

BIMireland

DIGITAL DESIGN | CONSTRUCTION | OPERATION

The first national survey to benchmark the level of Building Information Modelling (BIM) adoption in Ireland revealed that 67% of the industry sample possessed confidence in their skills and knowledge to deliver BIM. While only 6% reported no confidence the remaining 27% reported a general knowledge of BIM and a gradual improvement in BIM skills.

75% of the sample reported an increase in demand for BIM in Ireland.

The authors sought to report on the extent to which the digital transition of Ireland's construction sector is underway. A survey questionnaire was selected to allow for the collection of both quantitative and qualitative data. Industry leaders from private sector organisations operating in the construction sector were nominated to complete the first national survey to benchmark the level of BIM adoption in Ireland today.

A sample size of the 100 most influential leaders in Architecture, Engineering and Contracting were selected with the co-operation of the Association of Consulting Engineers of Ireland (ACEI), Construction Industry Federation (CIF), Society of Chartered Surveyors in Ireland (SCSI), Engineers Ireland and the Royal Institute of Architects in Ireland (RIAI).

The questionnaire was modelled on the NBS BIM Survey to allow for comparative analysis at a later date but was shortened to facilitate ease of completion. A response rate of 68% was achieved which was significant. Table 1 opposite confirms the spread of the responses from different disciplines, which shows good spread of representation.

Organisation Type	Nr
Architecture	10
Engineering Consultancy	21
Quantity Surveyors	8
Main contractor	17
Specialist Contractor	10
Other	2
Total	68

Table 1 – Breakdown of Responses

What is your role with the company?

90% of respondents reported that their role was at Director/Principal/Associate level, which would indicate that responses could be reliably construed as being strategic data that could be relied upon for benchmarking purposes.

How would you describe your business's current awareness of Building Information Modelling?

85% of the sample reported that they were aware of and currently using BIM.

Are you aware of the UK BIM Mandate?

As expected, the majority of respondents were acutely aware of the mandate.

How confident are you of the knowledge and skills in your organisation in respect to BIM?

67% of responses indicated that they possessed confidence in respect to BIM knowledge and skills, with only 6% reporting no confidence. The remaining 27% reported a general knowledge of BIM and a gradual improvement in BIM skills.

Which of the following standards/publications does your organisation use?

It is concluded from the responses that the sample have been heavily influenced by the suite of publically available standards/publications in the UK. The top five reported documents that they consulted for when working with BIM are shown in table 2 below.

BIM Standards/Publications	Nr
PA1192: 2 (2013)	23
PAS1192:3 (2014)	17
PAS1192: 2007	15
RIBA Plan of Work (2013)	15
CIC BIM Protocol	14

Table 2 – BIM Standards/Publications

What are the main barriers to using BIM?

No particular barriers featured prominently in the results. The top five barriers that were reported are shown in Table 3 below.

It can be seen that the traditional barriers to BIM of cost and lack of demand ranked the most highly, closely followed by internal organisational pressures, such as, a lack of expertise, insufficient training and time management.

BIM Barriers	%
Cost	66
No client demand	57
Lack of in-house expertise	56
Lack of training	55
No time to get up to speed	45

Table 3 – BIM Barriers

Is your organisation experiencing an increased demand for BIM from clients in Ireland?

Notwithstanding the fact that respondents reported a lack of client demand as a barrier, almost 75% of the sample reported an increase in demand for BIM in Ireland, which is significant.

Is your organisation aware of the Construction IT Alliance (CITA)?

85% of respondents reported that they were aware of the work of CITA in promoting BIM. When asked about how CITA could better support industry in the adoption of BIM, a number of salient points were suggested by the respondents.

Work more closely with the SCSi to define BIM specifications and also understand the role that surveyors have in a BIM cycle.

Continue to lobby professional groups (SCSi, RIAI, IEI, ACEI etc.) to promote awareness and offer training within those groups. Targeting public sector clients to adopt similar protocols as the UK government.

Provide more support for the medium to small subcontractors in the industry.

Encourage certification.

Increase regional presence and activities.

Focus on successful BIM projects completed / in-progress, tell the story via case studies.

The contracting sector is driving the roll out of BIM in the UK. The same is likely to happen in Ireland. Close co-operation between the professions and the construction sector is essential. Funding the upskilling of smaller practitioners may have to be helped by the construction industry.

Support companies in terms of BIM accreditation and documentation.

Better engagement with the whole industry via an annual survey and better adoption focused training programme.

Confirming adaption of industry standards. Lobby government for support for the investment in BIM adoption.

Do you believe that the Irish government should follow the UK in mandating BIM on public sector projects in the future?

Respondents were largely split on the matter of a BIM mandate in Ireland. Tables 4 and 5 below provide a summary of the comments for and against the introduction of an Irish mandate.

Nr	In Favour of an Irish Mandate
1	<i>This is the way of the future.</i>
2	<i>A considered implementation and standard approach is required from government.</i>
3	<i>This would provide a real impetus for industry-wide implementation</i>
4	<i>A mandate is vital to ensure universal adoption of BIM.</i>
5	<i>Inevitable progressive step towards greater efficiency.</i>
6	<i>Yes. This is crucial for increasing the value gained from capital investment. It would also serve to improve Irish companies' opportunities to export services.</i>
7	<i>A definite YES . Utilisation of BIM needs to be mandatory on public sector contracts, Irish Water etc. to drive our competitiveness.</i>
8	<i>The quality of project execution will increase dramatically across many levels.</i>
9	<i>This will lead to significant efficiency gains throughout the design, construction and operational life of buildings.</i>

Table 4 – Comments in favour of an Irish BIM mandate

Nr	Not in Favour of an Irish Mandate
1	<i>No. Fees are still ridiculously low.</i>
2	<i>Voluntary adoption tends to bring increased enthusiasm and better adoption, not minimum approach just to meet requirements.</i>
3	<i>Inevitable progressive step towards greater efficiency.</i>
4	<i>I don't think it should be universally adopted, as many projects and contractors are very small by international standards and it may not be acceptable to effectively exclude large numbers of contractors.</i>
5	<i>I do not believe that BIM is required for all projects and certainly not at all stages. It is not an end in itself but needs to be seen as a useful tool and not a system for system's sake.</i>
6	<i>I am not convinced on a mandate.</i>
7	<i>Mandating is too strong, a programme of increasing incentives is better. Most procurement bodies do not understand what they are asking for with BIM.</i>
8	<i>It will eliminate a lot of smaller contractors from tendering for public work.</i>

9 *Learn, don't blindly follow.*

10 *I think it would be a mistake to mandate for all projects, but a phased approach to encapsulate different bands of projects.*

11 *The industry is not ready.*

Table 5 – Comments not in favour of an Irish BIM mandate

A further breakdown of the responses to this question is shown in Table 6 below.

It is evident from Table 6 that the majority of respondents were in favour of an Irish mandate, but only marginally. On further analysis it is clearly evident that a BIM mandate

would not be popular among quantity surveyors and a large majority of main contractors surveyed. Engineering consultants were largely supportive, with architects and specialist contractors largely split on the matter.

Organisation Type	Nr of Responses	For	Against
Architecture	10	6	4
Engineering Consultancy	21	18	3
Quantity Surveyors	8	0	8
Main Contractor	17	6	11
Specialist Contractor	10	5	5
Other	2	2	0
Total	68	37	31

Table 6 – Breakdown of responses in respect to an Irish BIM mandate

Have you ideas on how your industry representative body (ACEI, CIF, RIAI, SCSi, Engineers Ireland) could support the industry adoption of BIM?

The purpose of this question was to gauge if there were any common threads of opinion among the respondents as to how the representative professional groupings could better support the adoption of BIM in Ireland.

Table 7-12 below provide a summary of the feedback received from each of the groupings.

Nr	Feedback from Architects
1	<i>RIAI is already providing training courses and raising levels of awareness.</i>
2	<i>Set up clear standard on protocols to follow as an industry norm.</i>
3	<i>The RIAI is promoting BIM, defining standards and developing a CPD programme in isolation. However an approved collaborative industry-wide training and/or up-skilling scheme would pool scarce resources, control duplication of effort and ensure consistency in the quality of training.</i>
4	<i>It is very important that the use of BIM software is taught to 3rd level students in industry courses.</i>
5	<i>Promote use of BIM on public projects to contracting authorities.</i>
6	<i>Continue to support CPD and encourage members through demonstration of benefits by other members.</i>

Table 7 – Feedback from Architects

Nr	Feedback from Consulting Engineers
1	<i>Lobby for support from industry.</i>
2	<i>Engage with government on the benefits and potential for BIM as an opportunity for exporting professional service.</i>
3	<i>Better engagement with the whole industry via an annual survey and better focused training based on results.</i>
4	<i>Negotiate an orderly transition, where uninformed requirements are not sprinkled across the procurement domain, leading to exclusions and unnecessary cost.</i>
5	<i>BIM will only be implemented if all the professional disciplines jointly support the implementation of BIM on a common platform and jointly convince clients of the advantages and actual cost/benefits of BIM.</i>
6	<i>Get behind CITA.</i>
7	<i>Engineers Ireland and ACEI could publish briefing notes and guidance documents for members, in a similar fashion to other professional bodies internationally.</i>
8	<i>Need for these Executive Boards to engage more effectively in the adoption of BIM in design and construction with their own membership.</i>
9	<i>Spell out the advantages for designers and architects.</i>

- | | |
|-----------|---|
| 10 | <i>Interface with third level bodies to ensure that BIM training is provided at third level engineering courses and that recognised modules are provided. Provide accredited long term courses for BIM / Revit technicians at third level.</i> |
| 11 | <i>Hold more conferences and information sessions outlining the benefits.</i> |
| 12 | <i>By lobbying government to follow the UK in mandating BIM on public sector projects and making the appropriate allowance for Irish firms in the procurement prequalification criteria, i.e. do not make the initial criteria such as number of projects completed, using BIM too onerous.</i> |
| 13 | <i>Organise training courses and incorporate revised fee structure for BIM projects.</i> |

Table 8 – Feedback from Consulting Engineers

Nr	Feedback from Quantity Surveyors
1	<i>On-going CPD and collaboration with the other professional institutions on joint approach.</i>
2	<i>Perhaps greater SCSi training for surveyors in BIM</i>
3	<i>There needs to be a common direction, focus and adoption of agreed protocols. There also needs to be some straight talking on when and where BIM is appropriate.</i>
4	<i>Raise awareness. Support the BIM committee by providing training and CPDs.</i>
5	<i>Explain that fee levels must increase.</i>

Table 9 – Feedback from Quantity Surveyors

Nr	Feedback from Main Contractors
1	<i>Run more regular workshops.</i>
2	<i>Focus on QS advantages - ultimately cost savings drive change.</i>
3	<i>CPD enriched training.</i>
4	<i>Government channels and representatives should be utilised to educate government decision makers on the value of BIM and the success of BIM (including the UK targets).</i>
5	<i>Coordinated government lobbying and integrated multidisciplinary workshops.</i>

Table 10 – Feedback from Main Contractors

Nr	Feedback from Specialist Contractors
1	<i>Enterprise Ireland BIM-Enable/BIM-Implement grants already in place.</i>
2	<i>Promote the benefits of BIM to our clients and provide more assistance with training.</i>
3	<i>Training and push for Irish Water adoption of BIM.</i>
4	<i>Provide additional CPD training.</i>
5	<i>I understand it is about working together in BIM, but I do think that each body's core expertise needs to be maintained and with BIM projects sometimes the boundaries between consultants can be muddled. To help this, each body needs to set out their input to the cycle and what workflow or specification their members apply. I think the culture of how important upfront price is as the deciding factor needs to be addressed across the industry. We need to focus on the cost of getting it wrong and educating our clients and co-consultants. Each body should develop a guidance document which is based on one ideal project and how they all add value. It should focus on where without the expertise, it can go wrong.</i>
6	<i>Improved Supply Chain awareness of what's required and from whom, client, contractor, sub contractor etc.</i>

Table 11 – Feedback from Specialist Contractors

Nr	Feedback from Others
1	<i>Step by step integration taking into account all levels and size of businesses' adoption within the UK focused on getting BIM running without looking at how it was to be implemented by smaller companies. This means whilst large companies adopted BIM, their supply chain was left lingering behind.</i>
2	<i>Availability of "case study" projects in various sectors demonstrating the "added value" that the use of BIM will bring to owner/occupier clients.</i>

Table 12 – Feedback from Others

A common thread running through this feedback is the need for more CPD training, integrated workshops, Irish BIM case studies and guidance material in the use on BIM on exemplar projects.

In addition, there is are recurring messages that the representative groupings need to “work together” more on finding a common message, so they can collectively convince clients to adopt BIM.

Conclusion

The feedback received by the groupings appears to be a collective call for the professional representative groups to start looking at BIM more seriously and to lobby the Irish government to take a position on its applicability in Ireland.

The recent announcement of the success of CITA in securing the BICP (BIM Innovation Capability Programme) funding is a significant milestone in the maturing of CITA as a go-to place for leading international research and consultation capability in the pursuit of excellence in the specialist area BIM and its applicability for the Irish AEC sector. The imminent Digital Construction Week in London and our forthcoming CITA BIM Gathering International Conference are the ideal platforms to launch this important project.

The BICP project will allow for further data to be collated with the cooperation of the representative professional groupings in the AEC Irish construction community to better understand and support those leaders in business that wish to transform their business processes through digitisation.

Acknowledgements

We would like to thank Ralph Montague (Ardox) and John Hunt (Enterprise Ireland) for their assistance in the design and dissemination of the survey. I would also like to thank the contribution of the Association of Consulting Engineers of Ireland (ACEI), Construction Industry Federation (CIF), Society of Chartered Surveyors in Ireland (SCSI), Engineers Ireland and the Royal Institute of Architects in Ireland (RIAI) in selection of the sample.

Prepared by:

Dr. Alan V Hore

Founding Director
Construction IT Alliance, Ireland

John Hunt

Senior Market Advisor
Construction Sector
Enterprise Ireland

16th October 2015

In partnership with

