



LIQUID LEAK DETECTION SYSTEMS

# Case Study

## TTK FUEL LEAK DETECTION SYSTEM IN CITY CENTRE MIRDIF, UAE



### PROJECT BACKGROUND

City Centre Mirdif is a shopping mall in the residential area of Mirdif, in Dubai, United Arab Emirates.

It opened on 26 March 2010 and has a gross leasable area of 196,000 m<sup>2</sup> and houses 465 retail stores.

### PROJECT REQUIREMENTS

In this hyper-scale shopping mall, several diesel-powered engine-generators provide emergency power in the event of a loss of station service power.

### PROJECT OVERVIEW

**Project** City Centre Mirdif

**Location** Dubai, UAE

**Application** Leak detection in shopping mall

**Project Type** New project

**Project followed by** TTK Middle East

**Contract Scope** TTK assures engineering, material delivery, installation, testing & commissioning, start-up & handover of the leak detection system

**Completion Date** November 2022

**Technology** FG-ALS4-OD four zones monitoring unit;  
FG-OD addressable oil sensing cable



City Centre Mirdif

However, if any fuel/diesel leaks go undetected in generator rooms and prevent generators from working, the shopping mall would still be forced to close. That's why the end user requested TTK to supply a reliable liquid leak detection system to monitor the generators and their auxiliary equipment (day tank, pipes) 24/7, to ensure an uninterrupted functionality of the whole system.

# AREAS TO BE PROTECTED

The scope of fuel leak detection work for the Mirdif shopping mall is to protect seven day tanks which fuel generators located in different generator rooms.

## TTK's SOLUTION

For this project, TTK ME recommended its fuel leak detection system, using FG-ALS4-OD leak detection control panels and FG-OD fuel sensing cables in different lengths.

### Sense cable

- Insensitive to water (as are all TTK oil sensors), the FG-OD cables detect the presence of liquid hydrocarbon at any point along their length. They were installed in the generator rooms, near leak sources in this project.
- Technical advantages of TTK's hydrocarbon sensing cable:
  - Detects quickly, even small quantities of hydrocarbon liquid, allowing to give very early alarm and gain precious time for operators to react in the event of a leak.
  - Reusable, allowing onsite testing and significantly reducing equipment cost.
  - Every individual cable is addressable and independent, allowing the detection and location of multiple leaks in the same circuit.

### Monitoring panel

- To monitor all sensing cables, a multiple-zone alarm & locating panel (reference name FG-ALS4-OD) was installed in the generator rooms.
- Equipped with a touch screen, relays and RS485 Modbus serial link interface, the panel works as a stand-alone system and monitors up to four independent zones and pinpoints the location of leaks.
- In the event of liquid leak or default on the sense cables for each zone, the responses from the FG-ALS4-OD alarm & locating unit:
  - An audible alarm is triggered and a relay is activated.
  - The touch screen of the panel displays the zone, the location of the leak (on the cable) and details of the fault (the type of fault leak or cable break).
  - Report to the DCS/SCADA/Safeguarding system via a JBUS/MODBUS protocol.

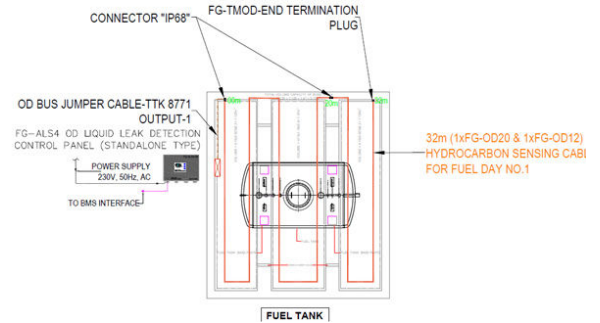


Addressable Oil Sensing Cable: FG-OD (connector IP68)

Embedded microcontroller inside FG-OD sensing cable



Four Zones Alarm & Locating System Unit for Hydrocarbon Leak Detection (FG-ALS4-OD) installed on site



Schema of installation of TTK oil fuel leak detection monitoring panel for day tank



TTK oil fuel sensing cables (FG-OD) installed under a day tank

