



NKC Geotech Ltd

engineering geologist specialising in the investigation and treatment of disused mineworkings

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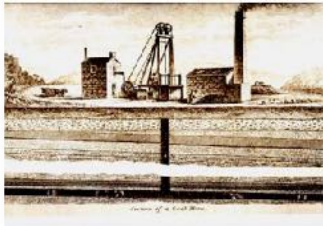
Coal Mining Risk Assessment



Land at rear of Braemar, Hill Street, Cefn Mawr

Blueprint
Office 3K4
Redwither Business Tower
Wrexham
LL13 9XT

2426
17 April 2024



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Site

A site for a proposed dwelling in the rear garden of Braemar, Hill Street, Cefn Mawr.

Risk Assessment by

Neil Catlow B.Sc F.G.S Engineering geologist.

Summary of relevant mining information

CIRIA Special Publication C758D 'Abandoned Mineworkings Manual.

Coal Authority Report 51003414695001 dated 28th March 2024.

Ordnance Survey 1:2500 First Edition 1875.

Geological Survey 1:10560 plans dated 1925.

Nkc Geotech Ltd investigations with relevance to this site:

9026 Former Gas Works, Cefn Mawr

9102. Cefn Industrial Estate

9141 Queen Street, Cefn Mawr

9418 Dolydd Road, Cefn Mawr

0204 Russell Street, Cefn Mawr

Assessment of risk that coal mining poses to the proposed development

Geology

The site lies on Carboniferous Bettisfield Formation rocks that form the Wrexham Coalfield, dipping to the east at 1 in 8. These rocks are predominantly shales and sandstones laid down in a tropical delta environment when Europe lay on the equator as part of the continent of Pangea between 310M and 320M years ago. The Bettisfield Formation strata varies between 230m and 520m in thickness depending on locality and contains seams of coal upto 4.5m in thickness at vertical intervals typically varying from 4.0m to 20.0m. Those coal seams which were of economic importance were given an identity when they were of sufficient quality and thickness to justify extraction by mining. Typical names for local coal seams reflect primarily on quality and thickness, for example Main Coal, Yard Coal and Sulphur Coal.

The Coal Authority Report states that the site is underlain at shallow depth by a coal seam of workable thickness known locally as the Sulphur Coal. This seam outcrops under the site and dips east at 1 in 8. My work on previous sites in Cefn has shown that a deeper seam known locally as the Cefn Coal lies 14m below the Sulphur Coal.

Past underground coal mining

Coal mining in Cefn is recorded in the 17th Century, most probably in the Main Coal north of the site between Cefn and Acrefair, 1500m north of the site, when the area was 'Waste', ie common land. Industrial mining deeper than the outcrop workings and simple bell pits of the 'cole farms' in the Wastes dates from the 18th century.

There are plans of past mining activity under the site of workings deeper than 100m and last abandoned in 1867, pre-dating the 1887 Coal Mine Regulations which required colliery owners to keep and preserve accurate plans of their workings. The coal seams principally worked in the 19th century supplied the New British Iron Company furnaces at Acrefair, and horse drawn tramways connected the collieries.

The deepest worked coal seam is the Ruabon Yard Coal at 211m below the site, but there are six shallower coal seams known to have been mined here. The coal seams between the Sulphur Coal and the Ruabon Yard Coal are, in descending order, the Two Yard Coal, Quaker Coal, and Main Coal. The shallowest mined seam for which there are records is the Two Yard Coal, 1.8m thick, at a depth of 101m.



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Present underground coal workings

There is no current coal mining within 20km of the site.

Future underground coal workings

There are no current coal mining proposals within 20km of the site.

Recorded mine entries on or within 20m of the site boundary

There are no recorded mine entries within 20m of the site but there are 2 recorded shafts within 100m. The nearest recorded shaft is 327342-329 in the car park, located 100m north of the, and sunk to the Cefn Coal at a depth of 52m. I investigated and capped this shaft in 1980 for Wrexham Maelor Council.

Coal mining geology

The Coal Authority have no records of any damage caused by geological faults.

Past opencast mining

There are no former opencast coal mining sites within 200m of the site.

Present opencast mining

There are no current opencast coal mining sites within 200m of the site.

Future opencast mining

There are no proposed opencast coal mining sites within 800m of the site.

Mine gas emissions

There are no recorded mine gas emissions within the site boundary.

Surface hazards

There are no recorded remedial works being carried out by the Coal Authority on the site nor any subsidence claims.

Further information

The risk to any proposed development here is subsidence caused by the collapse of shallow mining tunnels where the Cefn Coal or the Sulphur Coal lies at depths shallower than 20m.

Rockhead will lie close to the surface and an intrusive investigation will be required to prove the depth or absence of this coal seams. An investigation comprising three holes to 30m will be required.

There are no recorded mine entries requiring investigation.

For Nkc Geotech Ltd

Neil Catlow, B.Sc, F.G.S



Geological plan of the locality
Scale 1:1000 @ A4

