



Geotechnical &
Environmental
Consultants

Our ref: 43207/BP

2nd October 2024

HSSP Architects
Pera Business Park
Nottingham Road
Melton Mowbray
Leics
LE13 0PB

For the attention of Mark Geraghty

Dear Mark

Re: 223 Station Road, Earl Shilton, Leicestershire – Ground Gas Protection Validation Works

Further to your email and our subsequent conversation yesterday we understand that GeoDyne Limited (GeoDyne) has been appointed to undertake ground gas protection validation works at the above site.

PROJECT UNDERSTANDING

GeoDyne Limited have previously produced the following report for the above site:

- GeoDyne report: 'Station Road, Earl Shilton - Combined Phase I and Phase II Exploratory Investigation For Colin Burton Builders Ltd' Report No. 43207 dated 5th February 2024.
- GeoDyne letter report 'Station Road, Earl Shilton (Cable Percussion Works)' Reference 43207/BP, Dated 1st August 2024.

Our intrusive site investigation works identified the presence of a maximum carbon dioxide concentration of 6.9% by volume and a maximum flow rate of 0.2L/h, with concentrations of carbon dioxide exceeding 5% on four of the six monitoring visits undertaken. Based on the guidance in BS8485:2015+A1:2019 (BS8485) the site was classified as Characteristic Situation **CS2**.

We understand that the Client proposes to install a ground gas protection system within the proposed dwellings and that the Local Planning Authority, require '*full details of the gas protection measures should be submitted and demonstrating that they will correspond to Characteristics Situation CS2*'.

We understand that a membrane installer has not yet been appointed; we would recommend the appointment of a suitably qualified professional installer. The installer must be appointed by the Client and be independent of the validator.

GROUND GAS PROTECTION MEASURES

Ground gas protection measures should be designed and implemented in accordance with BS8485.

BS8485 sets out a points-based system for determining the level of protection required and allocating a score to the protection measures employed to assess whether they provide an adequate level of protection.



Registered Number:
4286419 England & Wales
Registered Office:
Clarendon House, Clarendon Park
Clumber Avenue, Nottingham NG5 1AH

GeoDyne Limited
Clarendon House, Clarendon Park
Nottingham, NG5 1AH
Tel: 0115 962 0001 email: info@geodyne.co.uk

The development comprises residential properties (classified as **Building Type A**). With the site classified as Characteristic Situation **CS2**, the properties within the development require ground gas protection measures to achieve a minimum of **3.5** points.

The installed measures must achieve 3.5 points from at least TWO of the following three components:

- Ventilation measures
- Structural barrier (floor slab)
- Gas resistant membrane

A designer should be appointed to produce a suitable design for the gas protection measures that achieves 3.5 points.

In order to comply with BS8485 the membrane installation must be validated in accordance with CIRIA C735 '*Good practice on the testing and verification of protection systems for buildings against hazardous ground gases*' (CIRIA C735).

A gas resistant membrane achieves zero points unless it is independently validated.

GeoDyne have been appointed to undertake independent third-party verification in accordance with CIRIA C735. The process of installation and validation takes place in parallel with the construction process and should not impinge on the build programme.

VALIDATION PROCESS

Following completion of the design and appointment of an installer GeoDyne will prepare a Ground Gas Verification Plan (GGVP), in advance of our inspection visits. The GGVP should be forwarded to the Local Planning Authority LPA for comment.

The GGVP will summarise the development proposals and the history of site investigation reporting and will set out the following:

- The Ground Gas Classification / Characteristic Situation
- The building type
- The ground gas protection score
- Details of the ground gas protection system
- Membrane installers and qualifications
- Membrane installation methodology
- Verification protocols
- Reporting requirements

We will need the following information is forwarded to GeoDyne as a minimum once the design of gas protection measures for the site have been finalised, to ensure that our GGVP is appropriate for the proposed precautions.

- Technical data relating to the membrane to be installed at the site
- Drawings showing the proposed membrane installation details, inclusive of how membrane penetrations (i.e. service pipes, stanchions etc.), door entries and corners will be sealed
- Drawings showing the floor slab construction and any sub-floor ventilation
- Any correspondence with the Local Authority which relates to ground gas protection
- Method statement for the installation of the membrane (prepared by the membrane installers)

Validation works will comprise a visual inspection of the installation supplemented by pick testing. The validation will include inspection of all joints between membrane panels as well as the seals around service penetrations, door entries, corners etc. to assess the continuity of the membrane throughout building. We recommend that the membrane is inspected following installation and prior to any follow-on trades working over the membrane, ideally when the installers are present on site.

Once the membrane is installed it should be covered as soon as possible to protect it from damage.

Following validation GeoDyne will produce report(s) as required by the Client.

The completed validation report(s) should be submitted to LPA to discharge the relevant planning conditions. The LPA should be able to discharge the relevant conditions before the build is completed.

I hope the above meets your requirements.

Please let us know if we can be of further assistance.

Yours sincerely

For and on the behalf of GeoDyne Limited

A handwritten signature in blue ink, appearing to read 'B. Parry'.

Ben Parry
Geo-Environmental Engineer