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Presentation outline

• The performance GAP
• The B2S project and its objectives
• The B2S tools for the 21st century construction site
• B2S and BIM
• Conclusions
What is the performance GAP?

How does it occur?
How does it occur?

Design: 10-20%

- Design modelling naïve
- Assumed perfect controls
How does it occur?

Construction: 10-30%

- Value engineering changes
- Quality of construction
How does it occur?

Commissioning: 15-30%

- Commissioning rushed or incomplete
- BMS controls not working as intended
How does it occur?

**Operation: 30-120%**

- Un manageable complexity of systems
  - User over-ride of BMS
  - Poor energy management
Built2Spec = Built to Specifications

“Self-Inspection, 3D Modelling, Management and Quality- Check Tools for the 21st Century Construction Worksite”

Funded by the European Union’s Horizon 2020 Research and Innovation programme

Coordinator: Nobatek
Start: January 2015
Duration: 4 years

20 European partners (8 EU countries):
Universities, research institutions and technological centers, industrials and SMEs from France, Germany, Spain, Ireland, Netherlands, Italy, Switzerland and Great Britain
TOOLS FOR THE 21ST CENTURY CONSTRUCTION WORKSITE
Virtual Construction Management Platform

Construction process information flow (roles, approvals and responsibilities)

Quality checks and self inspection tools

Web Portal

Evidence Of Use App
Schedule a job (who, what, where and when)

Assign responsibility and require evidence of good work

Connected to:
• Back Office
• Supply Chain
• Residents

Live Budget Dashboards
Mobile Field Apps Linked Back To The Platform
B2S – Innovative tools

- Cheaper
- Easier
- More portable
- Faster to apply
Air Tightness

Air Pulse Test at operating conditions
It takes only few seconds
Thermal imaging tools

From qualitative to quantitative assessment - measure U value
(inverse modeling)
Acoustic and Indoor Air Quality

Portable Omnidirectional Parametric Loudspeaker (OPL)

Portable Indoor Air Quality Test device
3D imagery tools

Point cloud to BIM
3D scanning
Google tango
Drones
BIM based work flow

Create task  Get info needed  Add extra info  Perform task  Store/view results

VCMP

Tool / database
Conclusions

• The performance GAP is quite relevant and deserves attention in all phases of the BLC
• The B2S project is integrating SOA solutions as well as developing innovative ones to empower on site inspection and quality assurance
• A BIM centered workflow together with geo referencing can be very effective,
• When BIM is not available it can be generated leveraging point clouds (drone and 3D scanning)
Thank you!

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