Case Study Title: AI Assisted BIM and Digital Delivery Advisory

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Since 1974, we've been providing a construction consultancy service that keeps clients coming back. And for that we have our people to thank. We're dynamic and agile. We adapt to excel for our clients and to advance to an ever-changing world. We're a business on a journey; a business that strives; that is proud to be different. Linesight supports construction projects from 46 offices and hub locations across the Americas, APAC, Europe and the GCC. At Linesight, collaboration is in our DNA, it's the way we work with each other and with our clients. We exist to develop deep relationships based on trust, authenticity and collaboration. We bring a diversity of cultures, ideas and skills together for more innovative outcomes. We proactively build a culture that empowers our people to positively challenge ourselves, our teams, our leadership and our clients, to achieve better project outcomes, better work practices and ultimately a better working environment for all our people to thrive. We are committed to leading and embracing change. We are actively preparing, investing and managing the required change programs needed for continuous evolution in our business to deliver to the future needs of the industry.

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Overview & Background to the Lean Initiative

BIMbot is Linesight's AI-powered knowledge assistant, developed to transform how project teams access, manage, and apply Building Information Modelling data. Inspired by Lean production systems, BIMbot delivers information just-in-time and on-demand, ensuring that the right data is available to the right person at the right moment. By reducing time spent searching for documents, standards, and project information, BIMbot eliminates waste and supports a culture of continuous improvement. The system is designed to be scalable and adaptable, learning from user interaction and feedback to enhance the user experience over time. This reflects the principle of continuous problem-solving, where incremental improvements lead to long-term gains in efficiency and accuracy. In practice, BIMbot supports the application of COBie, Uniclass, and IFC standards, ensuring that information is structured, consistent, and reliable across the asset lifecycle.

Lean Initiative Undertaken – Lean Thinking, Tools, Techniques

The idea for BIMbot emerged as a strategic response to the growing complexity of information management within the business. With digital adoption and BIM maturity expanding across Linesight, the need to access and utilise structured knowledge quickly and efficiently became critical. BIMbot represents a forward-thinking solution to streamline this access, support continuous learning, and reinforce the company's commitment to excellence in BIM implementation.

BIMbot embodies Lean Thinking by providing accurate, referenced answers directly from official Linesight and governmental sources, reinforcing transparency and trust in decision-making. It delivers just-in-time access to BIM-related information, templates, and documentation, eliminating wasted effort and ensuring resources are available precisely when needed. By aligning to ISO 19650 workflows, BIMbot standardises processes and creates traceable, consistent outputs across all deliverables. It supports Kaizen, enabling continuous onboarding, upskilling, and learning for both practitioners and new staff, thereby fostering a culture of ongoing improvement. As a scalable and adaptable digital solution, BIMbot enhances Linesight's BIM advisory and management services while transforming traditional working practices through Heijunka, levelling workloads and freeing staff from repetitive administrative tasks with the help of AI-assisted automation. It eliminates Muda by removing ambiguity and reducing human error, providing precise, structured responses supported by verified data. Inspired by Horensu, BIMbot surfaces live data analytics and insights, enabling quick, clear, and informed decision-making. The bot assists in creating BIM Information Requirements (AIRs, EIRs, BEPs, …), improves collaboration by connecting teams with the right information and contacts in real time, and contributes to measurable time and cost savings by streamlining knowledge access. In doing so, BIMbot mitigates project risks, promotes best practices, and supports clarity of roles and responsibilities at the earliest stages of projects in terms of avoiding disputes, conflict, and arbitration.

Planning and Strategy

The initiative to build BIMbot began earlier this year while researching

the Microsoft Power Platform (Power Apps, Power Automate, Power BI, Power Pages and Copilot Studio) as part of a broader organisational strategy to enhance automation and improve access to critical knowledge resources. The development process was preceded by a dedicated research phase, during which the team explored responses from online AI platforms, assessed internal information bottlenecks, and evaluated both user and client needs across the BIM unit. This informed a focused R&D effort to develop a solution that could intelligently retrieve, interpret, and deliver BIM-related literature with accuracy and speed. BIMbot was thus born out of a deliberate commitment to innovation, combining practical application with exploratory development to transform the way BIM knowledge is accessed and shared within the organisation.

BIMbot Workflow

The operational architecture of BIMbot includes an initial user greeting, followed by a structured selection of options prompting the user to specify their area of research (e.g. General Info, EIR, AIR, implementation policy, or external resources). Based on this selection, BIMbot queries the appropriate resources and returns tailored, referenced results. If necessary, it escalates complex queries via Microsoft Outlook email to the BIM Manager or Specialist. Refer to Figure 1 for BIMbot's Workflow and Figure 2 presenting the automated bot response with options.

Commitment

BIMbot was first introduced internally to the IT department, engaging with developers and programmers at the enterprise level to showcase its potential for scalability and cross-departmental use. Its successful low-code deployment demonstrated that similar bots could support other functions like HR, cost management, and engineering specifications. The BIM unit is both the developer and early adopter of BIMbot, with the long-term goal of offering BIM management as a service to clients. BIMbot plays a strategic role in this offering, providing a competitive edge and potentially being deployed on client projects. Senior management within Linesight has fully endorsed BIMbot, recognising its potential to enhance Linesight's BIM capabilities and drive digital transformation. The initiative aligns with Linesight's vision, providing client representation as a service and supports its broader mission of innovation and ethical, environmentally responsible business. BIMbot is expected to become a core part of the company's digital infrastructure, embedded into its digital delivery guidelines and used as a training reference for internal staff.

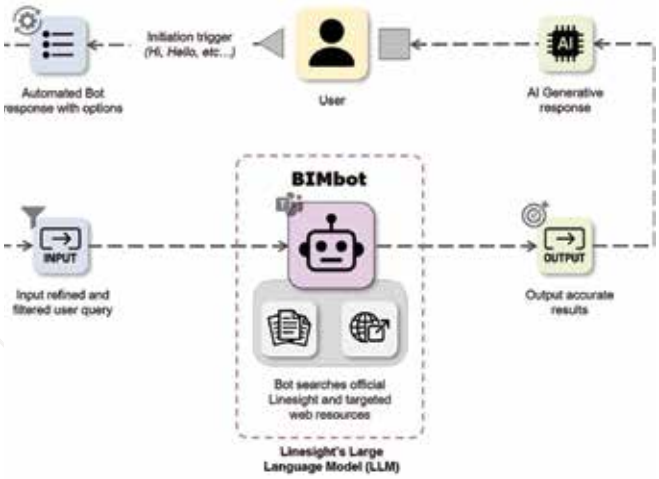

Figure 1: Workflow - BIMbot Operational Architecture

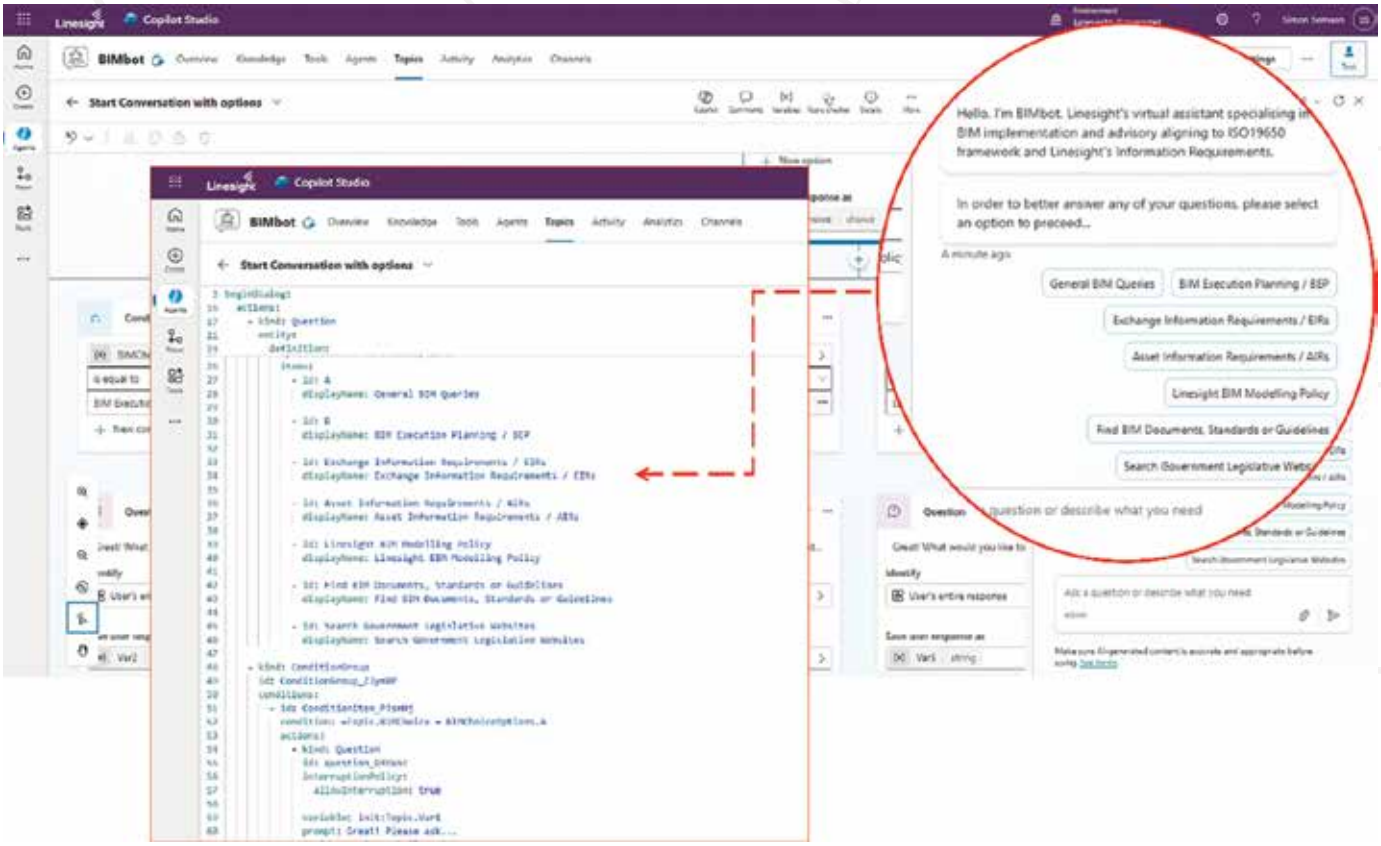

Figure 2: Automated Bot Response with Options

Lean Initiative Improvements & Impact

BIMbot delivers exponential value by transforming how BIM teams access information. Tasks that once took 10 to 15 minutes, such as locating naming conventions in a BIM Execution Plan, are now completed in seconds or even a split second. This boosts productivity and allows teams to focus on strategic tasks and high-impact work. By providing precise, citation-backed answers with live SharePoint links, BIMbot ensures users can instantly verify documents while staying aligned with the latest updates. It reduces the risk of outdated practices and promotes consistency across projects.

Key features include semantic search, context-aware AI responses, and traceable output; all tailored to locate specific content and explain complex concepts (e.g., AIR vs. EIR). It also connects users to verified templates and documentation from both internal sources and official external sites like CWMF, Build Digital 2040, Uniclass, COBie and IFC. As BIMbot prepares for wider rollout, pilot feedback from the BIM unit team members and project directors has been overwhelmingly positive. Refer to Figure 3 below for examples.

Analytics Outcomes

Using the analytics features of Copilot Studio (Analogous to 'Horensu' in Lean terms), we closely monitored initial user interactions with BIMbot over the last 30 days to identify engagement levels, usage patterns, answers quality, user reactions (bot rating) and areas of

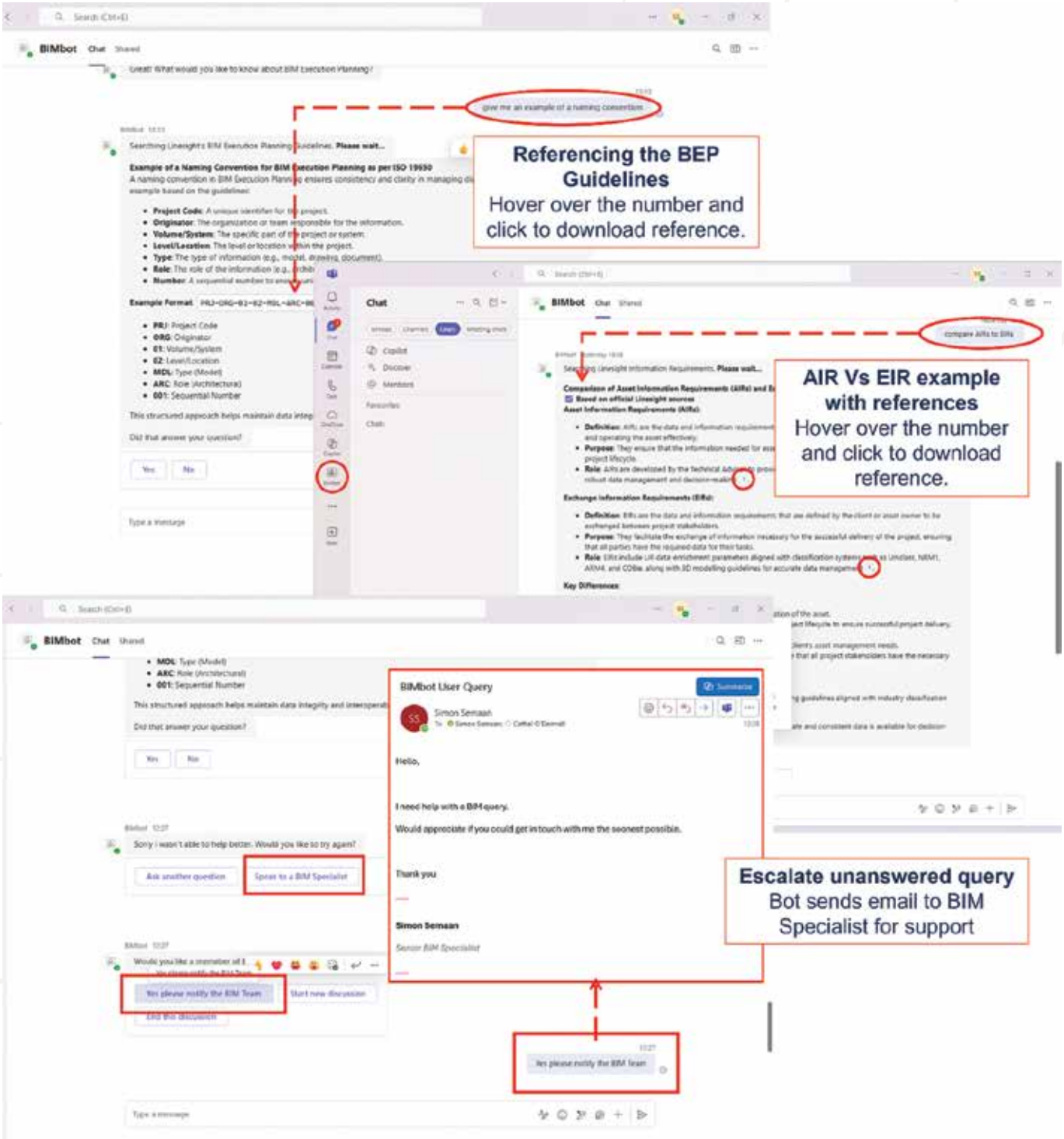

Figure 3: Examples from BIMbot

improvement. These insights enabled continuous refinement of the bot's responses and the optimisation of its underlying knowledge base to better serve real-world project needs.
See Figure 4 below presenting BIMbot Analytics.

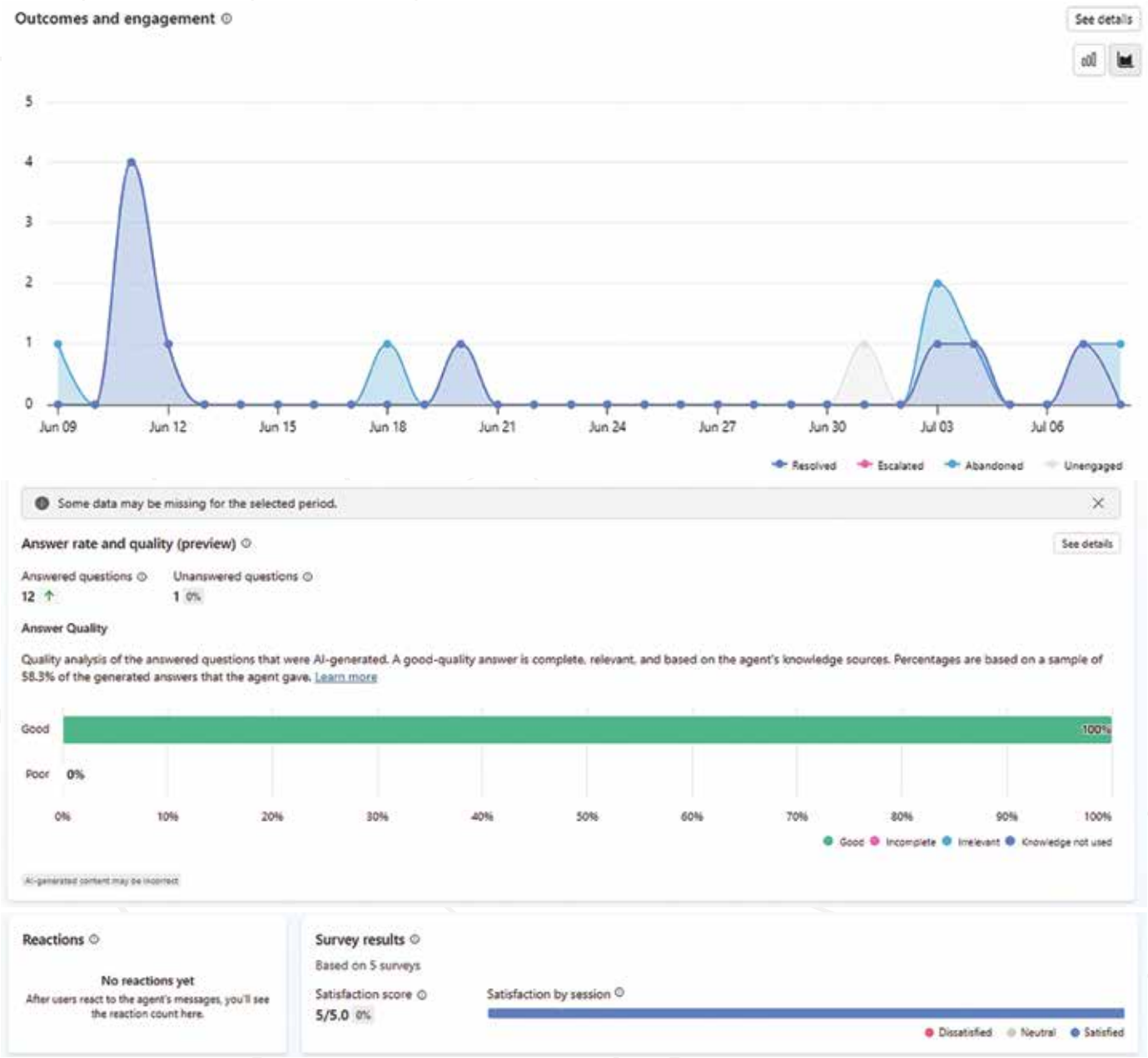

Figure 4: BIMbot Analytics

Summary and Lessons Learned

Key takeaways include the power of collaboration, the importance of time investment, and the need to explore and fully utilise digital tools. Innovation thrives when teams are empowered to experiment, learn, build and continuously improve. BIMbot has already propagated transformative potential within the BIM Unit and promises even greater impact as the company continues its journey toward BIM Level 3 maturity and beyond.

Future Enhancements

Lessons learned from BIMbot has revealed further achievable future enhancements including:

1. Use BIMbot to onboard and train newly recruited staff members on BIM policies and BIM implementation guidelines, ensuring consistency in knowledge transfer.
2. Expand BIMbot's function to serve as an ISO 19650 advisor by linking it to ISO 19650-aligned content and BSI standards for improved compliance and understanding.
3. Enhance BIMbot for accessibility and inclusion by enabling multiple languages, voice recognition and voice-command interaction. This will allow users with disabilities to engage with BIMbot, perform searches, communicate, and even contribute as BIMbot administrators or project support staff.
4. Aid in automated payment application system using BIM management as a core driver and leverage blockchain technologies to facilitate processing contractor submissions and payment approval using BIMbot and minimal human oversight for committed payment options.

Excellence

BIMbot is more than a digital assistant, it is a scalable, lean, and agile solution capable of evolving across multiple disciplines. It stands out for its ease of implementation, accessibility within Microsoft Teams, and ability to empower digital transformation with minimal barriers. Its success is replicable across the industry. With growing interest in AI and BIM integration, BIMbot sets an example that others can follow, demonstrating that innovation can be both practical and transformative. As a next-generation support tool, it enables architects, engineers, and BIM specialists to lead confidently in a data-driven, automated future. The tool reflects the industry's move toward smarter knowledge management, offering real-time value in accuracy, efficiency, and collaboration.

External Engagement

In May 2025, BIMbot was presented during the Summer School Conference hosted by the University of Salford in Manchester, where it received strong interest and positive feedback from a diverse audience of industry professionals, Master's and PhD students, lecturers, and professors.

Shortly after, in July 2025, BIMbot was shortlisted for the 'BIM Initiative of the Year' as recognised by the Irish Construction Industry Awards 2025.

This early exposure highlights BIMbot's potential for broader industry adoption and academic collaboration. Its presence at such forums helps raise awareness of AI-driven BIM support solutions and demonstrates Linesight's leadership in pushing the digital frontier within lean-driven construction and project management.

Data Security and Proprietorship

BIMbot is developed with data security, confidentiality, and proprietorship as foundational priorities. All data accessed and referenced by BIMbot remains securely within Linesight's Microsoft 365 environment. Importantly, BIMbot does not share information with or contribute to Microsoft's foundational Large Language Model (LLM). This ensures strict data ownership remains with Linesight, protection of intellectual property and internal processes and compliance with international data protection standards, including principles aligned with GDPR. By isolating proprietary information from external training models, BIMbot reinforces trust, privacy, and governance for internal stakeholders and clients alike.