

# Lawley Village, Telford, Phase 9 Mine Workings Stabilisation

## Project Profile

**Client:** Barratt Homes

**Designer:** GRM

**Value:** £425k



Treatment of mine workings on a 3.6ha former brownfield site in Lawley, Telford which is the 9th phase of a major residential development that has been ongoing since 2007. This was the 3rd phase that we have been involved in mine workings treatment with another phase due to commence later in 2020. Lawley village has largely been developed by The Ironstone Developer Group, consisting of Barratt Homes, Persimmon Homes and Taylor Wimpey, the housing layout is shown on the drawing below.

The site originally contained the Prince's End Opencast Coal mine which began in 1967 and extracted several coal seams from the central and southern areas of the site. Earlier dated plans indicate a number of mineshafts and wells, all of which were excavated out with the opencast. The seams treated included: Little Flint, Best Randle and Clod which were present below the opencast but dipping steeply in and out of influence and also the Two Foot, Clunch and New Mine which were extracted by the opencast but present in other areas of the site.

The treatment works carried out during this phase are as follows:

- Primary boreholes – 697
- Secondary and Tertiary boreholes – 223
- Total meters drilled –24,119m
- Drilling depths were up to 30m, with multiple seam treatment in areas not affected by historic opencast operations.
- Deep opencast backfill across large areas of the site required casing to depths in excess of 20m

Drilling and grouting treatment was generally carried out on a primary 6.0m grid with secondary centre holes instructed depending on primary hole grout take giving an effective 4.25m treatment grid over most of the treatment area. Tertiary holes were instructed based on primary and secondary grout takes and a number of test holes were also completed to validate the treatment works.

Drilling work was carried out using up to 6no Casagrande C6 and Klemm KR 901 rotary percussive geotechnical drilling rigs. Drill holes were cased with 101mm OD rotary percussive steel casing which is sealed into rock head followed by drilling a 75mm open hole to the workings to facilitate insertion of grout injection tubes.

Water flush drilling was used as required by the Coal Authority/HSE guidance on Managing the Risk of Hazardous Gases in order to prevent the possibility of any mine gas migration due to the treatment works.

All drilling, grout mixing, pumping and ancillary plant was resourced from our specialist in-house plant fleet based at our West Bromwich depot.

