

Bosty Lane Limestone Mine Infilling (Daw End Mines).

Project Profile

Client: Walsall MBC/English Partnerships

Designer: High Point Rendel

Date: 2003/4

Value: £1.8m



Emergency Infilling of a high risk part of the Daw End Limestone Mines system in Aldridge due to collapse of workings which had closed Bosty Lane and threatened adjacent property. The workings were between 30 – 40m bgl and were flooded.

We proposed a number of innovative solutions with our tender submission and following a quality/price assessment we were appointed as preferred contractor to assist in developing the detailed design. The work included:

- Construction of 130 lin m of stone infill barrier to the 7m high open section of mine, installed on a 20m offset line parallel to Bosty Lane. The barrier stone was installed using an innovative auger fed placement and distribution system based on a dual head drill rig, which was developed in-house. The system allowed a 65% reduction in the number of drill holes required for barrier construction thus giving a considerable time and cost saving to the client.
- Infilling of open mine areas with pumped bulk sand infill (30,000T) mixed using a pug mill continuous mixer and pumped with trailer mounted concrete pumps.
- Grouting of collapsed and partially collapsed workings with 20:1 sand/cement grout (15,000T) on a 20m primary and 5m secondary grid.
- Drilling in excess of 600 infill and grout holes to workings.
- The work required access to all affected properties to undertake drilling and grouting work and extensive use was made of specialist drilling rigs with clean drilling methods.
- Maximum use was also made of angled drilling with multiple holes drilled from key location thus minimising working area requirements and the impact to the public.
- Down hole ultrasonic mine cavity surveys to assess the condition of the mine and monitor barrier construction and infilling.
- Pre and post condition property surveys as well as surface monitoring by precise levelling during the works, water level and infill monitoring.
- The office and mixing compound were established adjacent to the treatment area with full surfacing, container surround for noise and dust mitigation as well as material storage and containment. Wheelwash and water spray facilities were also in place.
- Reinstatements were undertaken immediately working areas were vacated to the agreement and satisfaction of the residents.
- A proactive customer care system was established with public meetings, residents association meetings, regular public liaison and information provision with an open door policy operated by site staff.

The scheme was successfully completed using partnering and teamworking principles and the project received commendations from Walsall Council Chief Executive and Residents Committee. Walsall Council have also used the scheme as part of a Local Authority Awards Submission emphasising the successful partnering achieved.

