



NKC Geotech Ltd

engineering geologist specialising in the investigation and treatment of disused mineworkings

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Coal Mining Risk Assessment



Chapel Street, Acrefair

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2431/1
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Site

Vacant development site on the site of a former chapel in Chapel Street, Acrefair.

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 51003444078001 dated 15 August 2024

Ordnance Survey 1:2500 First Edition 1875

Geological Survey 1:10560 plans

Nkc Geotech Ltd reports:

1438 Air Products Social Club May 2014

1418 Former Air Products, February 2014

0704 Air Products Shop 3 January 2007

0547 Air Products Shop 4 September 2005

Assessment of risk that coal mining poses to the proposed development

Past underground coal mining

Coal and associated iron ore mining in Acrefair is recorded in 1677 when the area was part of the Ruabon 'waste' (ie common land) and mineral rights belonged to the Plaskynaston Estate. Industrial mining deeper than the outcrop workings and simple bell pits of the 'coal farms' in the 'waste' dates from the 18th century when there are descriptions of dangerous open shafts in Cefn and Acrefair. The last underground coal mining in Acrefair was the Trevor Fireclay Works of J C Edwards working the Nant Coal and abandoned in 1912.

There are records of past mining directly under the site from mines leased from the Plaskynaston Estate in five seams of coal. These workings are, in descending order:

Stone Coal at 41m abandoned 1860

Firedamp Coal at 46m abandoned 1880

Nant Coal at 54m abandoned 1912

Lower Yard Coal at 59m abandoned 1862

Wall & Bench Coal at 68m abandoned 1860

Until 1887 there was no statutory requirement to make and preserve plans of mineworkings, and mining activity prior to 1887 in shallow coal seams is consequently predominantly unrecorded. There are no plans of any workings in two coal seams known locally as the Upper Yard Coal and the Red Coal which are known from shaft sections to lie above the Stone Coal in Acrefair.

The Upper Yard Coal outcrops north-south 50m west of the site, the Red Coal 70m west of the site. The strata dips east at approximately 1 in 8.

Previous investigations by myself and others has confirmed that the Upper Yard and the Stone Coal have been extensively mined in the past.

**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

The Coal Authority have records of four mine entries on or within 20m of the site. The nearest recorded shaft is 327343-317, an Ordnance Survey position from 1875, close to the southern side boundary.

Shaft 327343-386 is visible on the site as a depression fenced in 1971 by Wrexham Maelor Borough Council when public toilets were constructed on Llangollen Road. The shaft lining was not exposed and the location will not be precise.

Shaft 327343-200 lies off the site to the north, the source for the shaft position being a Plaskynaston Estate mineplan of 1848.

Shaft 327343-564 was searched for in 2006 and not found, the source plan for the shaft position is a Plaskynaston Estate mineplan.

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.

Faults

There are no faults shown on the published Geological Survey.

Surface hazards

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



Mitigation measures

The site is steeply sloping and natural ground at road level is covered by colliery spoil heaps which increase rapidly in thickness eastwards. There would have to be deep excavations to expose natural ground.

The two mineshafts have Coal Authority locations within 5.0m of the site boundary and the Coal Authority will require Zones of Influence (Zol) to be calculated as if the shafts are located immediately adjacent to the site boundary. The Zol is calculated as 'depth to rockhead + assumed shaft radius' which on this site will be in the range of at least 6.5m (5m + 1.5m) to perhaps 9.5m. The true Zol can only be determined by drilling to prove rockhead at locations closest to the CA shaft positions. The CA will object to any construction within the Zol.

An intrusive investigation of the site is also required to determine the geology and prove the depth or absence of shallow mineworkings in the Upper Yard Coal and the Red Coal. The underlying Stone Coal and Nant Coal will very probably be too deep to affect surface stability but the depth to these seams has to be proved by drilling a minimum of 4 holes to 30m depth.

Coal Authority Permit

A site specific Coal Authority Permit will be required before any intrusive investigation work is carried out.

For Nkc Geotech Ltd

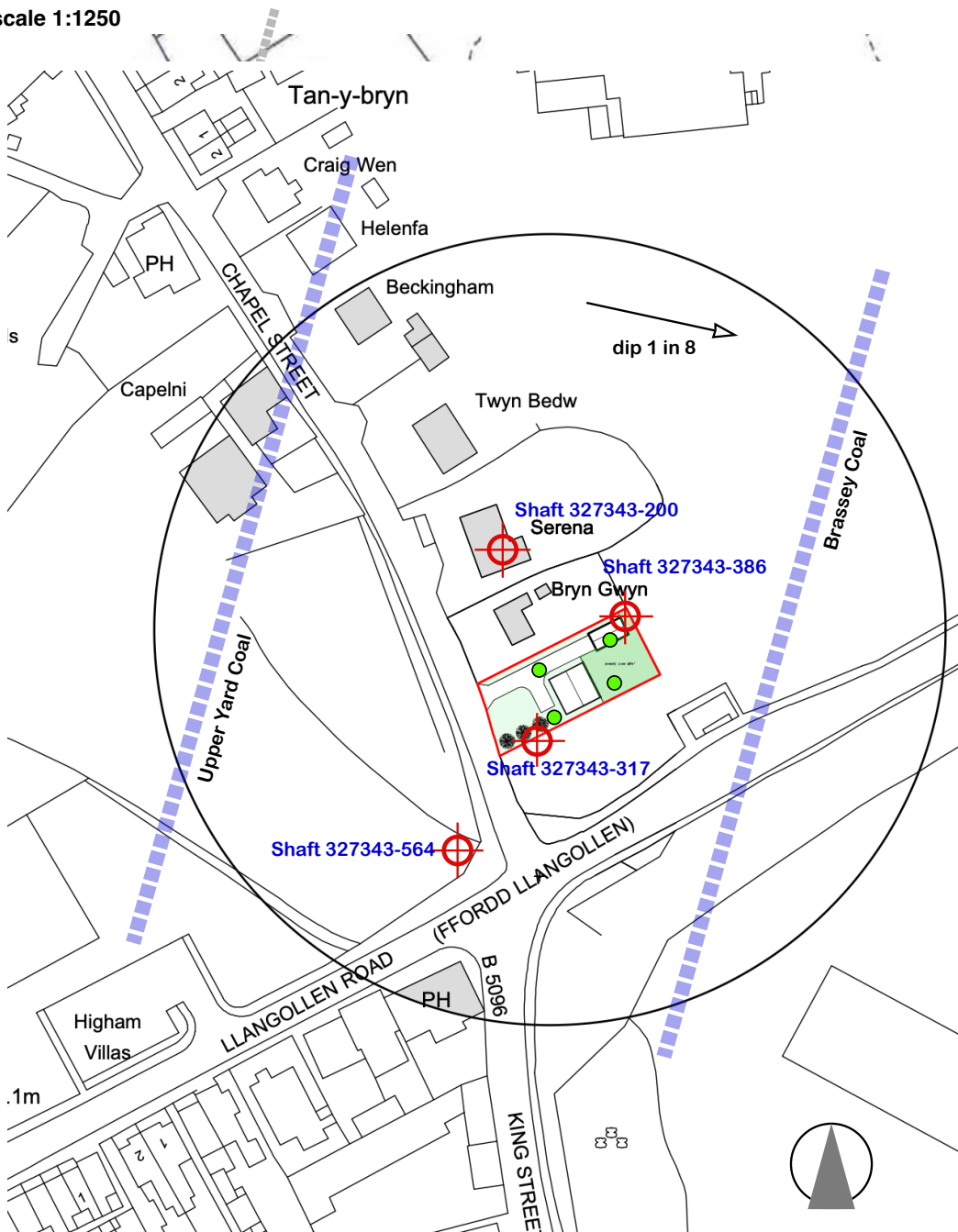
Neil Catlow, B.Sc, F.G.S



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Site Plan

scale 1:1250



● proposed boreholes