



Case Study—Service Tunnels & Ducts (China)

CREATING SAFER SURROUNDINGS

Introduction

Detecting and pinpointing a gas escape along the line of a buried gas main that runs parallel with underground cable ducts is currently a time consuming and resource intensive task.

Existing gas detectors struggle to pinpoint the source of the leak leading to unnecessary excavation and inconvenience to the public.



In addition to the cost of the escaping gas, methane poses an explosion risk and is also a significant contributor to global warming. It is therefore important that the Gas Distribution Network (GDN) operators minimise leakage and identify gas escapes quickly and easily to minimise the impact on the public and the environment.

Project

OptoSci installed a 30 point monitoring system in utility ducting in an area of high seismic activity in China to monitor for fugitive gas escapes from the gas distribution network. The particular concern for this project was damage to the gas distribution pipes as a result of earthquakes / tremors in the area.

OptoSniff® is installed in service ducts under the city streets, running in parallel with the gas pipelines. The system continuously monitors for any gas escapes and help pinpoint the location of the leak.

The operation of OptoSniff® makes it particularly well suited to this environment and the following

characteristics have been highlighted as particularly relevant

- Low maintenance and one off calibration. OptoSniff® can be installed in hard to access utility ducting and will operate effectively with minimal servicing.
- Inherently safe and immune to EMI. Optical sensing technique ensures no spark risk in gas detection zone.
- Long distance sensing. Potential for 100's of sensors over >20km network. Long pipe / duct networks can be addressed by a single system.

Summary

The system has been operating effectively in this environment since 2012 and has successfully demonstrated its advantages over existing technology. Similar applications exist in the following industries where OptoSniff® would provide similar benefits.

- LNG Storage and transmission
- Gas extraction
- Transport tunnels



Further Reading

For additional information on using OptoSniff for tunnel and duct applications please see our website.

<http://sniff.optosci.com/utility-ducts/>