



21017

Utilising drones to conduct pre and post blast surveys.

**EPC United Kingdom PLC > Venture Crescent > Alfreton > Derbyshire****2****3****4****5****6**

DESCRIPTION

When providing drilling and blasting services, EPC UK's shotfirers must accurately calculate the position of the boreholes and rock faces. This information is then used to determine the safe quantity of explosives which can be used in each hole.

Prior to EPC UK utilising drones to conduct pre and post blast surveys, all surveying was performed using laser scanners set-up on tripods at a number of locations, with additional personnel required to 'spot in' the holes. By implementing drone technology within its operations, EPC UK has eliminated or reduced slips, trips and falls, potential contact with moving plant machinery, the risk of falling objects, and the need for manual handling of the heavy survey equipment.

The drone operators can now conduct the survey from a safe position in the quarry, away from mobile plant and avoiding the need to carry equipment over uneven and potentially unstable ground in different sections of the quarry. The data gathered can then be fed into a computer system that creates accurate models of the face being surveyed.

EPC-UK now has 20 active drone operators completing operational tasks on a daily/weekly basis nationwide, reducing the need for personnel to put themselves in a potentially hazardous situation.

Pilot training is an integral part of EPC's project to introduce the drones into the business. All drone pilots are qualified to the required UK Civil Aviation Authority standard for the requisite tasks. Training is provided by an external company, Drone Pilot Academy, to ensure that all pilots have the required practical and theoretical knowledge. Additionally, all drone pilots are expected to attain a Flyer ID from the UK Civil Aviation Authority before undertaking any practical training.

EPC have introduced a management control system to ensure all employees comply with the company's operational authorisation and have an audit process to confirm this compliance is achieved.

The data from the drone surveying is linked to EPC's blast design software, helping to ensure more effective and accurate blasting.

BENEFITS

- Removed employees from hazardous environments
- Reduced risks of slips, trips and falls
- Reduced exposure to site traffic
- Reduced need to work at height
- Reduced exposure to falling objects

- Improve accuracy of data and face models
- Reduce scanning/surveying time
- More effective blasting
- Safer downstream processes
- Workforce have gained new skills and expertise.

TRANSFERABILITY AND DEVELOPMENT

- EPC has shared its drone technology updates and implementations with the industry, posting on social media, delivering talks, and updating quarry managers with relevant information.
- EPC plans to implement the drone technology across all available UK sites, eliminating the requirement for traditional surveying activities in as many locations as possible.
- The concept of using drones for surveying is becoming increasingly popular throughout many sectors, the technology EPC has developed is already being adopted for use at other sites and is gradually being rolled-out by other companies to advance their surveying.

**Drone pilot****Computer profiling model**

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