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**Scheme**: Design, supply and install a lateral gas migration barrier system to prevent carbon dioxide migration across the site boundary from adjacent landfill site. The virtual curtain barrier system allowed the gas migration barrier to be installed extremely close to the site boundary, minimising land take on the development. The images illustrate how close to the boundary it was installed.

Client: Holden Homes

Site: Fishwick, Preston

EHO: Preston Borough Council

Date: September 2000

Installation: 148m long to 4m depth











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**Scheme**: To effectively isolate the leisure development from the potential migration of gas from the proposed car park area, all of which was constructed on landfill. Construction of the car park would effectively cap off the old landfill below causing any gas to migrate laterally. The virtual curtain was installed in conjunction with some passive venting measures installed below the car park construction.

Client: Kier Southern

Site: Port Solent.

**EHO:** Portsmouth City Council

Date: 2000

Installation: 95m long to 4m depth







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**Scheme**: To intercept migration pathways to prevent gas migration into the housing development from an adjacent former landfill. The installation comprised a 350m long virtual curtain, with vent bollards at 5m centres.

**Client**: Taylor Wimpey

Site: Welwyn Garden City

EHO: Hatfield Borough Council

Date: 2005

**Installation**: 350m long to 6.5m depth









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**Scheme**: To eliminate the offsite migration of gases due to capping a closed landfill site. "Pressure cooker effect". This scheme uses interlocking insertion tools to effectively produce a continuous gas curtain.

Client: SITA

Site: Tullos Hill, Aberdeen

EHO: Aberdeen City Council

Date: July 2009

**Installation**: 747m long to 3.5m depth









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**Scheme**: To provide an engineered preferential pathway for the controlled dilution to safe levels of ground gases beneath a new park and ride facility.

**Client**: Highways Agency / Skanska

- Site: Scarborough Integrated Transport Scheme A64 Park and Ride
- EHO: North Yorkshire County Council

Date: June 2008

**Installation**: 433m long to 3m depth









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**Scheme**: Virtual curtain required to prevent potential gas migration during the capping of an old landfill. A good example to show horizontal alignment versatility.

- **Client**: North Lanarkshire Council. George Lesley Contractors.
- Site: Brownsburn Regeneration Park, South Airdrie.
- **EHO:** North Lanarkshire Council.
- Date: June September 2008
- Installation: 880m long up to 7m deep









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**Scheme**: Virtual Curtain installation to protect existing houses beyond the perimeter of a new school from potential migrating gases emanating during the filling operations during earthworks phase. Commonly known as "squeezing".

#### Client: Tameside

Carillion

- Site: Tameside BSF Ashton Campus
- EHO: Tameside Metropolitan Borough Council

Date: June 2009

Installation: 465m long up to 9m deep









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**Scheme**: Gas venting measures to a new coach park constructed on the site of a former landfill including a gas migration barrier to the perimeter. The protection measures comprised gas dispersal strips within a no-fines granular layer below the coach park construction and a virtual curtain gas barrier installed along the perimeter of the coach park to prevent off-site migration to nearby housing.

Client: Coach Europe PLC, Leicester Michael Gerry Associates

Site: Enderby, Leicestershire

EHO: Blaby District Council

Date: July 2001

**Installation**: 146m to 3.5m depth







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**Scheme**: A gas migration barrier was required to prevent lateral migration of ground-bourne gases from an adjacent landfill on to the new development.

Client: Ernest Ireland Construction Scott White Hookins, Winchester

Site: Rose Road Centre, Southampton

EHO: Southampton City Council

Date: July 2004

Installation: 125m long to 4m deep









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**Scheme**: A gas migration barrier was required to prevent lateral migration of ground gases from an infilled lagoon on to the new development.

Client: Halebank Developments Winworth Construction

Site: Marsden Avenue, Warrington

EHO: Warrington Borough Council

Date: July 2015

**Installation**: 113m long to 7m deep, 223m long to 3m deep and standalone vent nodes, 12nr to 7m deep for gas alleviation

VIRTUAL CURTAIN gas migration solutions







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**Scheme**: To install a pressure alleviation system to alleviate gas pressures within the landfill waste deposits and a Virtual Curtain gas migration barrier to mitigate risks associated with the off-site migration of landfill gas toward existing properties.

Client: Willmott Dixon

Site: Waterside Drive, Walton on Thames

EHO: Elmbridge Borough Council

Date: July 2015

**Installation**: Gas alleviation system comprising 225nr individual Nodes to 4m deep. 4387m of gas collection duct including biofilter media for odour control

Virtual Curtain – 219mm long to 5m deep









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**Scheme**: The objective of this scheme was to reduce risk of ground gas attributed to Dale Lane Tip Migrating to nearby houses. The proposed solution was to install a Virtual Curtain gas migration barrier system to reduce gas concentrations near the site boundary and the local houses. Access was from the M42

Client: The Highways Agency Amey

Site: Closed Landfill Site, Dale Lane, Bromsgrove

EHO: Bromsgrove District Council

Date: July 2015

**Installation**: Virtual Curtain - 180m long to 5m deep. Vent nodes to 5m deep at 1m spacing with vent stacks at 15m centres. The barrier had to accommodate a high pressure gas main that passed through the site.









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**Scheme**: Gas vent barrier to passively vent to atmosphere landfill gases which are being generated from putrescible wastes that have historically been deposited at the site and safeguard against the off site migration of landfill gases to nearby/adjacent residential properties.

Client: Landcare Redhill

Site: Cormongers Lane, Redhill

EHO: Surrey County Council

Date: July 2018

Installation: Virtual Curtain - 258m long to 10m deep.







