

Build Digital

Industry Colloquium

To better align the project with the needs of the industry and to identify the benefits expected for the industry from the future work of the project.

www.builddigitalproject.ie



Acknowledgements

The Build Digital Project is grateful to all who contributed to make the industry colloquium a success. In particular, the event would not have taken place without the sponsorship and the hands-on practical support of the Construction Industry Federation (CIF). When Build Digital approached the CIF there was no hesitation, the organisation threw open its facilities, made all the arrangements and provided experienced staff who did a terrific job as room facilitators. A special word of thanks goes to Denise Tuffy who went above and beyond the call of duty in organising this event, and to Sean Downey who has championed the Build Digital initiative for many years.

With the event anchored by the CIF, it quickly became a collaborative effort.

- **Enterprise Ireland (EI)**, which has the stated objective to help the industry become digitalised, sustainable and competitive, identified and provided the event facilitator – Fiona O’Carroll.
- **P.J. Rudden**, who is relentless in driving the seven actions relating to innovation and digital adoption for the Construction Sector Group (CSG), accepted the brief to set the context for the colloquium.
- **The Office of Government Procurement (OGP)** didn’t hesitate when asked to present and that presentation, in conjunction with the context set by P.J., brought a valuable focus to the discussion.
- The representative bodies comprising the **Construction Industry Council (CIC)** reached out to their memberships to participate and, notwithstanding competing events and the holiday season, a well informed and experienced cross-section of the industry formed the colloquium attendance. It was uplifting to observe such a high level of expertise from across the sector working together.
- The Build Digital Project sponsor, the **Department of Public Expenditure NDP Delivery & Reform (PENDR)**, was fully supportive of this event and the efforts of the Project to learn, adapt and evolve.

Pat Lucey

Steering Group Chair and Industry Lead for the Build Digital Project



“We can achieve anything if we work together as one.”

Siya Kolisi, South African rugby captain after winning World Cup 2019.

In the ever-evolving landscape of the construction industry, digital transformation has emerged as a pivotal force reshaping the way projects are conceived, executed, and delivered. This transformation, fuelled by cutting-edge technology and innovative practices, holds the promise of greater efficiency, sustainability, and collaboration within the construction sector.

Each pillar of the Build Digital Project addresses a distinct facet of this transformation, shedding light on areas where improvements and strategic shifts are required to harness the full potential of digitalisation.

The Build Digital Project colloquium objective was to further align the project with industry needs and clarify the benefits the Project can offer. Participants were asked to think about specific actions the Project can take to benefit their businesses, prioritise key deliverables, and assess the industry's benefits from these top-priority deliverables.

As the participants reviewed the Build Digital Project pillars, a multifaceted view of the challenges and opportunities posed by digital transformation within the construction industry was discussed and key themes emerged.

Digital transformation extends beyond technology; it encompasses a profound behavioural shift within organisations and across the construction supply chain. Challenges lie in the procurement processes, alignment of standards, and contractual agreements.

At the heart of any construction project lies the client's requirements, serving as the compass that guides the project's trajectory. As the colloquium participants delved into the intricacies of this transformative journey, a central theme emerged—one that underscores the critical role played by 'the client' in orchestrating and accelerating digital advancements and the objectives of the Build Digital Project.



This report offers a comprehensive summary of the Build Digital Project colloquium. It provides actionable insights and recommendations for clients, supply chain partners, and for prioritisation within the Build Digital Project pillars.

As the industry partners seek to build a more efficient, sustainable, and collaborative construction sector, understanding and harnessing the invaluable insights gained from the colloquium is imperative to navigating this transformative journey effectively.

Fiona O'Carroll,
The Digital Mindset,
Event Facilitator.

The event

A colloquium is a conference where high-level discussions take place between experts in relation to a topic of importance. The event typically has a questions and answers period and is followed by the compilation of a document which details the discussions that took place. Chatham House Rules apply, meaning any discussions, other than formal presentations, will not be attributed to the contributor.

The purpose of the Build Digital Industry Colloquium is to better align the project with the needs of the industry and to identify the benefits expected for the industry from the future work of the project. To ensure a diverse representation, Build Digital approached the Construction Industry Council (CIC) to invite participants from CIC representative bodies. The complete list of attendees is provided on page 6.

The venue was Construction House (Construction Industry Federation (CIF) offices) on Canal Rd., Dublin 6, and the event ran from 8.00am-12.30pm on June 16, 2023.

One day out from the colloquium, all attendees were provided with a short briefing document, including the current list of deliverables, and were asked to consider in advance:

- a) what tangible and meaningful actions the Project can take that would add value to their business?;
- b) which of the deliverables have the highest priority for the industry – top five/seven?; and,
- c) the benefits for the industry of the highest priority deliverables.

The agenda

1. **Welcome and introduction** – Pat Lucey, Chairman, Build Digital Project Steering Group
2. **Context setting** – P.J. Rudden, Chairman, Construction Sector Group (CSG) Innovation and Digital Adoption Sub Group
3. **The client perspective** – Office of Government Procurement (OGP) representative outlining what the organisation needs from the Build Digital Project and what it would like from this event – Stephen Lynam, Technical Advisor, OGP
4. **Overview and plan for the morning** – Fiona O’Carroll, Director, The Digital Mindset
5. **Breakout sessions** – Four breakout rooms in meeting rooms two, four, five and six
6. **Review of feedback**
7. **Closing remarks and next steps** – Dr Clare Eriksson, Project Director, Build Digital Project



Item	Pillar	Deliverables
1	P1	Feasibility study for Living Labs (carried forward to year two).
2	P1	Report on results of national annual survey published (year one).
3	P1	National annual survey updated and launched (year two).
4	P1	Existing toolkits for enterprise gap analysis in terms of digital capability identified and evaluated.
5	P1	Workshop facilitated to support design of a toolkit for enterprise gap analysis in terms of digital capability.
6	P1	Prototype of toolkit for enterprise gap analysis in terms of digital capability developed and tested.
7	P1	Enterprise implementation strategy toolkit to enable digital transformation leaders to develop an implementation strategy in response to identified gaps in digital capability.
8	P2	Drafting of national guidelines for the Irish Information (IM) framework commenced with procurement Pillar 4 and piloted with SMEs.
9	P2	National guidelines for standards usage for group 1 (planning phase focus) – focus on pre-appointing parties' role within the BIM process.
10	P2	Standards-based CPD piloted for group 1 (planning phase focus).
11	P2	Standards-based postgraduate and undergraduate module development commenced – N.B. – this deliverable may be pushed to 2024 in order to deliver DPER/OGP deliverables.
12	P3	Education and training inventory – annual review and update.
13	P3	Analyse survey results from year one to determine outcomes, learnings and establish appropriate questions for the year two survey; also to be supplemented by learnings from the conference/regional workshops.
14	P3	Assess the purpose of the Digital Construction-Related Skills Gap Analysis Tool through reviewing exemplars on a national and international basis. Initial framework to be subsequently created and developed with industry partners.
15	P3	Block one of 'standard' accredited modules (including micro-credentials) identified with existing project outcomes including their method of delivery and aligned with findings from year two survey.
16	P3	Digital education, Training, & Research Networks mapping to be maintained, detailing all existing Irish networks to provide greater clarity for all stakeholders across the country and avoid duplication of activities. Initial publication on Exchange Hub.
17	P4	BIM and information management frameworks (needs reconsideration in light of the recent work with OGP; also, clear link to Pillar 2).
18	P4	SME maturity survey with respect to digital procurement.
19	P4	Case studies and Living Labs. These will include: <ul style="list-style-type: none"> • prequalification and common assessment standards; • impact of environmental legislation on procurement management (EU Green Deal, Climate Action Plan Targets 22, etc.); • procuring with modern methods of construction; and, • global trade item number (GTIN)/product identification and traceability.
20	P5	Digitalisation for a Circular Economy (DiCE) industry toolkit – a set of resources for the different stakeholder groups who wish to drive or respond to circular economy and digital Project requirements.
21	P5	Workshops facilitated to obtain feedback on draft DiCE industry toolkit. For 2023, the focus is on the early project phase drivers, i.e., clients/developers and local authorities.
22	P5	Framework for DiCE education toolkit – resources to support the DiCE industry toolkit, i.e., short videos on the use of templates, tools etc. Additionally, in collaboration with Pillar 3 and the Digital Academy for the Sustainable Built Environment (DASBE) project, exploring opportunities to develop modules/courses addressing the gap in this area.

List of attendees

Surname	First name	Organisation	Role
Butler	Paul	Enterprise Ireland	Observer
Carroll	Liz	Skillnet	Participant
Coleman	Paul	Nicholas O'Dwyer Ltd.	Participant
Comerford	Gary	Society of Chartered Surveyors Ireland (SCSI)	Participant
Condon	Anthony	P.J. Hegarty & Sons	Participant
Corrigan	Breda	Mannings Construction Group	Participant
Costello	Mark	RPS Consulting Engineers	Participant
D'Arcy	Brendan	Walls Construction	Participant
Dempsey	Shane	The Association of Consulting Engineers of Ireland (ACEI)	Participant
Downey	Sean	Construction Industry Federation (CIF)	Observer
Duffy	Derek	Kilsaran Precast	Participant
Eriksson	Clare	Build Digital Project Director	Observer
Gairgeri	Fabrizio	Ardmac	Participant
Gormley	Ciaran	Bennett Construction	Participant
Hayes	Conor	Arup	Participant
Higgins	Kevin	Tobin Consulting Engineers	Participant
Irving	Alison	Construction Industry Federation (CIF)	Breakout Room Facilitator
James	Rosie	Construction Industry Federation (CIF)	Breakout Room Facilitator
Kavanagh	Brian	Garland Consultancy	Participant
Kerrigan	Neil	Enterprise Ireland	Observer
King	Patrick	Society of Chartered Surveyors Ireland (SCSI)	Participant
Lavin	Joe	Suir Engineering	Participant
Lucey	Patrick	Build Digital Steering Group Chair & Industry Lead	Opening address and observer
Lynam	Stephen	Department of Public Expenditure NDP Delivery & Reform (PENDR) – Office of Government Procurement (OGP)	Presenter and observer
Mady	Joe	DCT Group	Participant
McAuley	Barry	Build Digital Pillar 2 Co-Chair	Observer
McGinity	Aine	Construction Industry Federation (CIF)	Breakout room facilitator
McNally	Ciaran	Build Digital Pillar 4 Co-Chair	Observer
Meaney	Kevin	Department of Public Expenditure NDP Delivery & Reform (PENDR) – National Investment Office	Participant
Moneley	Siobhan	T.J. O'Connor & Associates	Participant
Moore	Robert	Build Digital Project Lead	Observer
Moore	Edel	CJK	Participant
Murphy	Michael	BAM	Participant
Murtagh	Gillian	Shay Murtagh Group	Participant
O'Brien	David	Department of Public Expenditure NDP Delivery & Reform (PENDR) – Office of Government Procurement (OGP)	Observer
O'Byrne	Ruairi	J.B. Barry & Partners Ltd.	Participant
O'Carroll	Fiona	The Digital Mindset	Event Facilitator
O'Catháin	Eoin	Roughan & O'Donovan	Participant
O'Mahony	Padraig	Weltec	Participant
Ramanundh	Pranash	The Royal Institute of the Architects of Ireland (RIAI)	Participant
Ross	Gillian	Construction Industry Federation (CIF)	Breakout Room Facilitator
Rudden	P.J.	Construction Sector Group (CSG) Innovation and Digital Adoption Sub-Group Chair	Context Setter and observer
Sayers	Marguerite	ESB and Member of Build Digital Steering Group	Observer
Semaan	Simon	Building Design Partnership	Participant
Sinnott	Derek	Build Digital Pillar 5 Co-Chair	Observer
Taylor	Sean	Dornan Group	Participant
Tuffy	Denise	Construction Industry Federation (CIF)	Event Organiser

Attendance metrics

There were 47 attendees including the event organiser and four breakout room facilitators from the CIF, along with the overall Event Facilitator, Fiona O'Carroll. The remaining 41 people (Figure 1), comprising 13 observers and 28 participants (Figure 2), all contributed to the discussions, but the responses from the breakout sessions came only from the participants.

FIGURE 1: The industry breakdown of the 41 observers and participants.

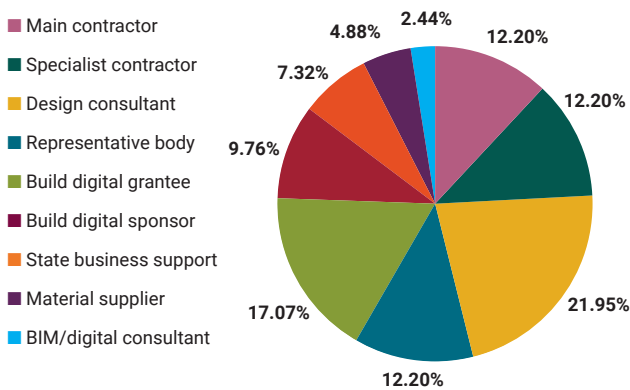
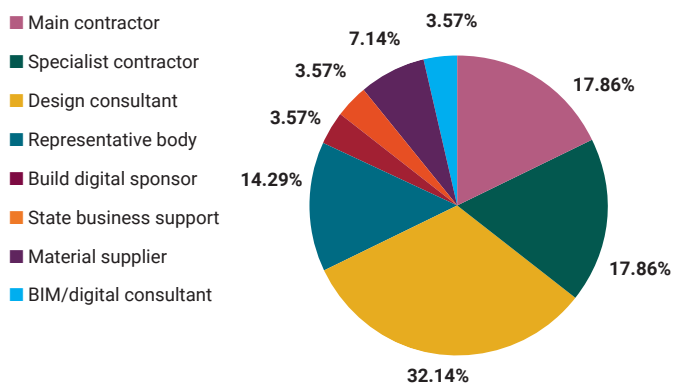


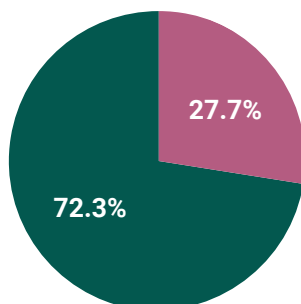
FIGURE 2: The industry breakdown of the 28 participants.



Gender metrics

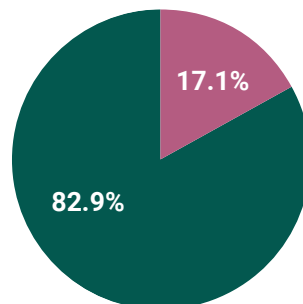
Of the 47 people in attendance
13 were female (27.7%) and
34 were male (72.3%).

Female
Male



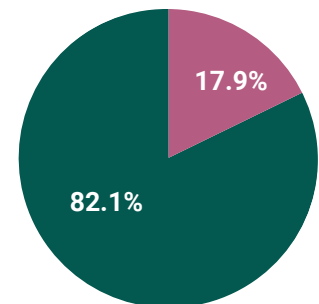
Of the 41 observers and participants,
17.1% were female and
82.9% were male.

Female
Male



Of the 28 participants,
17.9% were female and
82.1% were male.

Female
Male



Key Takeaways from the Event

A central theme that emerged across all of the breakout rooms was the critical role that 'the client' plays in orchestrating and accelerating digital transformation in the construction sector. Why? The starting point for a project is the client's requirement. This informs the scope, EIRs, contracts and ultimately the behaviour of the supply chain. Has the Build Digital Project allocated the right amount of focus to this given its critical nature?



At the event were Shane Dempsey of the ACEI (left), and Patrick King of the SCSL.

1. PILLAR 1 - DIGITAL LEADERSHIP AND CULTURAL CHANGE

The behavioural aspect of this change cannot be underestimated, and the mindset within organisations and across the supply chain. Recommend a review of how this has been considered in the education and training pillar.

Lack of/low-level digital mindset is an obstacle to delivering the Build Digital Project. This relates to both the client and the construction industry supply chain providers. The technology itself is not the biggest obstacle (it is primarily 'off the shelf' with integration required) – the adoption of digital ways of thinking, acting, and executing is a far bigger challenge. The construction industry by its nature is fragmented, siloed, transient and decentralised. The shift to digital is significantly challenging this, requiring the supply chain to collaborate in new ways. This requires high levels of trust between suppliers, which has not historically been the 'way of working'. This is a behavioural change that needs to be supported in the strategy toolkit.

The client is the driver of the requirements – this is the starting point. The client's approach to implementing and communicating digital requirements and ways of working is critical.

2. PILLAR 2 – DIGITAL STANDARDS

There are best-in-class examples in other countries that are ahead of Ireland (e.g., UK, Scandinavia). We can move faster by following the lessons from other jurisdictions. We do not need to reinvent the wheel. The procurement processes, requirements from the client, alignment of standards, and contractual agreements are the bigger challenge.

3. PILLAR 3 – DIGITAL EDUCATION AND TRAINING

Consensus is that the training at postgraduate and undergraduate level is high. Microcredentials were considered important. 'Bottom-up' education should be a priority. Providing regular insight to lessons learned is deemed to be of high importance.

Is there enough focus on the client and senior level executives in the supply chain providers in the education process (CPD)? Is there enough focus on the development of a digital mindset, which will be led from the top down?

The frequency, flow and process of communication will be important moving forward.

4. PILLAR 4 – DIGITAL PROCUREMENT

Getting access to early case studies was rated highest within this pillar. In addition, case studies need to communicate the benefits to enhance understanding.

To enable digital execution, contracts, insurance, and liability need to reflect/align with new ways of working. A detailed review of the specifics will be beneficial in aligning all players, building trust and developing guidance documents. This is a big challenge and currently an obstacle. What can we learn from case studies that have addressed this?

The implementation of BIM standards, training, etc., will not be enough for success. If 'ways of working' together are not addressed, it will slow down the process of digital adoption. The smaller contractors are also critical; they need to be included and supported.

5. PILLAR 5 – SUSTAINABILITY AND CIRCULAR ECONOMY

There was discussion in the groups on this topic, but this pillar rated lowest in terms of overall priorities in the final group feedback. Why? This could be related to the mix of attendees. It could also be that Pillar 5 is dependent on progress in the other four pillars so they naturally ranked higher.

Key takeaways for the client:

- be informed – build knowledge and prepare for the mandate;
- know what you want and why, and communicate clearly to the supply chain;
- get documents right before going to the supply chain;
- use collaborative contracts and procurement procedures;
- articulate sustainability objectives better – they did not come high in the priorities; and,
- the supply chain is looking for clarity, certainty and defined terminology.

Key takeaways for the supply chain:

- read the client's requirements and avoid re-work;
- read the client's requirements and include in the price;
- produce case studies to share lessons learned; and,
- main contractors should invest in subcontractors information management journey

Key takeaways for the Build Digital Project:

- simplify the language used – use plain language;
- the urgent need is for some Pillar 2 and Pillar 4 deliverables;
- review the deliverables in light of the comments about blending and linking some of them – is there potential for streamlining the priorities?;
- improve communication to the industry;
- ensure the annual survey is circulated widely;
- Pillar 3 should focus on microcredentials;
- review the deliverables under Pillar 5 – why did they not come higher in the priorities?;
- due to budget constraints, the Build Digital Project can't do everything – prioritise; and,
- organise a follow-up workshop with clients – to compensate for the lack of client representation at the colloquium.

Key takeaways for the build digital sponsor PENDR:

- review funding;
- look at public sector contracts – it is suggested they are an obstacle to digital transformation; and,
- develop public sector procurement to take account of whole life costs / sustainability / circular economy considerations.

Overview

Room 2 focused on the list of deliverables from the outset, with participants outlining the reasoning behind their choices. The role of the client came into the discussion early on and was mentioned throughout. The fundamental importance of the annual survey was cited by several participants and it was noted that it should be considered over-arching and outside of the list of deliverables. The blending and modification of deliverables were deemed appropriate by several participants, e.g., deliverables 8+17, 16+9, 5+6+7. Case studies were referenced throughout as a method of capturing and communicating learnings. Pillar 5 (Sustainability and Circular Economy) was mentioned by a single participant and none of the P5 deliverables made Room 2's top-five priorities. The agreed top-five priorities were listed twice towards the end of the meeting – firstly, as individual deliverables and secondly as blended deliverables. For simplicity, the individual list is used in this summary. However, for completeness and clarity, the individual participants' priorities are also provided in **Table 1** and this highlights the views on the linkage of deliverables.

Themes:

- the use of project case studies to capture and communicate learnings/benefits and to deepen understanding;
- the validation of completed work and how the contract deals with validation and liability;
- collaboration and BIM and the benefits of collaboration;
- the industry understanding of digitisation as a critical component of modern methods of construction (MMC);
- the traditional contract is not fit for purpose for implementing MMC;
- the behavioural aspect of this change cannot be underestimated (mindset within organisations and across the supply chain)
 - review how this has been considered in the education and training pillar;
- reshaping/consolidation of linked deliverables; and,
- the value for different stakeholders.

Key words/phrases

Case studies / annual survey / client / validation and liability / collaboration / the contract / lean for construction / siloed thinking / value / education / consolidated deliverables / linked deliverables

Selected quotes

- *"From a priority I think number nine would probably be at the top more from a client's perspective because I think that clients make a tough job for everybody throughout the chain if they don't know why they're exactly doing something."*
- *"I think there are some [case studies] already out there and what we can do at the moment is show where somebody tried something and failed and also where somebody's succeeded and communicate that."*
- *"When you finish the job who validates that the building [model] matches what's installed on site and who also validates when it goes to the operators or the client?"*
- *"Liability is always an issue with every construction project and I don't think BIM is going to solve those problems but what it will do is shine a light into areas that I don't think we did before."*
- *"If you can actually roll out case studies to the industry, people will actually understand it better."*
- *"Part of that is client pressure, they want the cheapest price possible, so they don't see the value in investing in the frontloading of the information design."*
- *"What I'm seeing at the moment is still using traditional contracts and traditional methods of procurement and this doesn't really work with BIM because BIM is a collaborative way of working."*
- *"People learn in different ways and are influenced in different ways, so the standards are the hammer but also the guidelines; whereas the case studies are the learnings."*

- *“The end client has to see the value he’s getting”*
- *“The client has to be willing to pay for what he needs to get what he’s asking for.”*
- *“A client said to me one day: ‘You charged us for BIM, but you get the reduction in programme, and you get the reduction in rework, and you get reduced waste, so why do you charge us for it?’”*
- *“All contracts should have a BIM execution plan as a requirement.”*
- *“You get a lot of, Oh, we want BIM and then where they lump it into the contract is into the co-ordination collaboration clause in the contract and they go, ah yeah, that’s your deliverable and we expect you to do it.”*

Priorities

1. **Deliverable 9 (Pillar 2)** – National guidelines for standards usage for group 1 (planning phase focus) – focus on pre-appointing parties’ role within the BIM process.
2. **Deliverable 19 (Pillar 4)** – Case studies and Living Labs. These will include:
 - prequalification and common assessment standards;
 - impact of environmental legislation on procurement management (EU Green Deal, Climate Action Plan Targets 22, etc.);
 - procuring with modern methods of construction; and,
 - global trade item number (GTIN)/product identification and traceability.
3. **Deliverable 8 (Pillar 2)** – Drafting of national guidelines for the Irish Information (IM) framework commenced with procurement Pillar 4 and piloted with SMEs.
4. **Deliverable 7 (Pillar 1)** – Enterprise implementation strategy toolkit to enable digital transformation leaders to develop an implementation strategy in response to identified gaps in digital capability.
5. **Deliverable 16 (Pillar 3)** – Digital education, Training, & Research Networks mapping to be maintained, detailing all existing Irish networks to provide greater clarity for all stakeholders across the country and avoid duplication of activities. Initial publication on Exchange Hub.

Table 1: Individual participants’ priorities.

Priority	Participant						
	A	B	C	D	E	F	G
1	6	9	16	8	17 + 8	17 + 8	8
2	7	19	19	10	5 + 6	9	9
3	10	10	6	11	7	19	7
4	13	16	11	19	9	20	17
5	16	3	-	4	10 + 11	3	15

Items suggested as missing from the deliverables:

- collaborative contract;
- capturing the OGP work in case studies/early case studies;
- lean for construction;
- the contract;
- baseline CPD curriculum/module, e.g., terminology; and,
- interdependencies across the five pillars (how they impact on each other).

Value of the Build Digital Project to individual organisations:

- more efficiencies;
- alignment with international offices;
- having an educated client clearly defining what the requirements are at the start of the project;
- driving education leading to getting on more tender lists;
- reduced risk;
- realising asset management potential, currently just theory; and,
- clarity of the client’s requirements.

Overview

Room 4 had a wide-ranging discussion covering many topics raised by the participants including: gathering evidence from ongoing projects; the lack of alignment between whole-life-costing and current procurement models; adversarial contracts; the need for increased resources and upskilling of the client; gap analysis toolkits; ways of assisting SMEs; standardising prequalification assessments; creating allowances in contract sums for software and hardware for clients; resourcing the OGP; education and training across the industry; the need for more people in the industry; poor gender diversity in construction; and, the role of the facilities manager in terms of utilising data produced. Quotations have been selected that give a flavour of the discussion. It was noted that the room lacked client input. Towards the end of the meeting the top five deliverables were agreed quickly, mostly with an add-on or a qualification, which are highlighted in the priorities list through the use of underlined italics. Case studies of exemplar projects received a strong backing as a deliverable that's missing from the list. Participants emphasised that the wording of the deliverables is unclear and should be improved.

Themes:

- case studies to capture learnings and provide evidence of benefits;
- whole-life costing as a driver, and alignment with procurement;
- adversarial culture due to the Public Works Contract;
- the contract is the driver of behaviour and the level of collaboration;
- supporting SMEs;
- employer's information requirements (EIR) and education of the client;
- client provision of toolkits ;
- standard toolkits made bespoke for individual projects – “breaking the system”;
- contract sums to include percentage allowance for client's hardware and software;
- how to get supports to subcontractors; and,
- the challenge of getting more people.

Key words/phrases

Case studies / lessons learned / adds value / evidence / whole-life costs / procurement / clients / contract / collaboration / EIR / common data environment / people / resources / diversity / culture / exemplar projects / digital standards

Selected quotes

- *“There's an unbelievable amount of really good stuff happening out there.”*
- *“People don't believe it adds value – they believe it adds cost to the whole process. And if you saw the evidence that you're suggesting there, we might actually believe.”*
- *“People are sitting on the fence or want to get involved, and would like to get involved in more complex stuff. What would entice them to get more involved?”*
- *“And as regards life cycle, whole-life costing, I don't believe it's done, and it's certainly not part of the analysis in relation to decision-making.”*
- *“I think it'd be interesting to have the procurement model developed to align with the aspirations of what's trying to happen here”.*
- *“Whenever a tender comes in, first thing you look for is the EIR document. For me, it's always a red flag when that document has been written by the architect or another consultant on the job ... they just put everything in there.”*

- *"The clients don't know what they want, don't know what they need – and even if they did, they don't have the ability to produce it and ask for it."*
- *"When a tender comes in the door and BIM is mandated, the first thing our estimators do is add cost to that tender to allow for BIM. Not until they believe it actually delivers return will that change."*
- *"Where we have these best-in-class examples with tangible benefit, let's get that out there."*
- *"You need a mandate, you need something that's going to disrupt the system, you need this change to happen. It might feel like a bit of pain at first, but eventually, this is a better way of working."*
- *"Collaboration is never a bad thing – it shouldn't be a bad thing, it shouldn't cost you money."*
- *"In terms of SMEs... that type of support needs to be put in there – that the training is free or part of the contract, or the hardware and the software that they require."*
- *"I think the common assessment standard or prequalification system would give them [SMEs] that visibility, and that would help improve the market from the bottom up as well."*
- *"There's no shortage of toolkits on the market – if you want to find a toolkit, you'll find a toolkit. There is probably an advantage if there was a toolkit with a harp on it, and people can say that's definitely going to be relevant for this jurisdiction."*
- *"A percentage of the total contract value.... [for] the client for hardware and software expenses."*
- *"The OGP needs to be resourced... resourced at source, and then down the supply chain."*
- *"But if you look at some of the courses like Springboard, etc., people don't have the time to go on those courses because they're so stretched."*
- *"HR policies have to change as well, because women are not going to stay in the private sector, in construction, because once they have kids it's impossible. So, they'll move to the public sector or whatever sectors support them."*
- *"The client has a massive resource deficit at the moment, both in people and technology."*
- *"The EIR needs to be client driven, and a client can't step into a project with a blank piece of paper and ask the consultant to write the EIR for them."*
- *"Fund the basics, when a project kicks off, big or small, there should be an allocated percentage for hardware and software, and maybe even for upskilling."*
- *"We're trying to prioritise waffle – I don't mean to be huge negative."*
- *"So, there's a huge culture change needed to happen within those organisations [public sector clients] where they can jump into this digital environment."*

Priorities:

1. **Deliverable 8 (Pillar 2)** – Drafting of national guidelines for the Irish Information (IM) framework commenced with procurement Pillar 4 and piloted with SMEs. *+ Supported by a toolkit.*
2. **Deliverable 12 (Pillar 3)** – Education and training inventory – annual review and update. *Note: But more than an inventory, the development of education and training for clients, SMEs and everybody.*
3. **Deliverable 14 (Pillar 3)** – Assess the purpose of the Digital Construction-Related Skills Gap Analysis Tool through reviewing exemplars on a national and international basis. Initial framework to be subsequently created and developed with industry partners. *Note: needs rewording.*
4. **Deliverable 18 (Pillar 4)** – SME maturity survey with respect to digital procurement. *+ what are the actions to improve maturity.*
5. **Deliverable 19 (Pillar 4)** – Case studies and Living Labs. These will include:
 - Prequalification and common assessment standards. *Note: Just this one, not the other points in this deliverable.*

Items suggested as missing from the deliverables:

- Mechanisms for capturing best practice and lessons learned from big and small ongoing projects. Evidence that BIM is an added value, and not just added because it's the hot commodity at the moment.

Value of the Build Digital Project to individual organisations:

- not discussed.

Overview

Room 5 began with each participant giving their 'gut feel' reaction to the opening statements and presentation. A wide range of issues were raised: verification costs; awareness of specification requirements; clarity of roles and responsibilities; readiness of Government clients for the mandate; knowledge gap in subcontractors; the liability for the model; clarity on the verification process; and, the need for date certainty on the mandate. The issues identified pointed to improvements needed in the supply chain and in clients. It was suggested that Tier 1 contractors are ready for the mandate. The difference in modelling for civil works and building works was highlighted. Brexit implications for UK certification were discussed and, when it comes to developing national standards, there was a view that standards from Scandinavian countries are more robust than those from the UK. The discussion moved onto a methodical consideration of the list of deliverables, which brought out other points: the procurement constraints that lead to wasted effort of designing for in-situ concrete when a precast solution is expected to be the optimum solution; changes in procurement for modern methods of construction (MMC); the lack of definition in sustainability language; and, all toolkits are important but the circular economy toolkit is the most pressing. There was criticism that the annual survey wasn't circulated widely, and that Build Digital communication fell short of what is needed.

Themes:

- clarity of the documentation needed before the contractual engagement;
- concern that Government clients may not be ready whereas the industry is generally ready;
- heard it all before about the mandate – definitive dates are needed;
- poor standard of communication at project level;
- lack of awareness of the Build Digital survey, the pillars, etc.;
- avoid reinventing the wheel – take a lead from the best in Europe for drafting standards and maintaining standards to keep them up to date and practical;
- wasted design work before arriving at the optimum solution can be avoided with improved upfront planning before a project starts; and,
- sustainability and the circular economy are very broad areas – more definition is needed.

Key words/phrases

Verification / specification / roles and responsibilities / metrics / national guidelines / liability / fear factor / EIRs / contracts / communication / flexibility for civil works / matrix of tolerances / pressure on design fees / sharing of communications / clearly defined / national survey / engagement / website / Brexit / certification / NSAI / MMC / employer-led design / poor procurement practice / value engineering / embodied carbon tracking / EPDs / innovation / definitions / circular economy / education / micro-credentials / certainty

Selected quotes

- *"I've seen one or two companies not including for verification, which is a scan of the work afterwards. And that was a big heap of money that was missing out of a lot of projects."*
- *"Specification is the biggest thing – and people have to read specs."*
- *"I think the industry is broadly ready... the implementation of exactly what they're looking for us to achieve is probably the first thing that we want to see."*
- *"So, they're still talking about national guidelines and standards – we need to see those urgently."*
- *"When it does come down to the subcontractors, who are the people that we're reliant upon for the actual delivery, I feel that there's a knowledge gap there."*
- *"The actual liability, and that piece around the roles and responsibilities, that needs to be much firmer."*

- *"Our industry is a confrontational industry. Because it's fixed price cost, everyone is squeezed."*
- *"Contracts are a huge issue... because Government clients don't know what they're asking for half the time. We'll get EIRs in, and two Government departments will be asking two different things."*
- *"It's grand to say there's going to be a Government mandate, but will there be one and how will it apply? That still hasn't been explained."*
- *"...how far do we want to take that BIM model... there is a question of deciding quite how far it is we think this should go... I think at the moment there is like actually probably a billion options."*
- *"...two different groups in the client, and one team wants information one way and another team want it in a different way and then you're like if the client's teams can't sit together and conclude on a decision, how are the subcontractors and contractors to get the information across in the way they want..."*
- *"It's back to talking about getting the documentation right in the first place before starting the project."*
- *"Feasibility study for Living Labs. Do we know what that is? I Googled it about 20 minutes ago."*
- *"I do think a lot of people think... by posting something on LinkedIn or sticking something on Twitter that oh I'm communicating with the industry. You're not."*
- *"The engagement, they [Build Digital] need to look at is how they're doing their engagement."*
- *"There are a lot of standards that are available across Europe, which are a little bit more robust [than the UK]."*
- *"The guy that's standing there with the pour of concrete coming is not aware of the information management responsibility that goes with that moment. I think that's where the education comes in."*
- *"For me education is the key priority. If we're not educating and communicating from the bottom up, we're not going to achieve our goals."*
- *"Circular economy' is too broad a phrase. It's being bandied around by everyone but defined by no one."*

Priorities

1. **Deliverable 8 (Pillar 2) and Deliverable 17 (Pillar 4) combined** – Drafting of national guidelines for the Irish Information (IM) framework commenced with procurement Pillar 4 and piloted with SMEs, + BIM and information management frameworks (needs reconsideration in light of the recent work with OGP; also, clear link to Pillar 2).
2. **Deliverable 15 (Pillar 3)** – Block one of 'standard' accredited modules (including micro-credentials) identified with existing project outcomes including their method of delivery and aligned with findings from year two survey.
3. **Deliverable 20 (Pillar 5)** – Digitalisation for a Circular Economy (DiCE) industry toolkit – a set of resources for the different stakeholder groups who wish to drive or respond to circular economy and digital project requirements.
4. **Deliverable 19 (Pillar 4)** – Case studies and Living Labs. These will include:
 - prequalification and common assessment standards;
 - impact of environmental legislation on procurement management (EU Green Deal, Climate Action Plan Targets 22, etc.);
 - procuring with modern methods of construction; and,
 - global trade item number (GTIN)/product identification and traceability.
5. **Deliverable 13 (Pillar 3)** – Analyse survey results from year one to determine outcomes, learnings and establish appropriate questions for the year two survey; also to be supplemented by learnings from the conference/regional workshops.

Items suggested as missing from the deliverables:

- a look at the lower tiers in construction – the small guys;
- support for environmental product declarations (EPDs) / support for tracking whole-life carbon
- clarity around liability; and,
- improving communication, making it focused and simplified is a takeaway for the Build Digital Project.

Value of the Build Digital Project to individual organisations:

- not discussed.

Overview

Room 6 took the approach of putting the list of deliverables to one side and participants discussed their own top priorities without being influenced by the list. There was a wide-ranging discussion covering many themes, with particular focus on the role of the client, education, exchange information requirements (EIRs), cultural change, people, and the contracts. Quotations have been selected below that give a flavour of the discussion. When it came to selecting the top five from the list of deliverables, Room 6 drew on the earlier discussion and identified four high-level objectives that covered many of the issues. Room 6 noted that the wording of the deliverables needs to be simplified and that a critical path for deliverables would be helpful. Overall, Build Digital was described as an enabler and a central source of information. It was highlighted that some good work has been done and it is a good time to hit the reset button; however, a re-ordering of priorities may be required. It was also highlighted that given the Project's constraints, in terms of budget, it will not be possible for Build Digital to deliver everything that is expected.

Themes:

- client education that is practical and easily actionable, leading to a well-informed client;
- education to improve the relationship between the BIM engineers and the wider design team;
- support for companies to implement digitalisation;
- opportunities for companies in sustainability;
- fit for purpose EIRs with clarity around ownership and roles and responsibilities;
- EIRs not aligned to contract requirements;
- procurement; and,
- the mandate as an enabler.

Key words/phrases

EIR / education / information management / liability / certification / P.I. insurance / contracts / top down / mandate / enablers / Living Labs? / culture change / people / procurement / urgency

Selected quotes

- *"It's as much about cultural change as much as digital change."*
- *"The people part is the hardest part."*
- *"But I think on the first piece anyway, on Pillar 1, we need to raise it up a level. I think the "why" is just not there yet in the industry and we need to be more organised."*
- *"I don't feel there's an emotional connection between the necessity to do this and our realities as an industry. I honestly feel that we have absorbed as much of this as we are prepared to absorb without changing the way we fundamentally work."*
- *"I think if people start making the connection between the National Development Plan and the urgency there, the environmental sustainability piece and the labour and automation piece, the MMC piece, you'll find very quickly they will be learning very quickly how to do these things and build these documents in the right way in order to procure the services they need to survive. I don't think the connection is there yet."*
- *"We spend way too much time having debates during construction delivery about what a client wants... expected to magically funded out of thin air as well... having a well-informed client would be a really, really welcome and important first step for this... You have to start with the Client."*
- *"If you don't have fit for purpose EIRs, you won't have anything."*
- *"and a growth in understanding across all players in the supply chain that it's about information management, otherwise you'll get the cut-out, cut and paste EIRs, etc. It's important."*

- *"When we have our well-defined EIR, an informed client, and it's full aligned. We need the toolkit. We need the communications. We need the change management plans. We need all of those things. But if you don't have the other, it will fall down."*
- *"The clients need to be better informed about what their expectations of us should be actually because clients come to us for professional services because guess what? They don't build, they don't design, they do other things."*
- *"Better-informed clients will probably lead to better-informed procurement."*
- *"The understanding of the roles and the responsibilities of who's actually and who's claiming liability and who's actually doing the sign-off is completely confused the whole way through the value chainWhy can't this piece of BIM etc look at as an overall project, so I'm not getting 100% insurance."*
- *"The contracts are so much more mature [in the UK] than the highly combative kind of situations we find ourselves in the whole time over here... Contracts drive behaviours."*
- *"Number one is kind of map the journey, make it really clear as to where we are, right now, where we're going, why we're going there as an industry. And what happens if we don't."*
- *"A whole industry, all the professional organisations, if everyone weighed in behind the campaign, with Government backing in terms of the terminology – is that what we need to get the messaging out?"*
- *"It's that kind of promotion... getting everyone on the same page and pushing it."*
- *"The one caveat I would say is when we go to market with this, when we go to do this, we absolutely need the toolset and that's not all there."*
- *"...sustainability. It's a foundational item. It's supposed to bleed into everything we do. Where is that piece here?"*
- *"...it's [the list of deliverables] very wordy, it's not very clear. I think there's detail here which is great, but if I was to shoot down through this list really quickly, two words on each one, what is it, what are we doing? And I think that's not clear. I say that with the greatest of respect."*
- *"I think the sustainability piece is too big and too important to not have there... I think to clarify that this project is trying to kind of implement some kind of data capture piece so that we can make better informed decisions about a more sustainable built environment. This is the way we're going to achieve that, through analysis."*
- *"Build Digital is the enabler."*

Priorities

1. **Campaign for people on the 'why'** → leadership campaign → better-informed clients.
2. **Procurement** – discussion took place around whether educating the client or procurement would go second. After deliberations the group settled on priority two being procurement.
3. **Top-down education of the client** – in order to do this, who the client is needs to be defined, followed by toolkits and a forum within which this will sit.
4. **Toolkits** – these will become the enablers and will include templates, documents or anything that provides guidance. The necessity for simple language was stressed.

NOTE: At the combined close-out session, sustainability was given as Priority 5 for Room 6.

Items suggested as missing from the deliverables:

- EIR;
- strategic tie-in piece in Pillar 1 – the top layer, the 'why';
- leveraging the professional bodies to promote resources; and,
- 'connecting the dots' in how to work with SMEs across the supply chain.

Value of the Build Digital Project to individual organisations:

- alignment and clarity – allowing the industry to realise some of the major benefits of working together;
- awareness;
- client education;
- upskilling; and,
- an enabler of cradle-to-grave building sustainably for the future.

At the event



Paul Butler of Enterprise Ireland and Siobhan Moneley of T.J. O'Connor & Associates discuss at the colloquium.



Denise Tuffy and Gillian Ross of the Construction Industry Federation at the colloquium.



Michael Murphy of BAM and Simon Semaan of Building Design Partnership discuss at the colloquium.



Marguerite Sayers of ESB, PJ Rudden of CSG and Hubert Fitzpatrick of the Construction Industry Federation at the colloquium.



Sean Taylor of Dornan Group, Stephen Lynam of the OGP and Gary Comerford of the SCSl at the colloquium.



Stephen Lynam of the OGP presenting at the colloquium.

The purpose of the colloquium was to better align the Build Digital Project with the needs of the industry and to identify the benefits expected for the industry from the future work of the Project. This report captures the discussions of a cross section of the construction industry on specific questions. Those who participated and others who would have liked to participate may want to provide feedback on the contents of this report. Feedback is welcome, ideally no later than October 13, 2023. Please provide feedback by email to the Project Lead, Robert Moore at Robert.Moore@TUDublin.ie – using 'Feedback on Industry Colloquium Report 2023' in the subject line.





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