

# Ground Gas 2021 Programme

## **New Guidance & Practical Solutions for Improved Risk Assessment, Mitigation, & Protection Verification**

### **Afternoon: Tuesday 9 March**

**13.30 Welcome and Introduction**

**13.35 Opening Remarks from the Chair**

**Hugh Mallett, *Technical Director, BuroHappold***

**13.45 Detailing the New Gas Protection Verification Accreditation Scheme (GPVS)**

CL:AIRE has recently announced the launch of the Gas Protection Verification Accreditation Scheme (GPVS). This scheme has been developed working closely with industry, with the aim of raising standards in gas membrane inspection, verification, and reporting, ensure that the gas protection verification part of land contamination management meets the necessary technical and regulatory standards, and to provide all stakeholders involved in land contamination management with the confidence that risks associated with ground gases have been adequately managed.

The scheme applies to both the practical installation of the gas mitigation measures and to the verification reporting process. This presentation will outline the key features of the scheme and how it will work in practice.

**Nicola Harries, *Project Director, CL:AIRE***

**14.10 Retrofitting Ground Gas Protection Measures to Existing Buildings**

- Reviewing the key factors influencing a retrofit decision and the appropriate options appraisal process
- Detailing the key recommendations of new CIRIA guidance
- Recent case example - lessons to be learnt: the importance of a thorough risk assessment and CSM

**Steve Wilson, *Technical Director, The Environmental Protection Group Ltd (EPG)***

**14.35 Continue the Questions and Discussion in our Virtual Conference and Exhibition Lounge**

### **15.15 Innovative and Proven Methods to Refine your Vapour Intrusion Conceptual Site Model (CSM)**

The ability to accurately assess the location, and vapour intrusion (VI) potential of VOC sources beneath buildings is vital in developing an effective conceptual site model (CSM). An innovative and proven method has significantly streamlined and improved the assessment process. Through these new advances, it is possible to complete a thorough and accurate assessment of sub-slab vapour conditions in less time and at a lower cost. Information generated by an accurate assessment can then be leveraged using GIS to increase the understanding of a VOC source's age and the potential release mechanism, and thus better define your CSM.

This discussion presents case studies of large manufacturing facilities (up to 22,000 m<sup>2</sup>) that had been active as early as 1880. At least one had a long-documented history of chlorinated solvent use. In each case, the use of high quality, rapidly obtained, active sub-slab soil gas measurements obtained from narrowly spaced grid systems provided information necessary to locate VOC sources and better define your CSM Model.

**Laurie Chilcote, Vice President, Vapor Pin Enterprises & Director of Sales & Marketing, Cox-Colvin & Associates**

### **15.35 Case Study on Vapour Intrusion: Indoor Air Quality – Could Your Concrete Floor be Causing Harm?**

Whilst most people will be familiar with the term Sick Building Syndrome, little attention is paid in the UK to the presence of 2-ethylhexanol (2-EH) in indoor air, and its prominence in causing sickness in both residential and commercial settings. 2-EH, which is highly toxic by inhalation, is readily formed by the reaction between high moisture content concrete floors and specific chemicals present in some vinyl flooring and adhesives.

This presentation highlights the investigation and technical aspects of this little-known issue recently identified and remediated during a vapour intrusion investigation of a residential property in the UK.

**Dr John Andrews, Associate, The Environmental Protection Group (EPG)**  
**Melanie Lipsham, Geoenvironmental Engineer, LEAP Environmental**

### **15.55 Q&A**

### **16.15 Close of Session**

## **Afternoon: Wednesday 10 March**

### **13.30 Welcome Back**

### **13.35 Opening Remarks from the Chair**

**Hugh Mallett, Technical Director, BuroHappold**

### **13.45 Updated Good Practice Guidance on Mine Gas Risk Assessment**

Following the recommendations arising from the Gorebridge incident, a technical guide has been prepared detailing Good Practice for Risk Assessment for Mine Gas Emissions. This presentation will report on the findings of the recent public consultation and key aspects of the soon to be published technical advice on better understanding mine gas risk assessment.

**Dr Tom Henman, *Director - Geosciences, RSK & Deputy Chair, SiLC PTP***

### **14.10 Q&A**

### **14.15 Continue the Questions and Discussion in our Virtual Conference and Exhibition Lounge**

### **15.00 Exploring Best Practice in Detailing & Designing an Appropriate Gas Membrane**

- Outlining key criteria outlined in BS8485:2015+A1:2019 regarding the design and specification of suitable gas membranes
- Understanding the BS4845 points system and where / how it can be used
- Incorporating gas membranes into MMC and modular buildings

**Patrick Flood, *Technical Director, Juta UK***

### **15.20 Case Study: Radiocarbon Dating and Multiple Lines of Evidence Approach for a Complex Ground Gas Risk Assessment**

- Using a robust Conceptual Site Model (CSM) to identify all possible Source-Pathway-Receptor linkages
- Radiocarbon dating techniques used to determine gas source
- Demonstrating a multiple lines of evidence approach to determine accurate and justifiable site-specific ground gas risk values
- Case Study demonstrating an innovative approach and the resulting benefits (High Pressure Gas Transmission facility)

**Simon Dunstan, *Senior Environmental Consultant, Atkins***

**Dr Bala Palanathakumar, *Senior Environmental Engineer, Atkins***

### **15.40 Q&A**

### **16.00 Closing Remarks from the Chair and Close of Conference**