



Robotic Inspection - BIM Collaboration

August 2014 Update

Building Information Modelling (BIM) Phase 2 is funded through the Network Innovation Allowance (NIA) scheme. Phase 2 gained funding early August 2014.

A primary objective is to provide Capital Delivery with the necessary processes and tools to deploy BIM on all Capital Delivery projects from April 2015.

BIM phase 1 recommendations are being embedded on Feeder 9 as a live demonstration. Several best practices have been realised, particularly on Formal Process Safety Assessments (FPSA's) and design reviews.

BIM phase 1 recommended the wide scale deployment of laser scanning surveys due to the cost saving, quality enhancements and reduction in site visits to a potentially hazardous environment. To enable this, Jacobs have produced a terrestrial laser scanning specification for National Grid, suitable for both gas and electricity installations. This specification has been subjected to peer review by laser scanning providers, capturing industry good practice.

Phase 2 has also demonstrated mobile laser scanning through Sterling Geo. Similar to Google Streetview, but with an accurate measuring facility, this process costs approximately a third of the traditional traffic management assessments, can cover 100km per day and does not require persons standing on the highway. The outputs can also be used as part of the pre construction condition assessment survey.



Mobile Lidar - Condition Assessment

Stakeholder Engagement and Collaborative Working

1. Demonstrating BIM at the Capital Delivery EXPO on 9th and 10th September at the Ricoh Arena in Coventry.
2. Collaborative engagement with other innovation (NIA/NIC) schemes, ie. renewables and robotic inspection tools.
3. Collaborative working and adaption of BIM techniques on the No.9 Feeder project.
4. Collaborative working with ERP3 Compressor FEED studies, sharing BIM bank models.
5. Presentation to IGEM North East Region arranged for 16th October 2014.
6. Presentation at Low Carbon Network + Innovation Conference, Aberdeen 22nd October.

August Key Outputs

1. Developed draft specification for terrestrial laser scanning of installations.
2. Collaborative working with HSE to develop the 13 steps to "BIM for Regulations".
3. Best practice submitted for Mobile Lidar to undertake traffic management plans and condition assessments.
4. Engineering alert issued for 3D hazardous area assessments fully in accordance with IGEM/SR/25 Edition 2.
5. Lighting modelling for temporary construction compound capable of supporting planning consent.

Monthly Lookahead - September 2014

1. Demonstration of parametric modelling to GTAM for Minimum Offtake Connection
2. Demonstration of Virtual Reality technology (oculus rift) for training using engineering 3D models.
3. Issue draft BIM scope document (Employers Information Requirements) for comment - PAS 1192:2 compliance.
4. Publicise BIM Bank concept through a Q & A leaflet.
5. Continued development of 3D hazardous areas with Safety Engineering.



3D Modelling - BIM Bank Components



Engineering Alert - 3D Hazardous Areas