produce a wide range of guidance to support the ISO 19650 series. This has involved a large group of industry practitioners volunteering to help the whole built-environment sector.
>
> I am delighted to have been able to be part of this national effort, firstly to get our UK ideas accepted on the international stage, and secondly to help provide guidance to support those in the UK who are putting the standards into practice.
>
> *David Churcher, Co-Editor BS EN ISO 19650 Guidance and Director Hitherwood Consulting*

7 Final thoughts

A number of recent industry initiatives such as the UK Government Construction Playbook, the Golden Thread Initiative/Building Safety legislation and the National Digital Twin are adding further weight to the existing BIM mandate of 2016, with the UK BIM Framework being a core component/enabler to all of these. With that being said, we are not complacent, and the survey is helpful for us to identify and mobilise activities to further support where required. We will run the same survey year on year and aim to expand the number of responses considerably through the outreach provided by our affiliates, supporters and other industry partners, to identify trends and address any shortfalls.

7.1. Ongoing UK BIM Alliance projects/initiatives

The current activities the UK BIM Alliance is either project managing or supporting are as follows. These should help to address some of the survey findings as identified in this report

UK BIM Framework guidance – ongoing development providing a freely accessible resource for best practice implementation of the BS EN ISO 19650 series

Golden Thread Initiative – MHCLG & L&Q collaboration with industry develop the requirements and process for building safety information and prototype a standardised digital golden thread.

4D Modelling Planning & Guidance: How to Specify & Deliver 4D enabled projects – comprehensive guidance document for organisations, projects, and individuals planning to specify and deliver 4D modelling. The guidance will include detailed recommended practice, process maps and workflows, technologies available and integrations, and how individuals and teams can gain benefits from 4D modelling and planning.

BIM Roles & Responsibilities (Women in BIM Project) – A user guide to BIM roles and responsibilities within organisations intended to help employees have a consistent understanding of the scope of a specific job role in the BIM job family; as well as UK BIM Alliance members (and other job hunters) with deciphering job descriptions and negotiating the correct titles and salaries.

Infra AIR – Proposal to develop a common approach to the specification of asset information requirements for infrastructure

BIM4Housing Associations – Development of a set of template and exemplar documents which BIM for Housing Associations (BIM4HAs) have produced which is designed to assist a housing association to begin its journey implementing BIM using the UK BIM Framework

8 Reference links

Below are links to references as mentioned in this report:

- UK BIM Alliance – https://www.ukbimalliance.org/
- UKBIMA Technology Group – https://www.ukbimalliance.org/tech-group/
- UKBIMA Communities – https://www.ukbimalliance.org/communities/
- UKBIMA Affiliates – https://www.ukbimalliance.org/affiliates/
- BIM4Housing – https://bim4housing.com/
- BIM4Housing Associations – https://www.ukbimalliance.org/bim4-housing-associations-project/
- UK BIM Framework – https://www.ukbimframework.org/
- Centre for Digital Built Britain (CDBB) – https://www.cdbb.cam.ac.uk/
- British Standards Institution (BSI) – https://www.bsigroup.com/en-GB/
- National Digital Twin Programme (NDTp) – https://www.cdbb.cam.ac.uk/what-we-do/national-digital-twin-programme
- UK Government Construction Playbook – https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/941536/The_Construction_Playbook.pdf