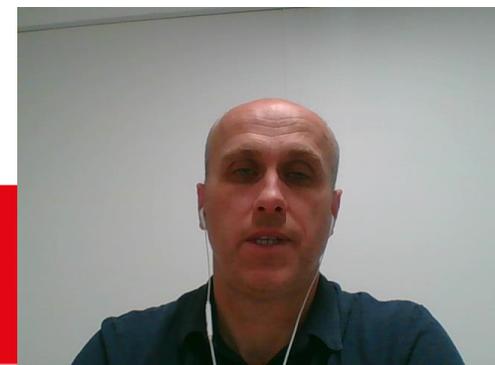


REALITY CAPTURE CONNECTING PROJECT STAKEHOLDERS

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AGENDA

- Lean Construction
- Digital Construction
- Visual Management
- Situational Awareness
- Last Planner System
- Discussion
- Conclusion



Lean Construction

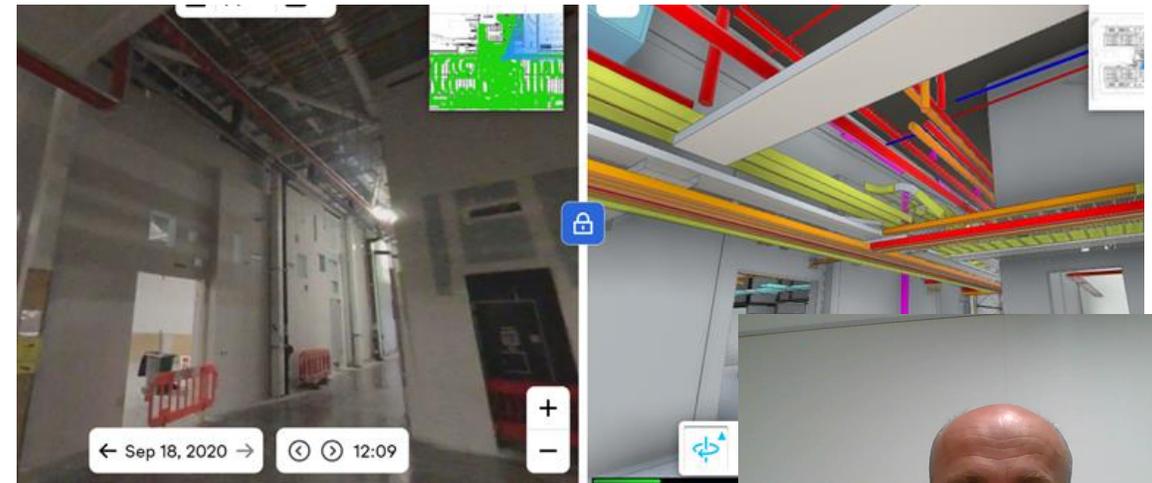
Lean construction is focused on value generation. This is predominately delivered by skilled trade professionals in the field. Process and tools developed using lean thinking have provided a framework for promoting 'Bottom up' management. Integrating site teams with project management improves the predictability of short term planning by exposing risks and identifying opportunities.



Digital Construction

Digital tools is widely used to design and manage construction projects. Digital media is wide ranging from Lasor scanning, sensor technology, image captures and digital platforms to create and manage information.

Adapting digital tools to support lean construction will increase the effectiveness of lean construction. This in turn will improve collaboration meetings and provide more certain outcomes.



Visual Management

Visual Management (VM) has an important role to play in providing clarity and availability of information, especially in face of the complexity of construction projects (Brady et al. 2018)

VM is an important communication tool. Displaying visual information brings greater clarity to discussions particularly when dealing with complex situations encountered on construction projects.

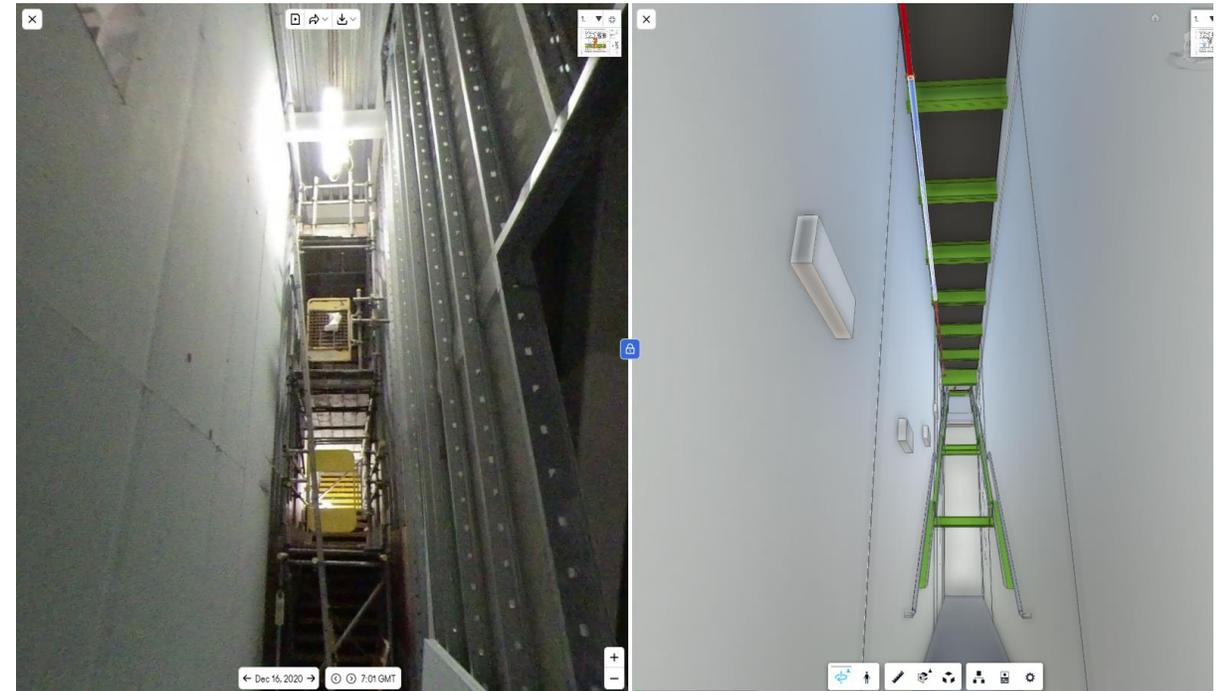


Figure 1. Reality Capture & BIM



Situational Awareness

Communication between stakeholders is inconclusive where quantities and make ready needs are not fully realised and therefore are not raised correctly (Reinbold et al. 2020). Situational awareness can be supported by the collection and access to multiple picture files and access to real time images. If process transparency is successfully implemented, most problems, abnormalities, and types of waste that exist can be recognized to allow remedial measures to be taken (Saurin et al. 2008).

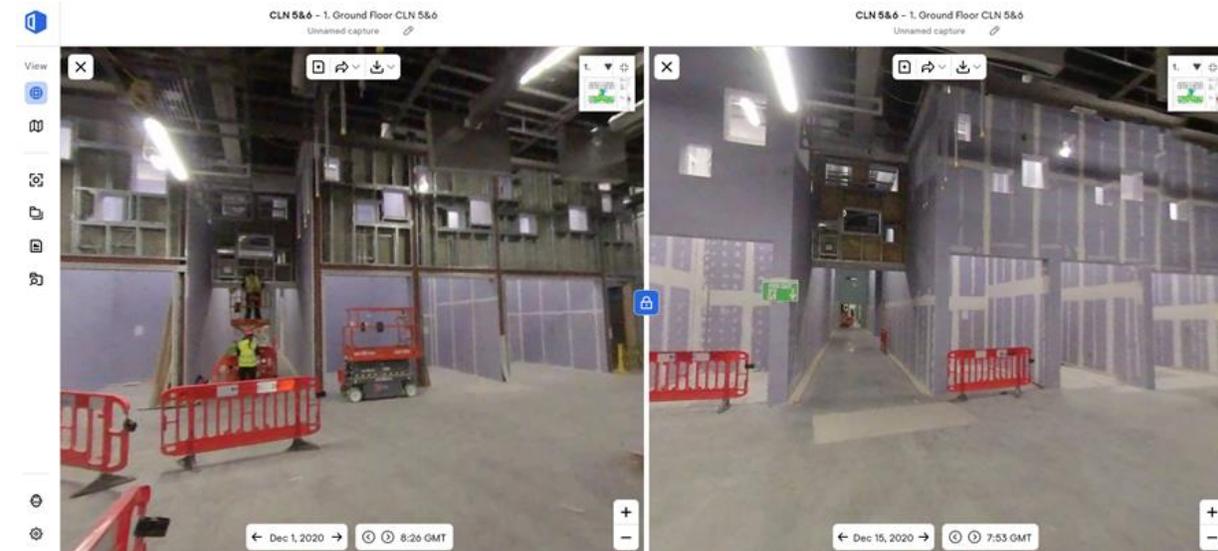


Figure 2. Productivity Review



Last Planner System

Digital platforms were used to produce short term planning and weekly planning activities to support the LPS. RC tools allowed teams to manage the look ahead planning and the review of planned percent complete (PPC). This assisted the improvement of work sequencing and sizing. This assisted cross functional teams in both design and construction to manage the prerequisites to production, ensuring quality and efficiency.

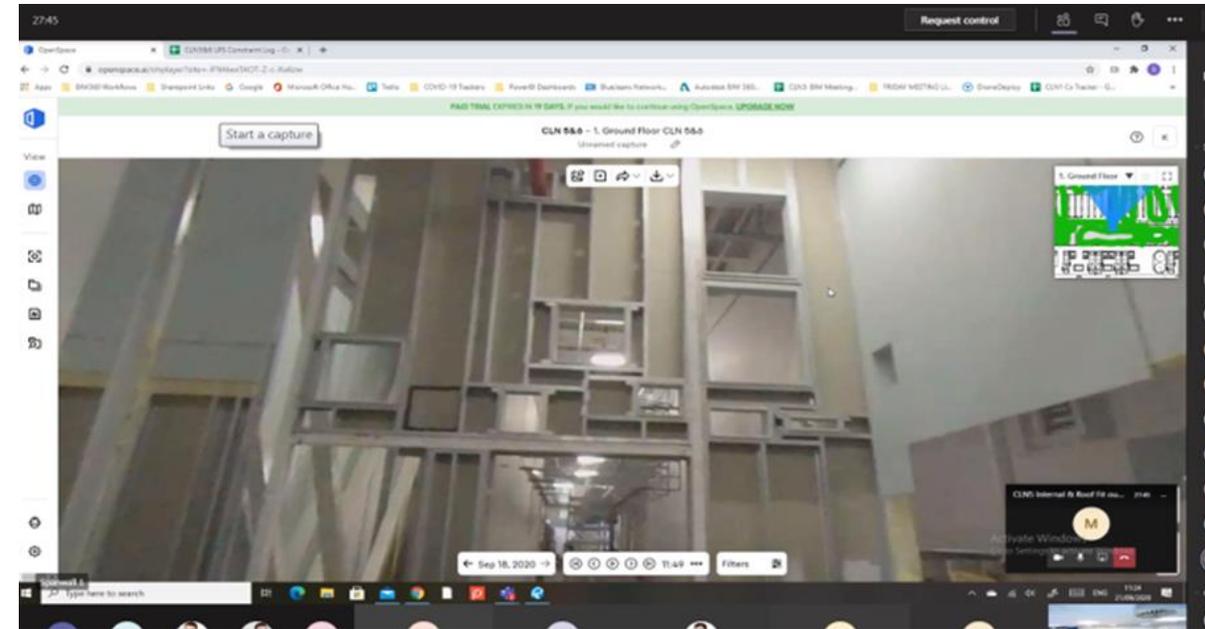


Figure 3. Production Control

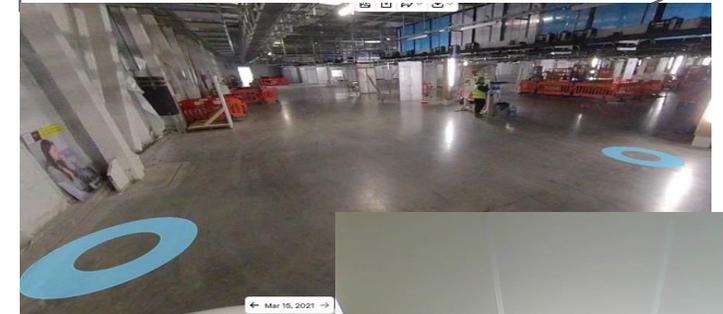
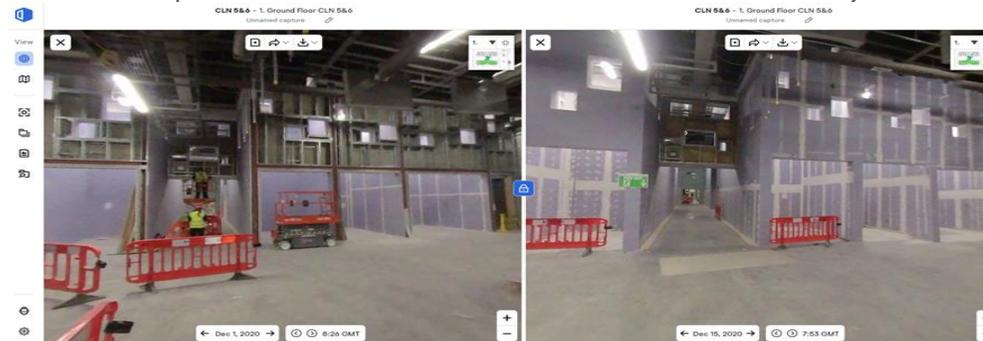


Discussion

Increased volume of images captured and stored effectively. Access to images and navigation through images is more efficient. Shared platform for access to project imagery. Increased value of captured images.

Increased accountability. Measuring the accuracy of commitments. Improved accuracy of Planned Percent Complete reviews. Improved accuracy of look ahead reviews by interrogating and comparing stored images.

Connecting project stakeholders. Comparing progress photographs to Building Information Model & measuring progress can increase the efficiency of communication and remove wastes by focusing on providing value added work.



CONCLUSIONS

Supporting team integration

Remote working teams were successfully integrated into the project with clear communication. This can successfully integrate multi-disciplined and non-site based teams to communicate effectively.

Supporting Co-ordination

Issues can be highlighted to site teams during activity briefings and daily huddles on mobile devices. Greater connectivity between site management and construction teams.

Lean Process

Increased collaboration with improved focus allowed teams to effectively collaborate. The increased transparency improved accountability and allowed teams to discuss and mitigate issues in a collective and less adversarial manner.

Synchronise Digital & Lean

Increase in digitalisation in construction. Synergy with lean construction. Developing a digital strategy, in line with lean methodology, will increase engagement in Lean construction.



THANK YOU!

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