



THE INSTITUTION OF FIRE ENGINEERS

FOUNDED 1918 • INCORPORATED 1924

# 2015 AGM & International Conference

The Shard, London

16<sup>th</sup> July 2015

---

---

# Case Study for **'The Torch Tower'** **Dubai Marina**

Presented by;

Lieutenant Colonel Ali Almutawa

Operations Director Dubai Civil Defence





## **Lt. Colonel Expert / Ali Hassan Almutawa**

**Director of Operations Department**

**Dubai Civil Defence**

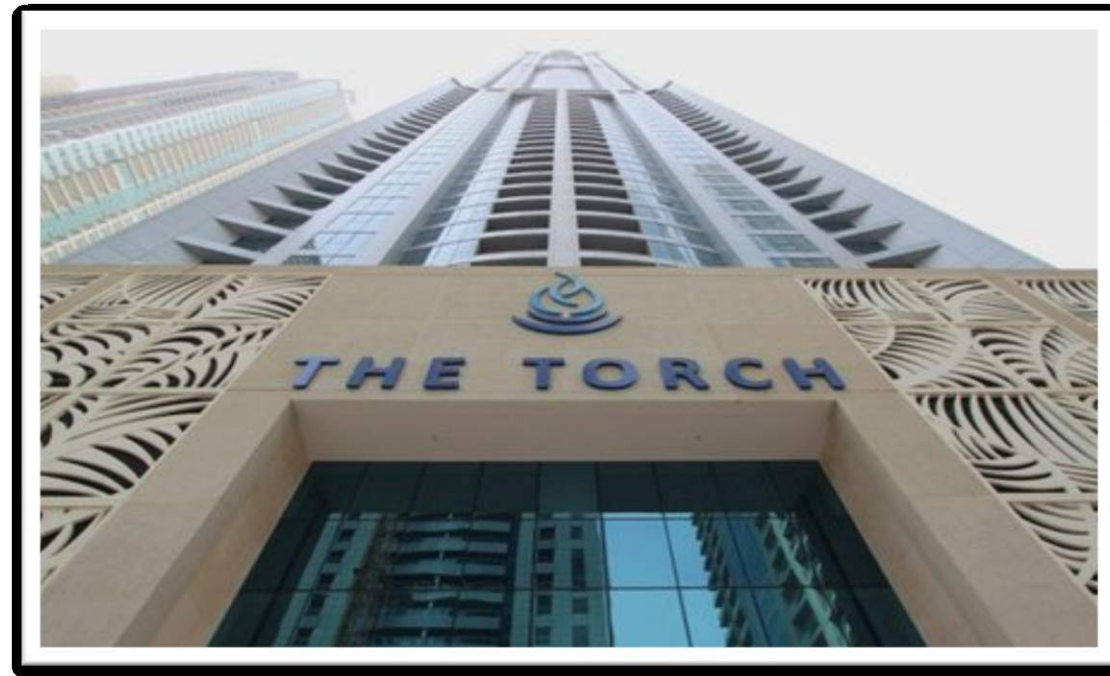
**United Arab Emirates**

- An experienced fire and rescue officer with broad experience gained from more than 18 years' working in the Civil Defence.
- I was appointed to the position of the Director of Operations Department in Dubai Civil Defence since 2008.
- Obtained a diploma degree in "Fire Science" during 1998 in Toronto
- Followed with a diploma degree in "Fires in Airports and Seaports" from Canada.
- I then graduated with a bachelor degree in Law from Dubai Police Academy in 2007.
- After that I obtained one more diploma for "Operations Room Management" from Germany. In 2014.
- I've Graduated in Positions starting from Station Director up to the Director of Operations Control Rooms and currently my role is the Director of Operations Department.

---

---

## Torch Tower Dubai Marina



21/02/2015

## This is our Dubai Marina





## New Dubai





## SHEIKH ZAYED ROAD 1990





## SHEIKH ZAYED ROAD 2013





---

---

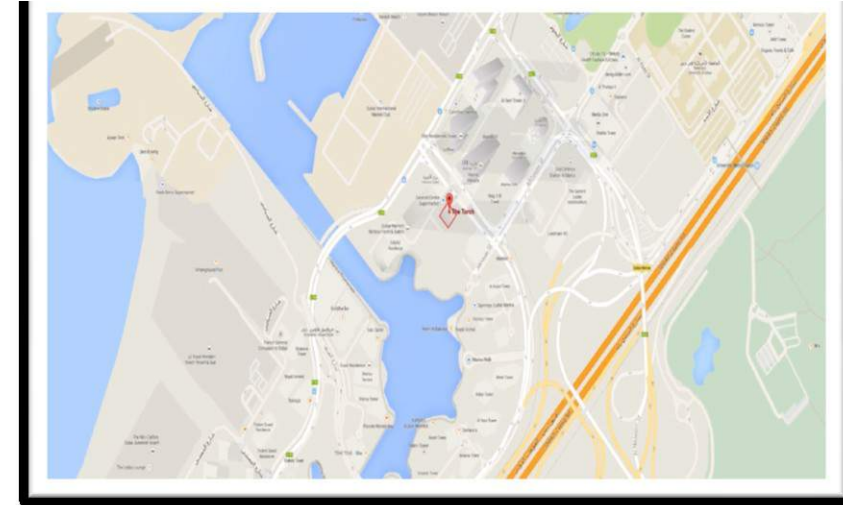
## Different Story Today

### CHALLENGES:

- Dynamic Risk Profile
- Rapid Development of Cutting Edge Design & Technology
- Strategic Vision for a Smart City
- Multi-cultural Population
- Fast Track Learning & Development
- Up skill to 'Best Practices' Benchmarked for Qualification

## ABOUT THE INCIDENT

- FIRE IN A RESIDENTIAL TOWER CONSISTING OF 87 FLOORS
- WITHIN A CLUSTER OF OTHER TOWERS, LATE AT NIGHT
- EXTREME WEATHER CONDITIONS, WIND GUSTS MORE THAN 40 KPH
- DENSELY POPULATED WITHIN TOURIST FACILITIES





---

---

## Timings and likely Source of Ignition

- Civil Defence received the first emergency call at 01:47hrs
- Two Stations Dispatched El Marsa & El Barsha
- Fire crews were arrived at 01:53hrs
- Fire been Controlled at 04:24hrs, and finished operations at 12:30hrs.
- Post fire analysis indicated that fire started on an external balcony on 51<sup>st</sup> floor
- Dubai Police investigation report indicates that the fire started by a thermal source (possibly smoking material).



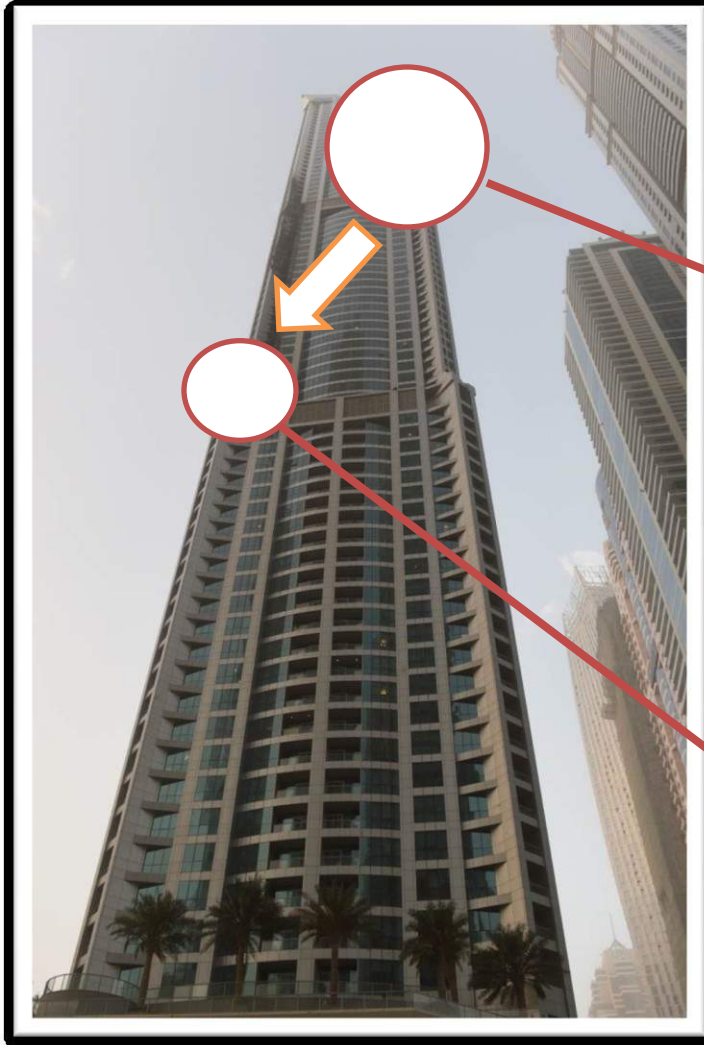
## CONSIDERATIONS

### Major Issues :

- Super High-rise building
- late at night (sleeping period)
- Densely populated (90% occupancy)
- Falling debris
- International focused media coverage
- Strong wind
- More than one fire base
- Public crowds around the building



## Fire Spread



1. Initial fire started here (51)

2. Debris then fell to the 30<sup>th</sup> floor due to strong wind starting secondary fire

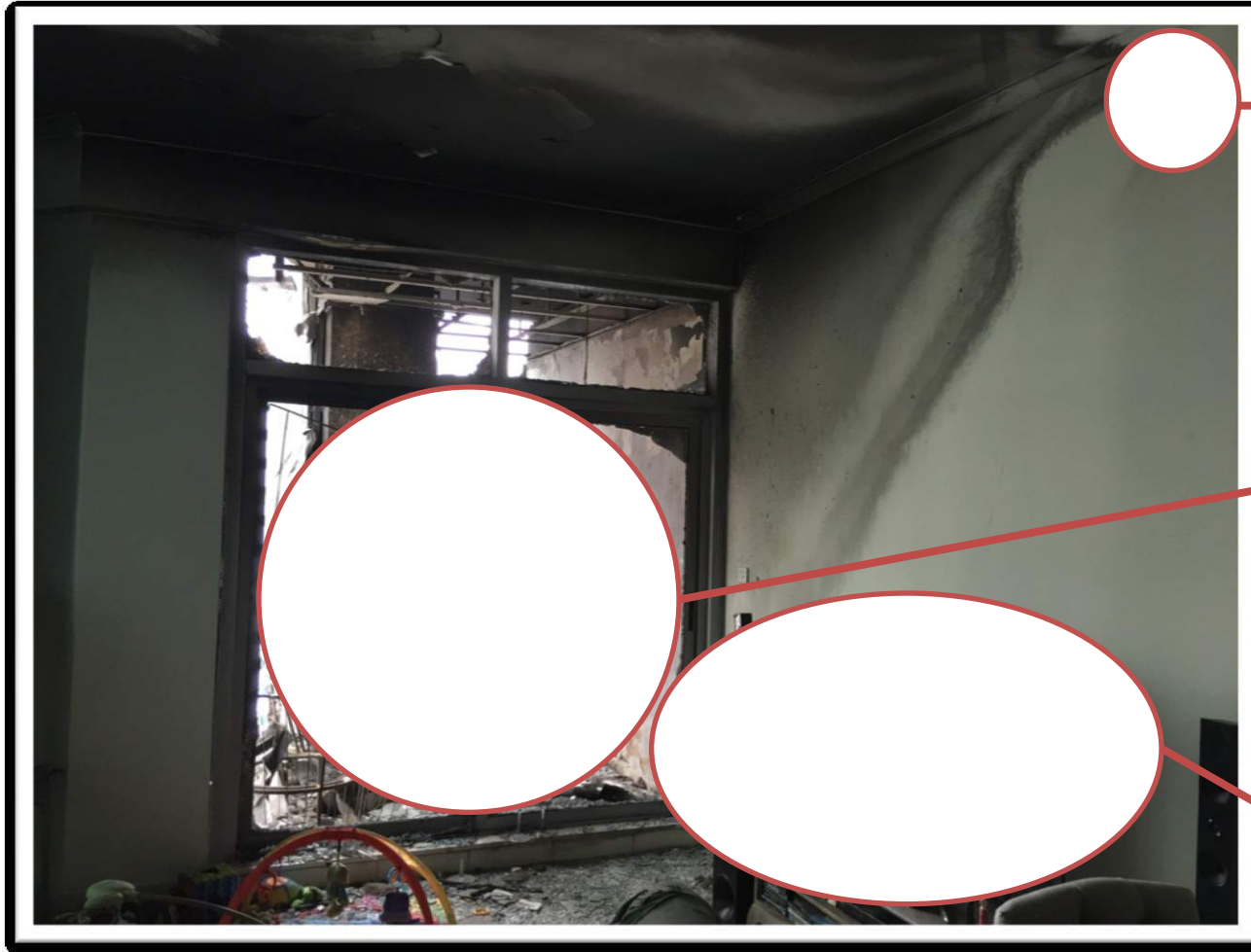
## Fire Spread



**Burning Debris fell onto 30<sup>th</sup> Floor Balcony**



## Effective Sprinkler System



Sprinkler prevented fire spread into the apartments

Balconies very badly damaged by fire

Very limited fire damage inside the room



## Measures on arrival

- Initial evaluation (size up) (SOP 103 Dynamic Risk Assessment)
- *Tactical mode: 'offensive'* ( committing fire and rescue teams inside the building)
- Bronze Command post (SOP 101)
- Rescue teams to assist in evacuation



- ESTABLISH A 'BRIDGEHEAD' – (SOP 105 HIGH RISE)
- BRIDGEHEAD ESTABLISHED FLOOR 49 –(SOP 130 & 127)
- Safety cordons and Sectorization
- Occupants moved to another assembly point away from operations.





---

---

## Effective Incident Resolution

*A number of factors contributed to the safe evacuation of all residents and the rapid control of the fire which include:*

- A quick response by Civil Defence
  
- Quick actions by the first crews to assist with safe evacuation of the tower
  
- Quick deployment of teams to fire affected areas to ensure that the external fire did not spread through the internal apartments
  
- Good use of SOPs by the Incident Commander

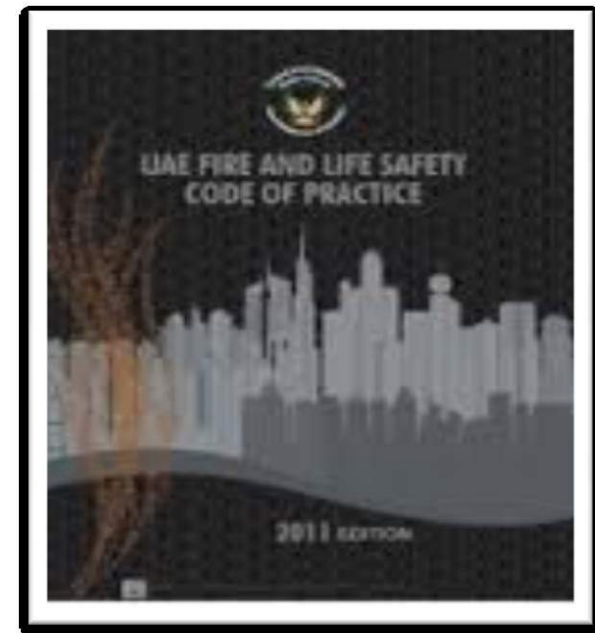
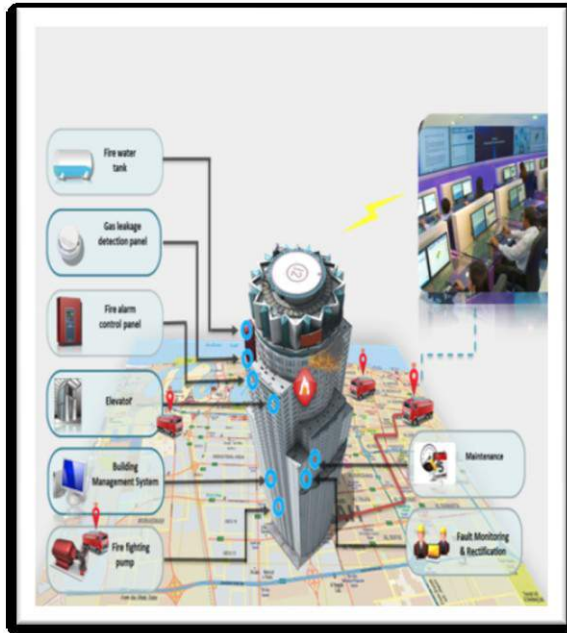


- 
- 
- Working fire fixed systems, sprinklers and fire pumps which ensured that small fires spreading from the external balconies to apartments was contained quickly
  - Robust fire safety culture enforced by the building management
  - Evacuation drills across Dubai led by the Civil Defence to ensure that residents understand the importance of evacuating buildings quickly and safely





We face those challenges by adopting Codes , Smart Systems & Operational Procedures

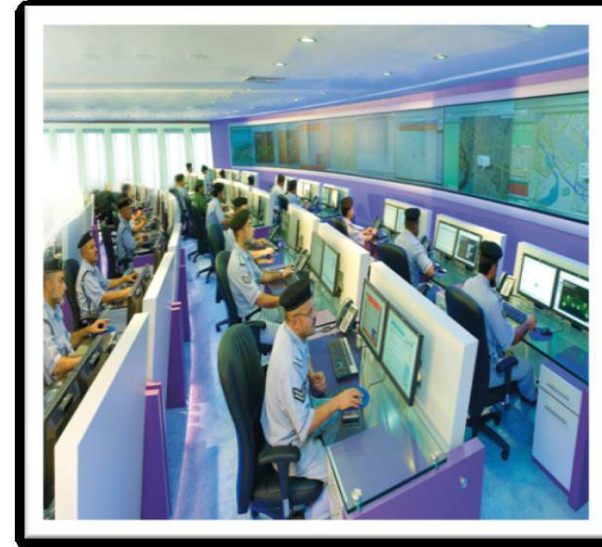
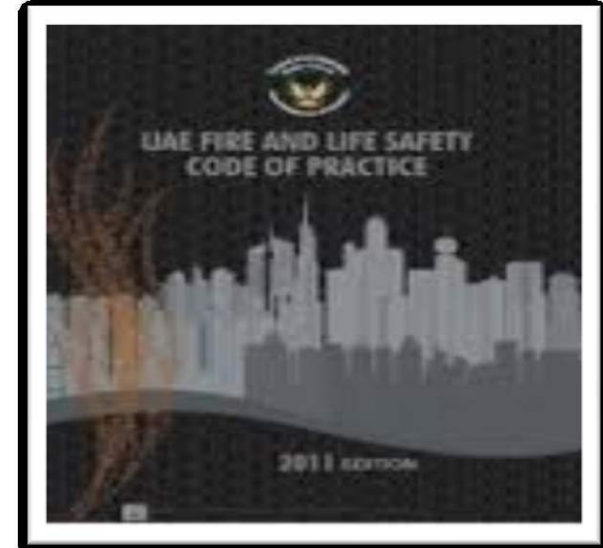


## Life Safety Code of Practice UAE 2011 & Annex. for Emergency Evacuation & Building Safety - 2012

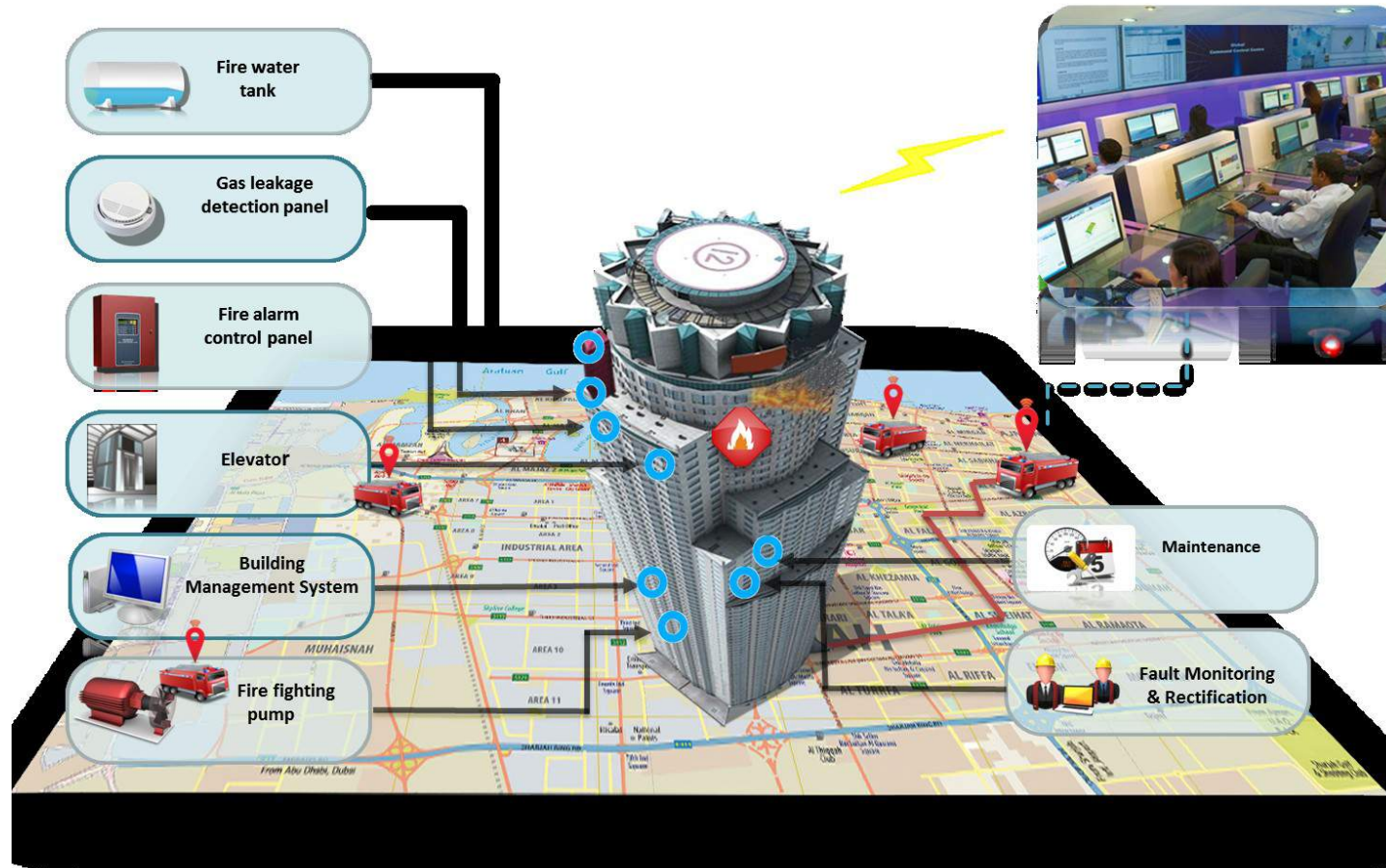
UAE FIRE AND LIFE SAFETY CODE OF  
PRACTICE 2011

Mandatory reference for building consultants and  
designers according to the occupancy type  
regarding Fire & Life Safety Systems

MANDATORY CONNECTION TO ACTIVE  
SYSTEM MONITORING 24 x 7

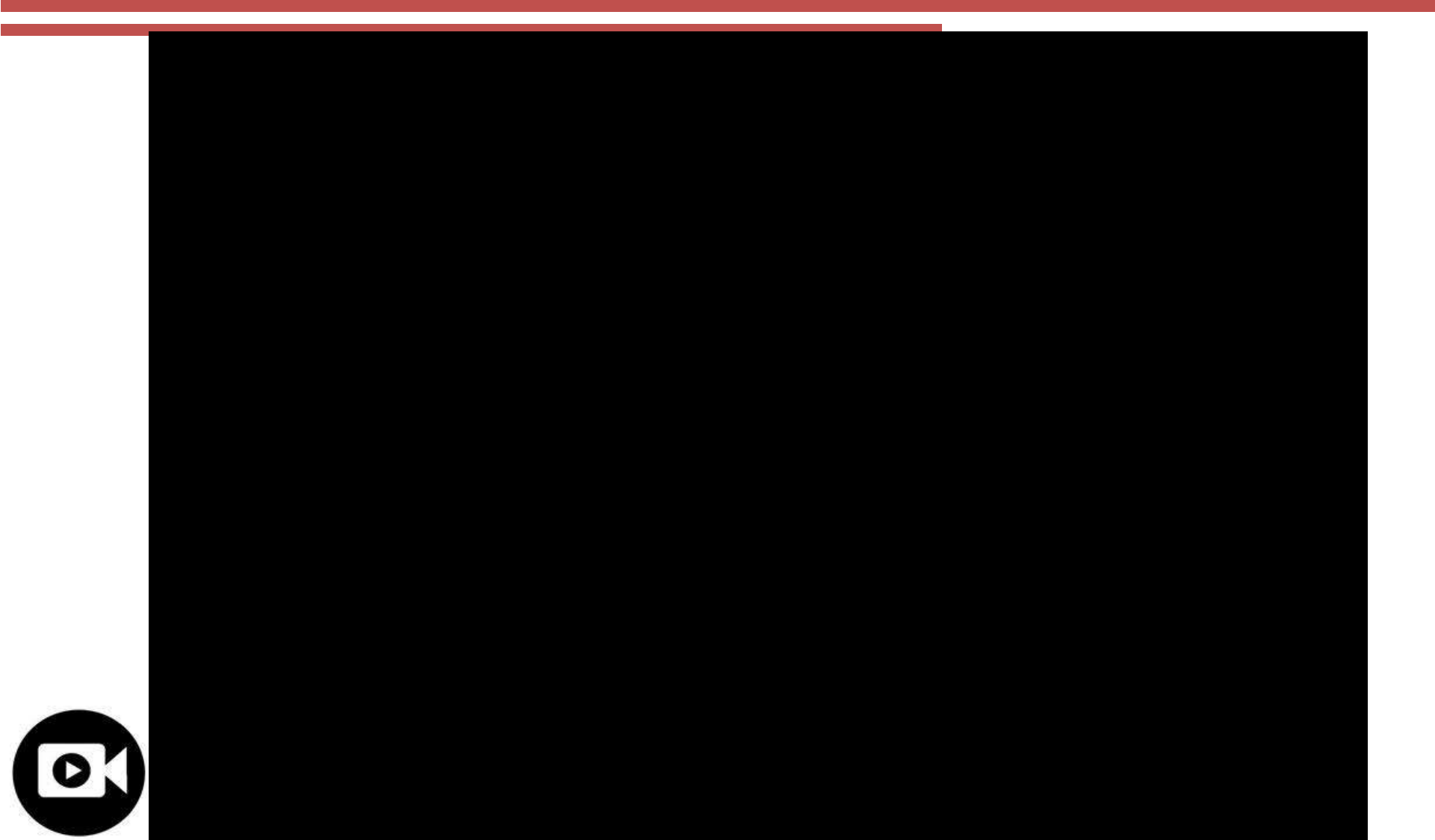


# Direct Alarm System Operations

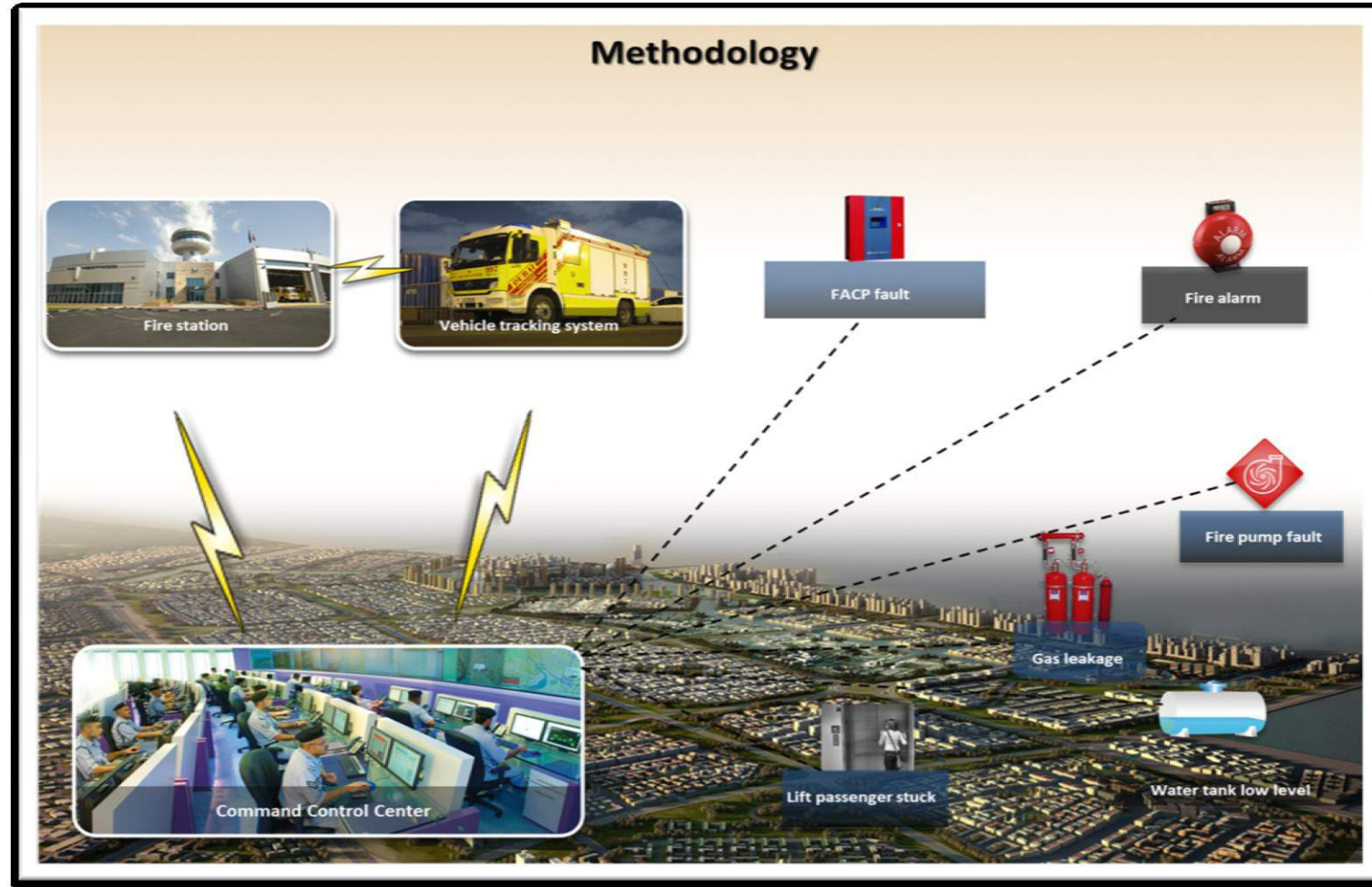




# Direct Alarm Smart Systems Operations



## Direct Alarm System Operations



## Smart Services


Civil Defense applied smart applications and systems , taking advantages of the latest technologies and software in order to facilitate transactions for the public and to facilitate the data flow to civil defense, which led to increase the efficiency of safety matrix in all buildings , increase safety standard and reduce response time to incidents that with high quality and low costs.










Welcome Green Building | Thursday 11 June 2015
Dubai Building Dashboard
English



**GREEN BUILDING-G+4**

0503922709  
Dubai, UAE

Status - Connected

Upload floor plan

People Counter

000

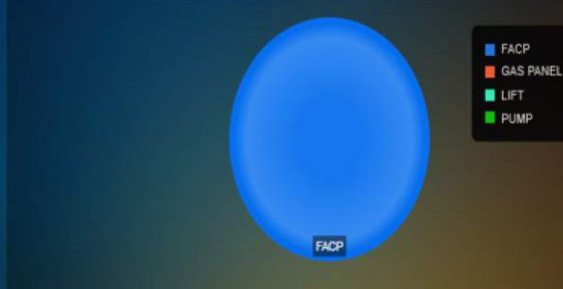
Today's Temperature

41°C  
High

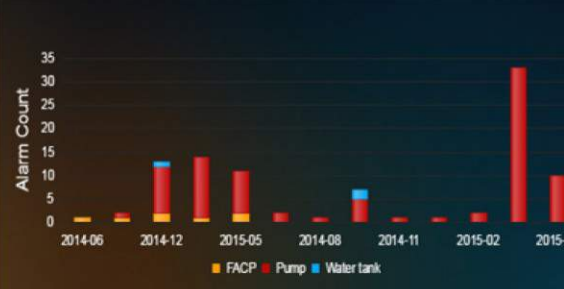
30°C  
Low

Wind: 16 km/h  
Humidity: 39 %

### Alarm Summary (Annual)



### Life Safety Alarm Breakdown (Annual)




#### System Health - Fault Alarms Received (Last 7 Days)

0  
PUMP

2  
LIFT


0  
FIRE PANEL

#### DAS Homes - Subscription




24x7 Direct Alarm System for Homes

#### DCD Monthly Newsletter






Dubai Civil Defence Newsletter


#### Building Route Map

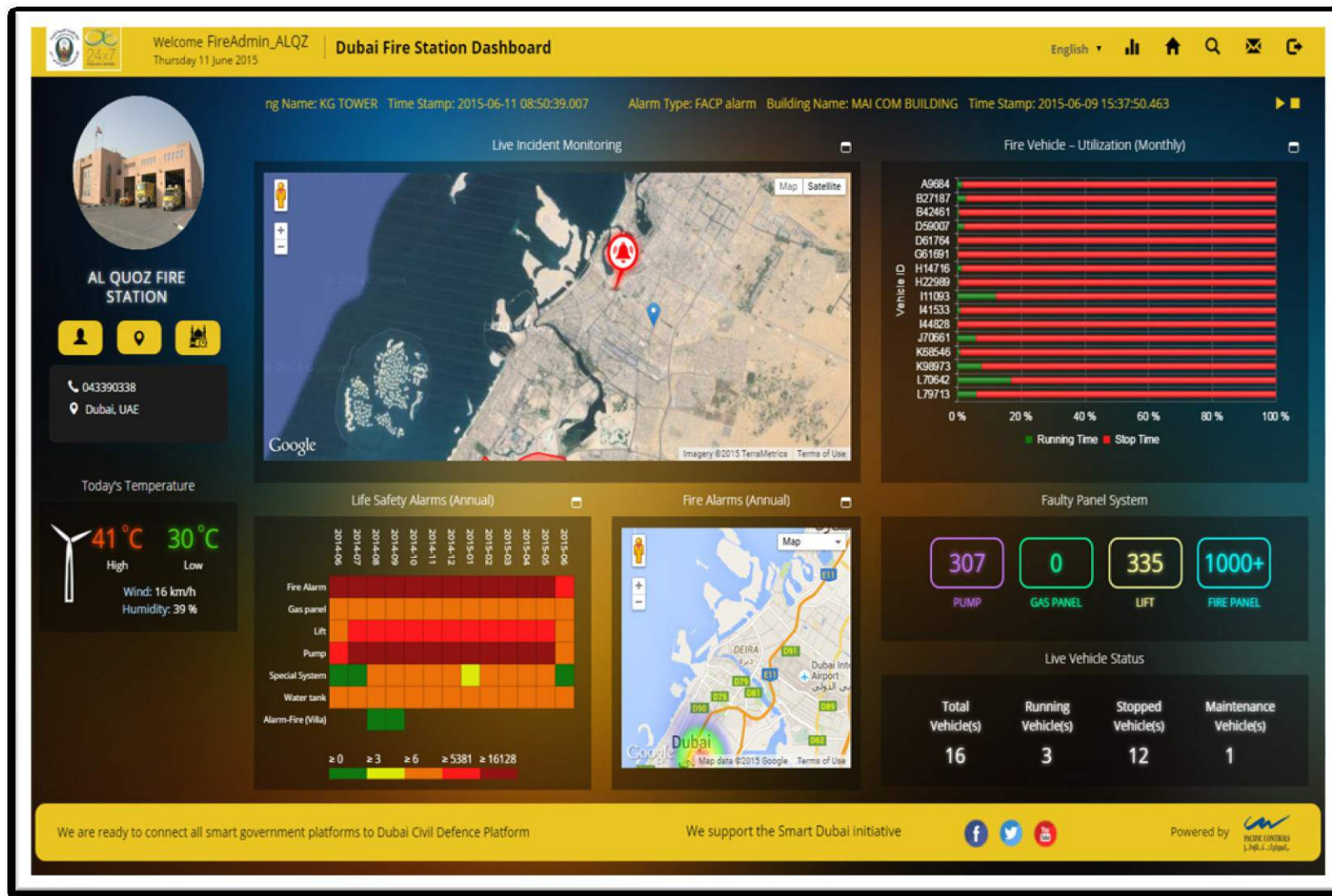


We are ready to connect all smart government platforms to Dubai Civil Defence Platform


We support the Smart Dubai initiative

Powered by 



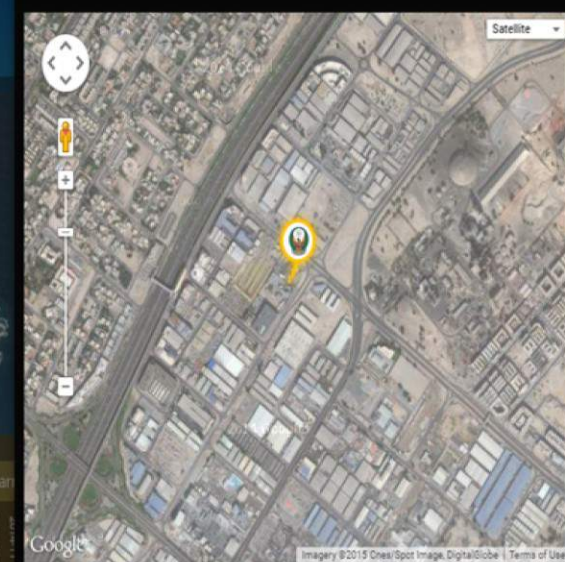
Welcome FireAdmin\_ALQZ  
Thursday 11 June 2015
Dubai Fire Station Dashboard
English | Home | Search | Mail | Refresh



**AL QUOZ FIRE STATION**

043390338  
Dubai, UAE


Today's Temperature  
**41°C** High **30°C** Low  
Wind: 16 km/h  
Humidity: 39%



Location View

Alarm Type: FACP alarm Bk

Fire Vehicle - Utilization (Monthly)



Faulty Panel System

**307**  
PUMP

**0**  
GAS PANEL

**335**  
LIFT


**1000+**  
FIRE PANEL

Live Vehide Status

Total Vehide(s)	Running Vehide(s)	Stopped Vehide(s)	Maintenance Vehide(s)
16	3	12	1

We are ready to connect all smart government platforms to Dubai Civil Defence Platform

We support the Smart Dubai initiative

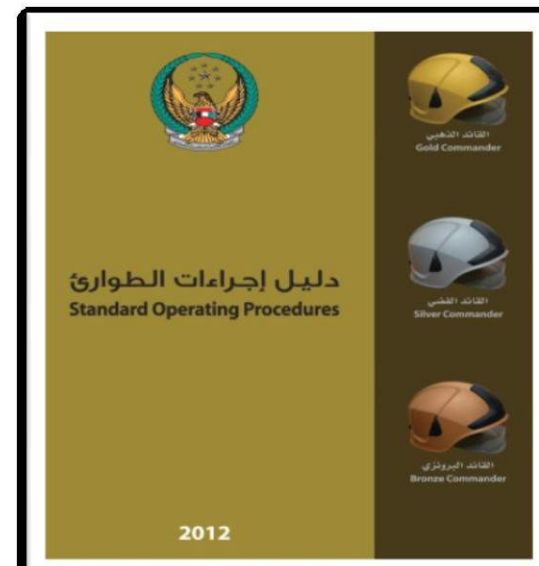
Powered by 



## firefighting

- The implementation of best operational standards to fight fires in high-rise buildings through the implementation of SOP's.

“Established procedure to be followed in carrying out a given operation or in a given situation, safely, securely and in a controlled disciplined manner”





## DCD Evacuation drills



## Summary of Main Points

Fire involving multiple stories of a 87 floor residential tower

No single casualty was reported.

The fire started on a balcony on the 51<sup>st</sup> floor on the NE corner

The fire spread rapidly upwards due to the flammable aluminum cladding covering the building. Falling debris landed on lower balconies starting additional fires on the NW corner, also spreading upwards

A strong fire safety culture in the building, working fire systems, quick response by the Civil Defence and quick actions by fire teams allowed occupants to evacuate quickly and to keep the fire mainly to the exterior of the building



---

---

All men are created equal,  
then a few become firemen

Thank You