

# Progressive assurance with eviFile technologies

Case Study  
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## The Company

Primarily known as a Tier 1 main contractor, Balfour Beatty is a UK-based multinational infrastructure group providing construction and related services predominantly in the UK and north America, but with developing businesses in Australasia, the Middle East and southeast Asia.

*'eviFile has streamlined and simplified our processes, providing real-time data and the insight to make actionable decisions, reduce risk and deliver a higher quality project'*

Peter Webb  
Director of Electrification Delivery  
Balfour Beatty, Rail business

## The Challenge

Recognising the civil engineering sector's historic under-investment in digital technologies, Balfour Beatty has been working to differentiate itself from its rivals through its investments in information and knowledge sharing, in collaborative working, and in data capture. In particular, it has been exploiting mobile site-based technologies to speed up, reduce the cost and improve the quality of information gathered during detailed project working processes. By routinely gathering more reliable and more complete site data, Balfour Beatty can enable more timely and informed decision-making based on secure and auditable information. It can also reassure its customers and industry regulators that mission-critical records about physical assets and related processes are comprehensive, complete and incorruptible.

Since the early 2000s, Balfour Beatty has invested in technologies to standardise workflows across a wide range of procedures, including: requests for information/technical queries (RFIs/TQs), non-conformance reporting, health and safety (including risk assessment and method statements, RAMS), risk capture, materials testing and approvals, permits, and 'snagging' (including defective or outstanding works lists, DOWLs).

Wherever possible, the business has sought to develop best practice approaches that are transferrable across the group and across customer market sectors. Inspection test plans (requiring high levels of progressive assurance) are a powerful example of this. Having used site data capture technologies to support highway contracts, Balfour Beatty wanted to apply an even more rigorous approach to support its workflows on railway electrification projects – rail being a highly risk-averse sector which had historically been very conservative in relation to technology applications.

For Network Rail, Balfour Beatty was tasked with completing an overhead line electrification (OLE) project between Bristol and Cardiff. The Greater West (TGW) electrification programme required the design and installation of piled foundations, masts, booms, portals, steel and wiring across some 40 miles (65km) of track. To keep the programme on track, Balfour Beatty wanted to reduce delays in field data capture, speed up transmission of quality information to field engineers and managers, improve reporting on its quality assurance processes, and provide high quality data for immediate and future use by the client.

### The Solution

For all Balfour Beatty's rail teams, procedural compliance is vital. Since August 2017 the TGW team have worked with Leeds-based IDS to deploy a secure mobile data capture system called eviFile for digital progressive assurance. Authorised users login to the cloud-based platform via standard tablets or smartphones, and can use these devices' inbuilt cameras and GPS capabilities to record inspection and survey information. Every use of the system is securely captured, and time- and date-stamped along with project and user details, geographical location and data about the device's orientation.

Delivering new rail assets, or updating existing ones, can involve a sequence of ten or more activities, each of which is subject to a quality inspection and must be signed-off prior to the next one starting. Traditionally, contractors quickly accumulated large volumes of paperwork documenting these processes. Digital progressive assurance, by contrast, automatically compiles a structured and searchable electronic audit trail detailing all work undertaken. Vitally, site progress can be shared in real-time with the client and other key stakeholders, enabling rapid inspection and sign-off in the field using the geo-located eviFile digital containers.

For the TGW team, the eviFile system was configured to support specific Balfour Beatty detailed reporting processes, notably quality referrals (QRs). Briefly, the system encourages QRs to be fully populated with all obligatory information including the data about the specific structures

### Benefits

- Higher levels of data consistency and quality
- Progressive completion of evidence files, leading to more reliable data capture and storage of evidence
- Auditable, secure time, date and location-stamped and tamper proof compliance information
- Improved control over data access
- Richer, more accurate, real time data about project assets, meaning better informed decision making
- Better visibility of volume of quality referrals and programme impacts, and of trends, to help drive continuous improvement
- More efficient client information handover and greater client satisfaction

or assets and the relevant stage in the inspection test programme or checklist. The QR is then securely associated with the eviFile container holding its written, photographic, positioning and other evidential metadata. Completed QRs are then automatically forwarded to the relevant field engineer or manager for authorisation and/or action. Tasks are tracked using standard Balfour Beatty statuses (work in, allocated, completed, and approved).

As well as ensuring timely and targeted transmission of QRs to recipients, the eviFile platform also provided detailed dashboard reports that provided 'at-a-glance' views regarding the close-out of QR processes, as well as detailed maps showing the location and status of every reported QR issue. The highly granular reporting also allows breakdown to individual areas, construction units and wire runs – laborious compilation of 1000s of paper records has been replaced by automated generation of detailed electronic reports.

The eviFile system is also integrated with other systems used by Balfour Beatty. Completed inspection test plans are automatically generated and uploaded to the common data environment that supports the TGW project (Balfour Beatty uses GroupBC's CDE). These plans also meet the output requirements, including asset ID numbering, stipulated by client Network Rail for inclusion in its Bentley enterprise bridge (eB) hub.

The strong compliance capabilities of eviFile also earned plaudits when Balfour Beatty information management regime was audited. Feedback included: "The eviFile system is an amazing development," and "I'm extremely impressed with the process it delivers."

*'It's a huge increase in productivity not having to chase data'*

Greg Smith OLE Field Engineering Manager  
Balfour Beatty, Rail business



**Auditable, secure  
information**



**Greater client  
satisfaction**



**More accurate,  
real time data**