THE INSTITUTION OF FIRE ENGINEERS

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2015 AGM & International Conference

The Shard, London

16th 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

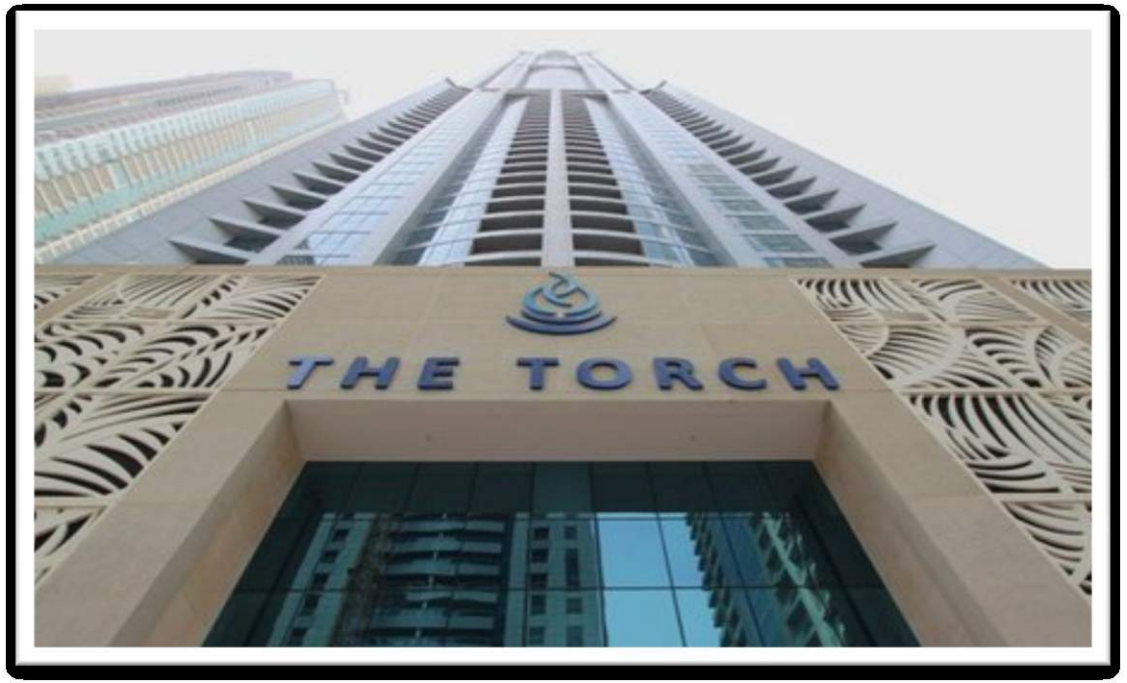
Director of Operations Department

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

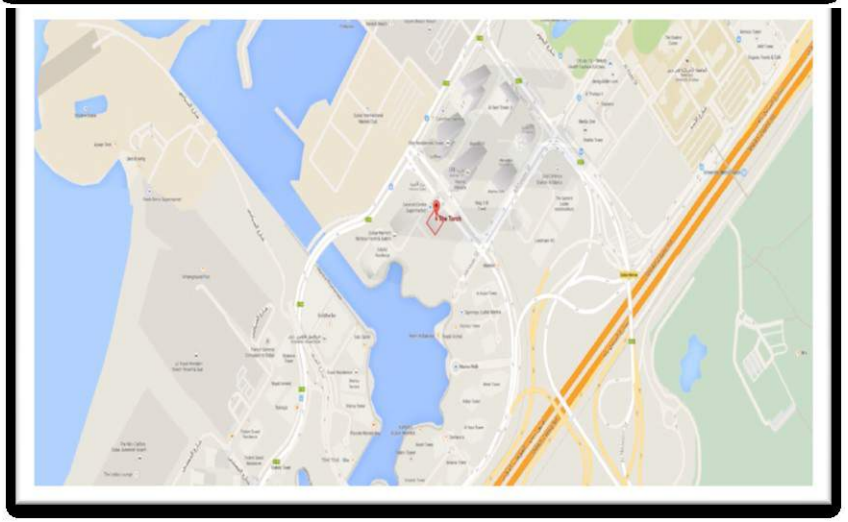
Different Story Today

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 87FLOORS
- 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

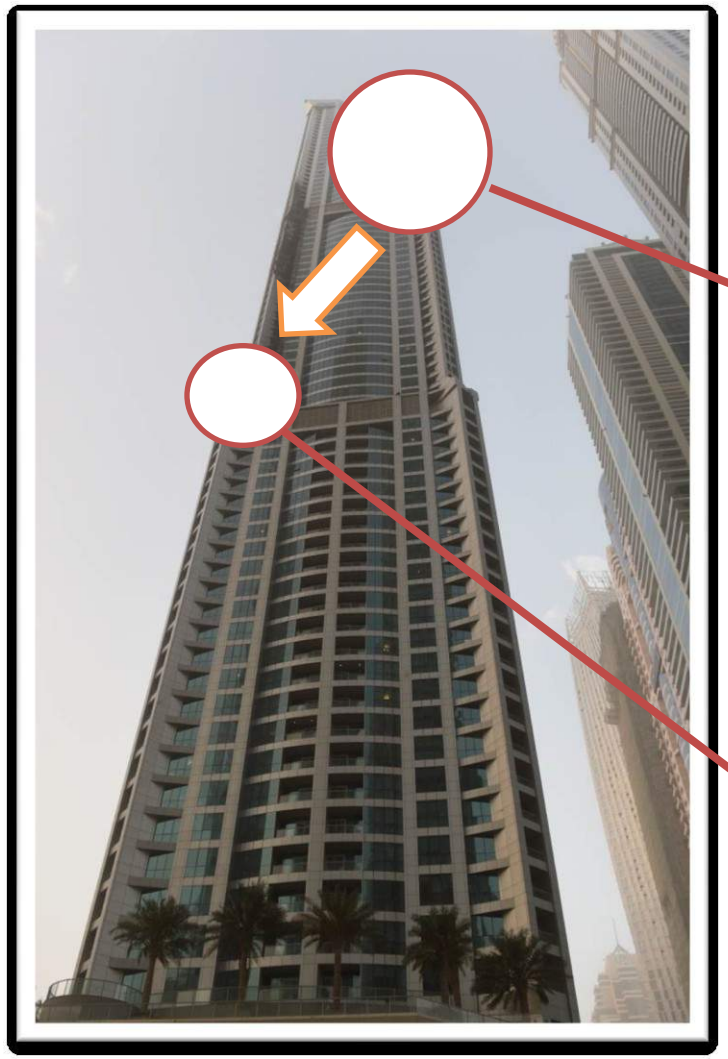
- Civil Defence received the first emergency call at 01:47hrs
- Two Stations Dispatched El Marsa & El Barsha
- Fire crews were arrived at 01:53hrs
- Fire been Controlled at 04:24hrs, and finished operations at 12:30hrs.
- Post fire analysis indicated that fire started on an external balcony on 51st floor
- 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



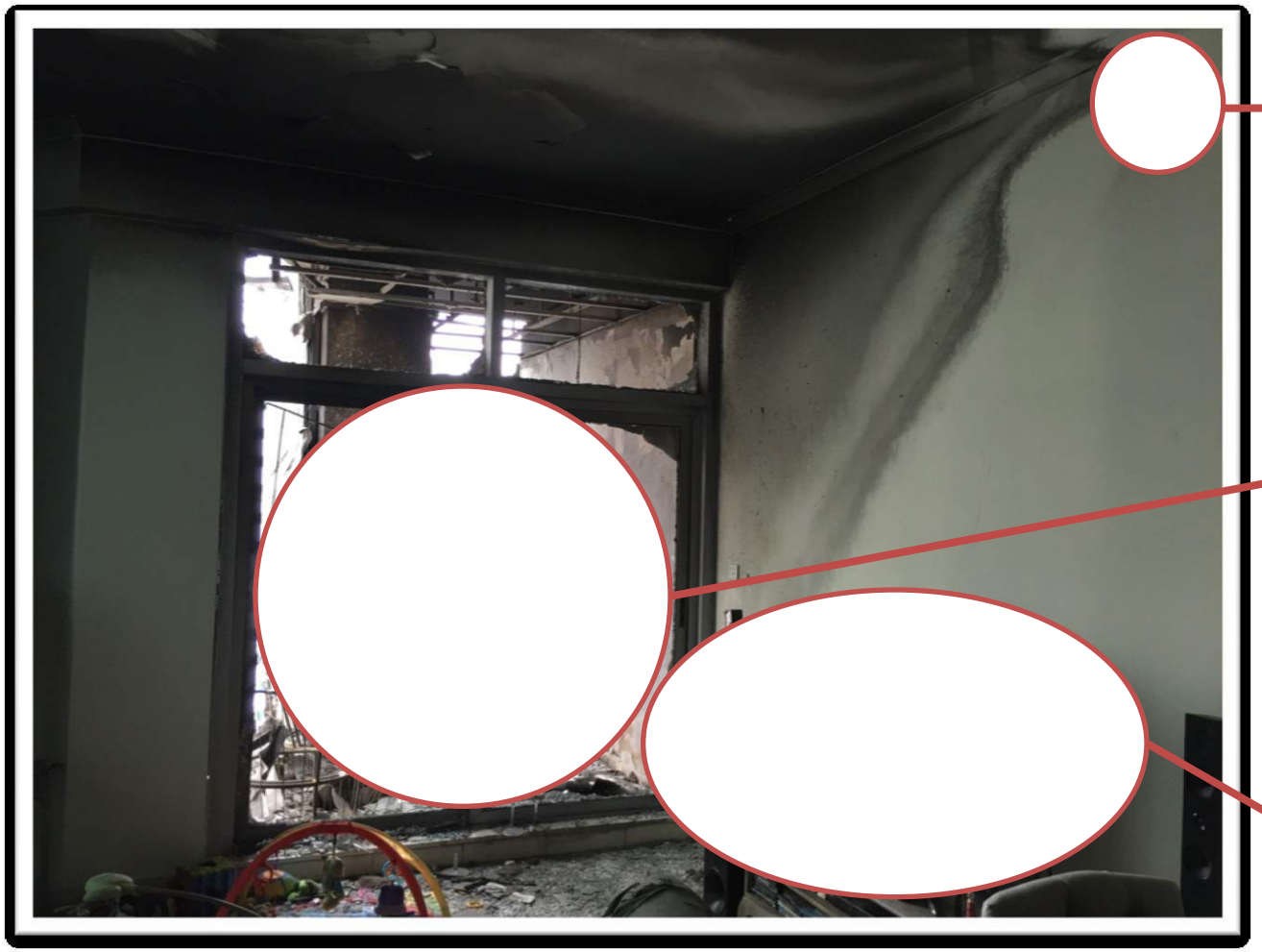
1. Initial fire started here (51)

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

Fire Spread

Burning Debris fell onto 30th 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.


STANDARD OPERATING PROCEDURES

Establish Bridgehead & BA Control Point

9. LIFTS

Effective Incident Resolution

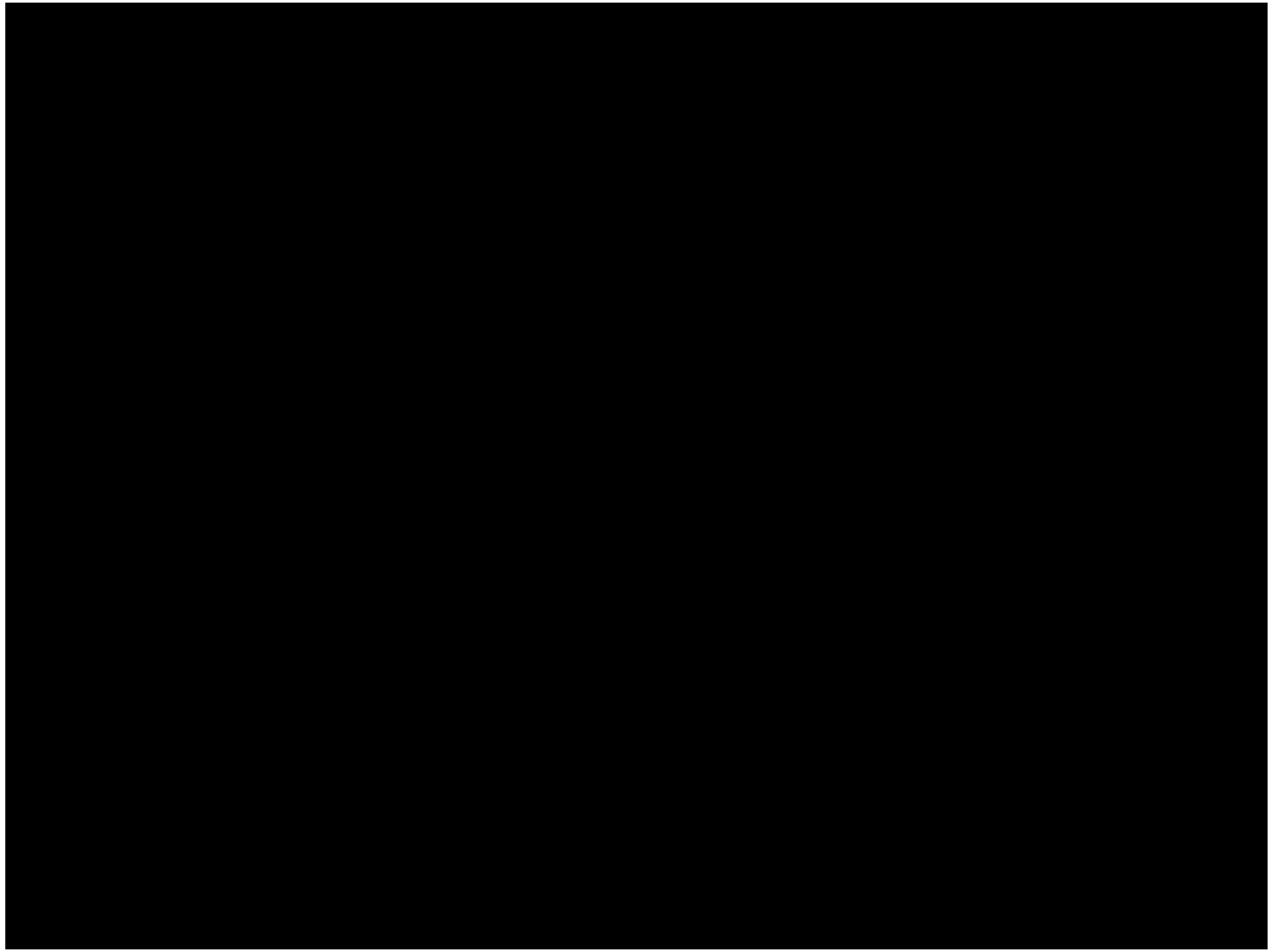
A number of factors contributed to the safe evacuation of all residents and the rapid control of the fire which include:

- 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

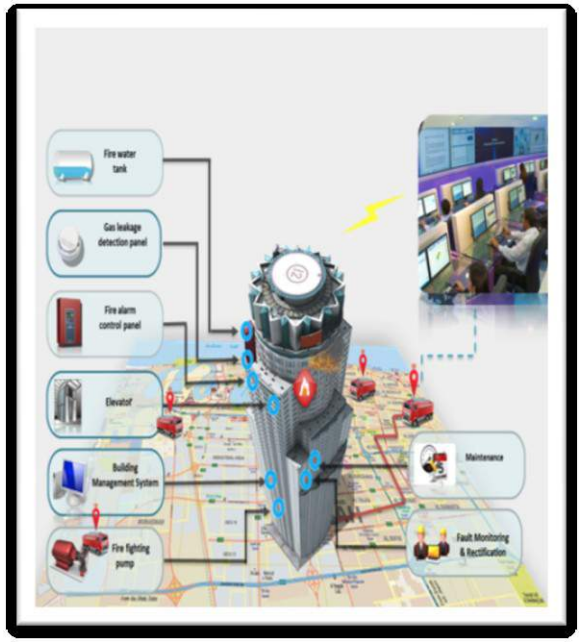
- Working fire fixed systems, sprinklers and fire pumps which ensured that small fires spreading from the external balconies to apartments was contained quickly

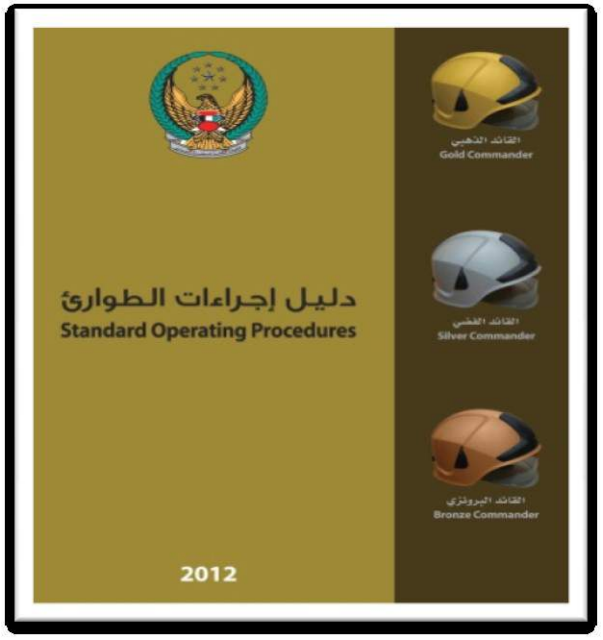
- Robust fire safety culture enforced by the building management

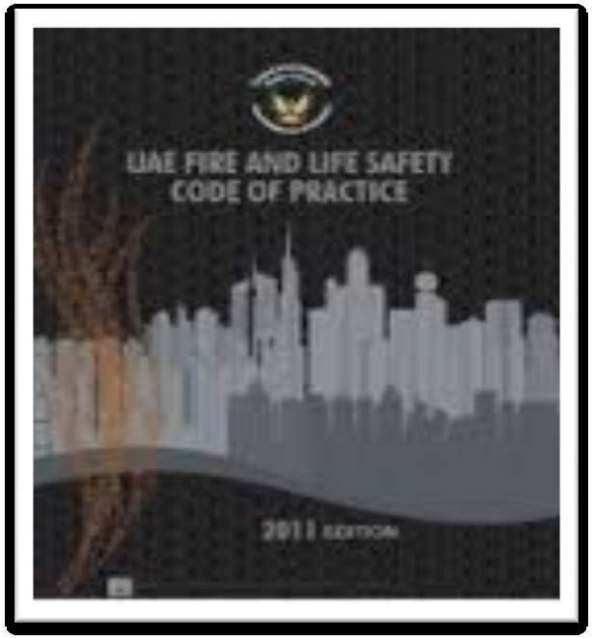
- Evacuation drills across Dubai led by the Civil Defence to ensure that residents understand the importance of evacuating buildings quickly and safely



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





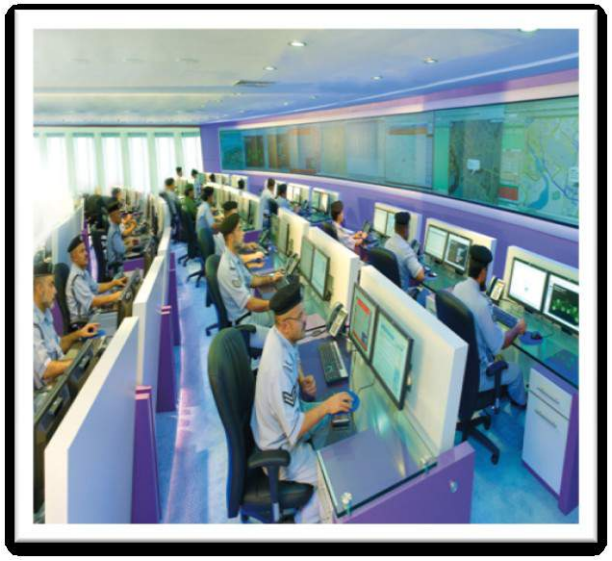


Life Safety Code of Practice UAE 2011 & Annex. for Emergency Evacuation & Building Safety - 2012

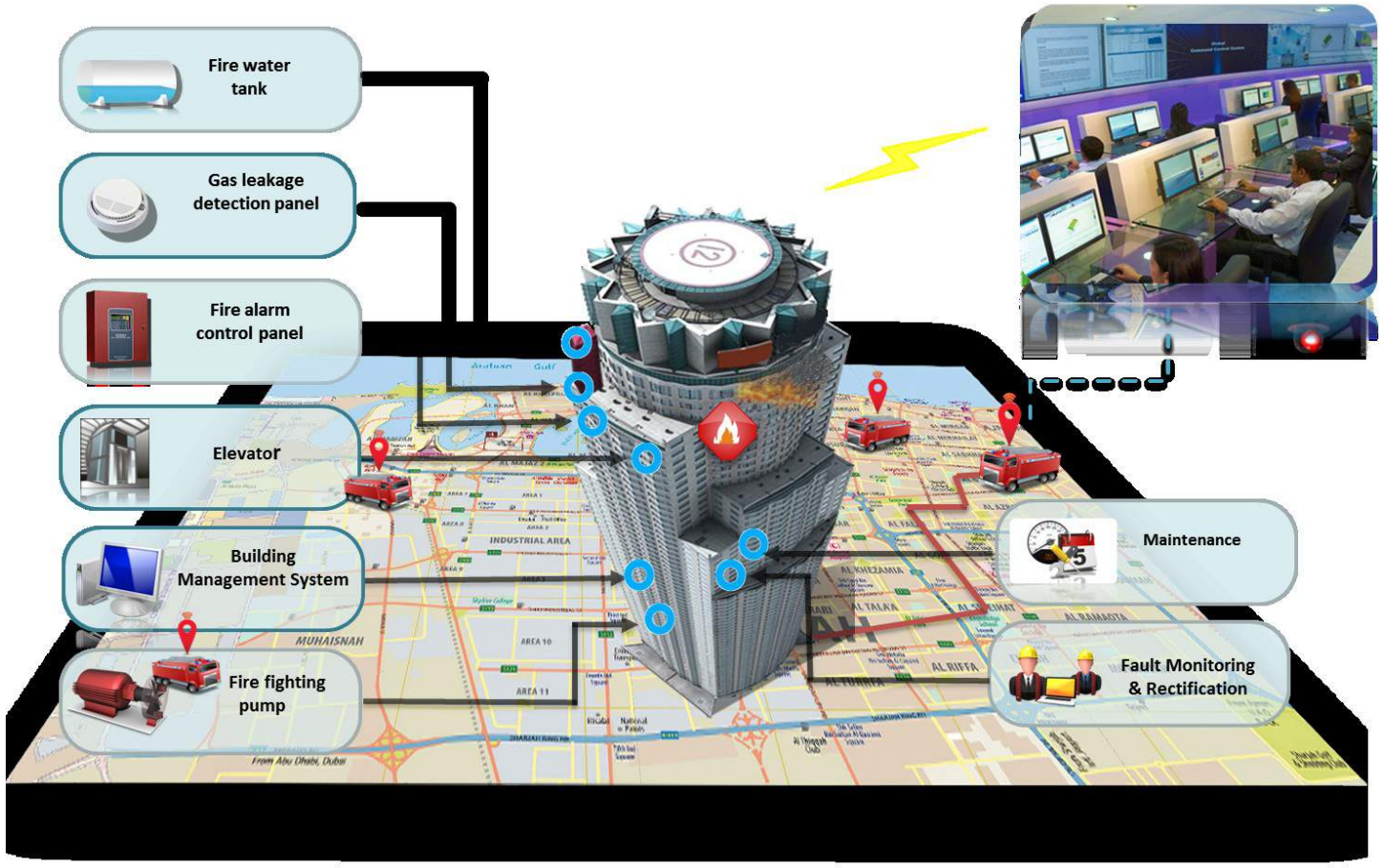
UAE FIRE AND LIFE SAFETY CODE OF PRACTICE 2011

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

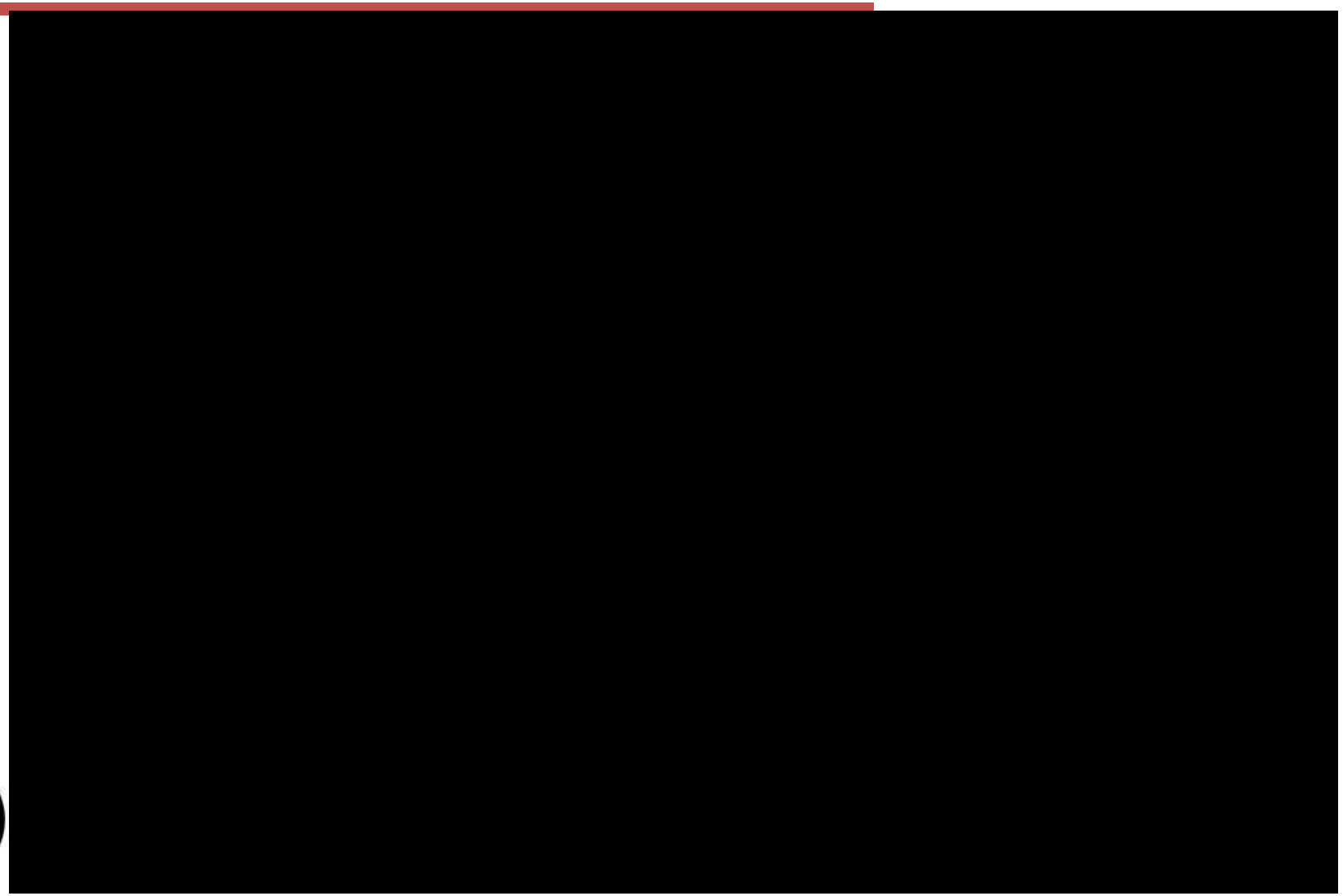
MANDATORY CONNECTION TO ACTIVE SYSTEM MONITORING 24 x 7



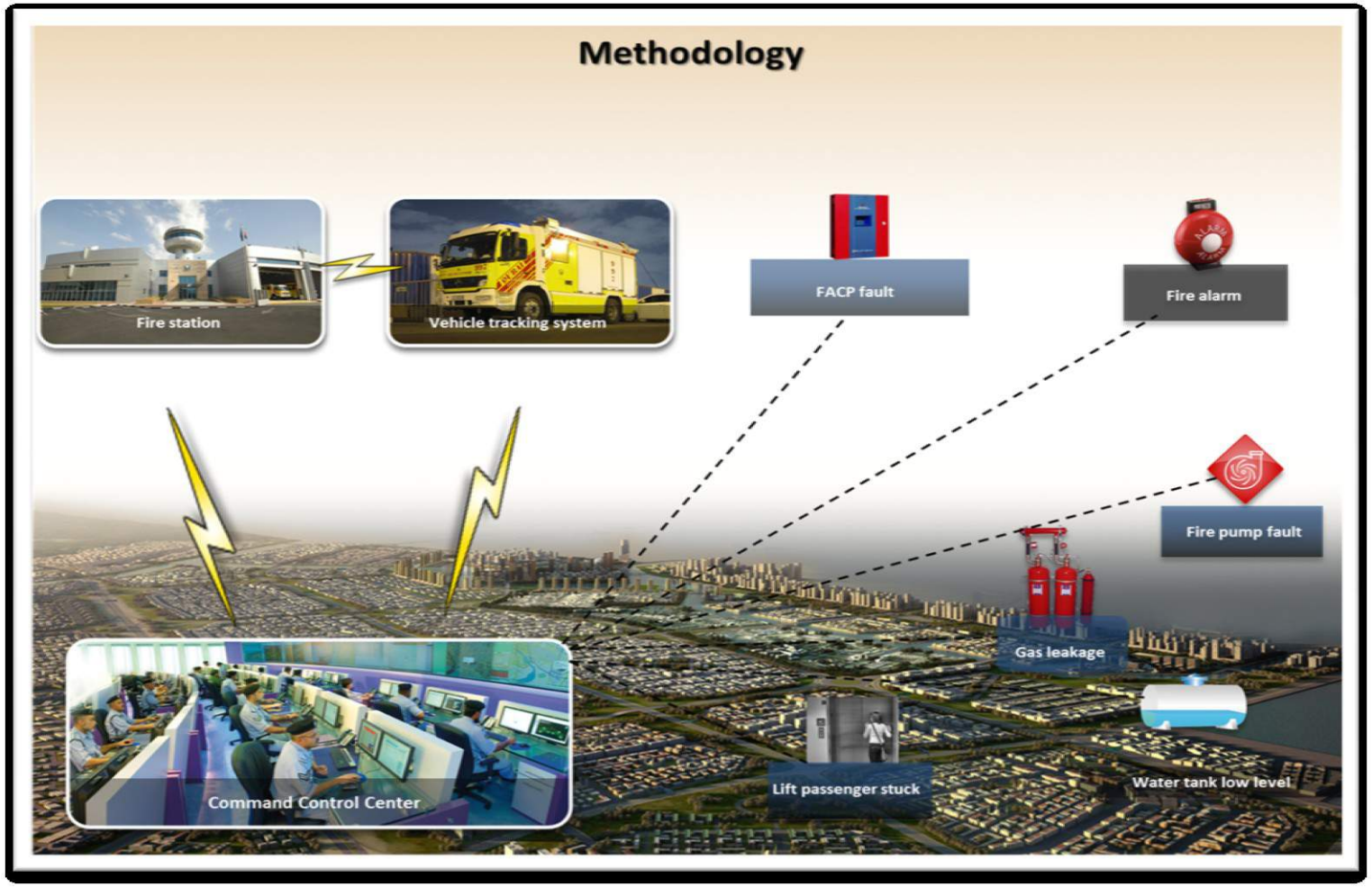
Direct Alarm System Operations



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 Major General Expert Rashid Thani Rashid Al Matrooshi
Thursday 11 June 2015
Dubai Life Safety Dashboard
English
Alarm Type: Lift alarm Building Name: KG TOWER Time Stamp: 2015-06-11 08:50:39.007
Alarm Type: Special alarm Building Name: BAYSWATER AT BUSINESS
DUBAI
CIVIL DEFENCE
Live Incident Monitoring
Live Vehicle Monitoring
Incident Report - 2014
Houses
Residential
High towers
Commercials
Industrials
Government
Building under construction
maritime transportation means
Farms and forests
Residues and waste
Today's Temperature
41 °C
High
30 °C
Low
Wind: 20 km/h
Humidity: 47 %
Live Vehicle Status
Total Vehicle(s)
307
Running Vehicle(s)
80
Stopped Vehicle(s)
188
Maintenance Vehicle(s)
39
Faulty Panel System (Current)
1000+
PUMP
82
GAS PANEL
1000+
LIFT
1000+
FIRE PANEL
Life Safety Alarms
Monthly Alarms - Area Wise
No of Alarms
2014-06
2014-09
2014-12
2015-03
2015-06
ALHP ALKA ALQS ALQZ ALRA ALST ALSY BRSH DIPS HATA JAFZ JUCD MNRA MRSA NRCD PRSD
Alarm Report – Building Category Wise (Annual)
Bur Dubai
Deira
Hatta
Jebel Ali
We are ready to connect all smart government platforms to Dubai Civil Defence Platform
We support the Smart Dubai initiative
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Welcome Green Building
Thursday 11 June 2015
Dubai Building Dashboard
English
Alarm Summary (Annual)
FACP
GAS PANEL
LIFT
PUMP
Life Safety Alarm Breakdown (Annual)
Alarm Count
2014-06
2014-12
2015-05
2014-08
2014-11
2015-02
2015-06
FACP
Pump
Water tank
GREEN BUILDING-
G+4
0503922709
Dubai, UAE
Status - Connected
Upload floor plan
People Counter
0 0 0
Today's Temperature
41 °C
High
30 °C
Low
Wind: 16 km/h
Humidity: 39 %
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
Satellite
Google
Imagery ©2015 TerraMetrics
Terms of Use
We are ready to connect all smart government platforms to Dubai Civil Defence Platform
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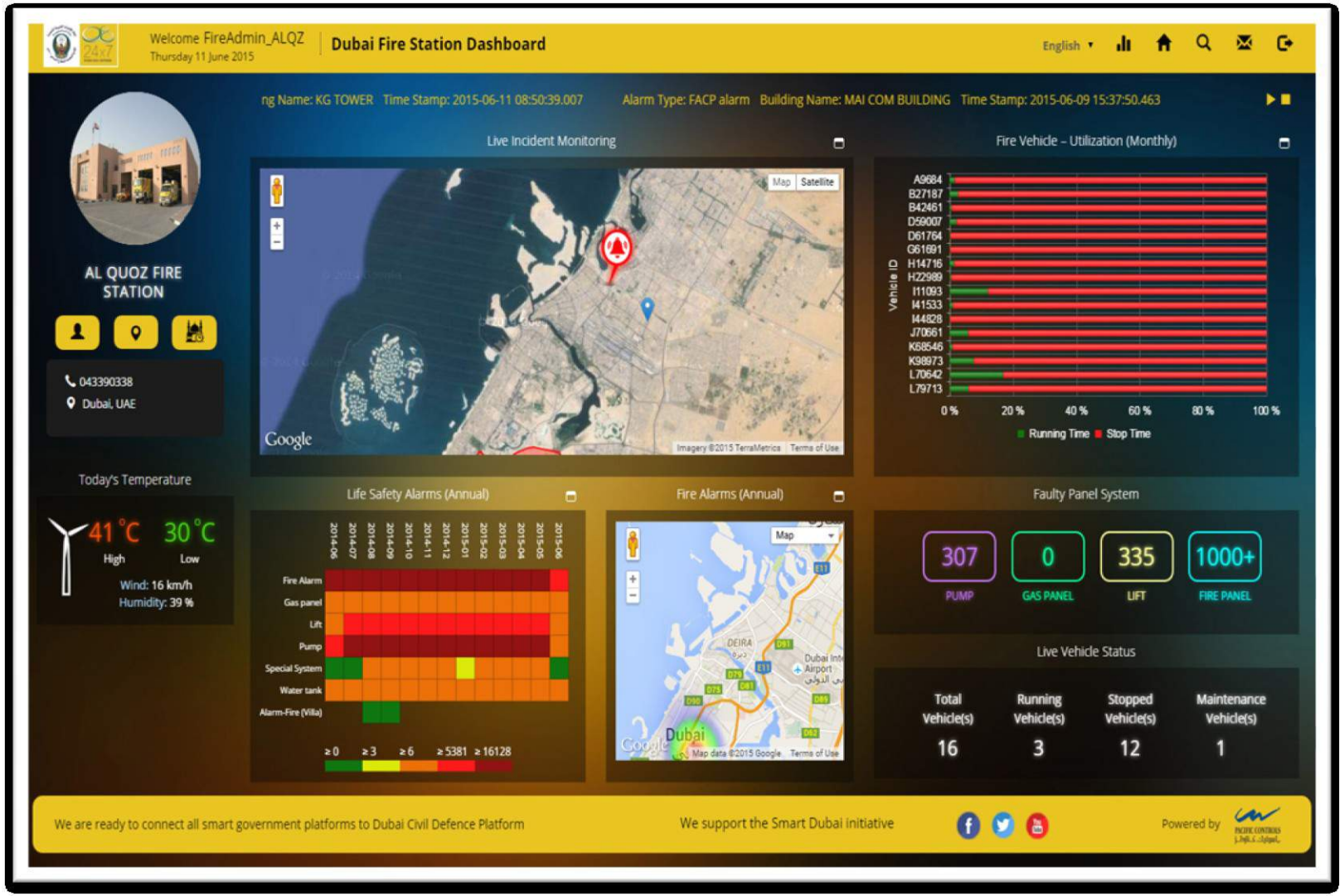
Welcome FireAdmin_ALQZ
Thursday 11 June 2015
Dubai Fire Station Dashboard
English
ng Name: KG TOWER Time Stamp: 2015-06-11 08:50:39.007
Alarm Type: FACP alarm Building Name: MAI COM BUILDING Time Stamp: 2015-06-09 15:37:50.463
AL QUOZ FIRE STATION
043390338
Dubai, UAE
Today's Temperature
41 °C
High
30 °C
Low
Wind: 16 km/h
Humidity: 39 %
Live Incident Monitoring
Map
Satellite
Google
Fire Vehicle – Utilization (Monthly)
Vehicle ID
A9684
B27187
B42461
D59007
D61764
G61691
H14716
H22989
I11093
I41533
I44828
J70661
K68546
K98973
L70642
L79713
0 %
20 %
40 %
60 %
80 %
100 %
Running Time
Stop Time
Life Safety Alarms (Annual)
Fire Alarm
Gas panel
Lift
Pump
Special System
Water tank
Alarm-Fire (Villa)
≥ 0
≥ 3
≥ 6
≥ 5381
≥ 16128
Fire Alarms (Annual)
Map
DEIRA
Dubai
Faulty Panel System
307
PUMP
0
GAS PANEL
335
LIFT
1000+
FIRE PANEL
Live Vehicle Status
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16
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Stopped Vehicle(s)
12
Maintenance Vehicle(s)
1
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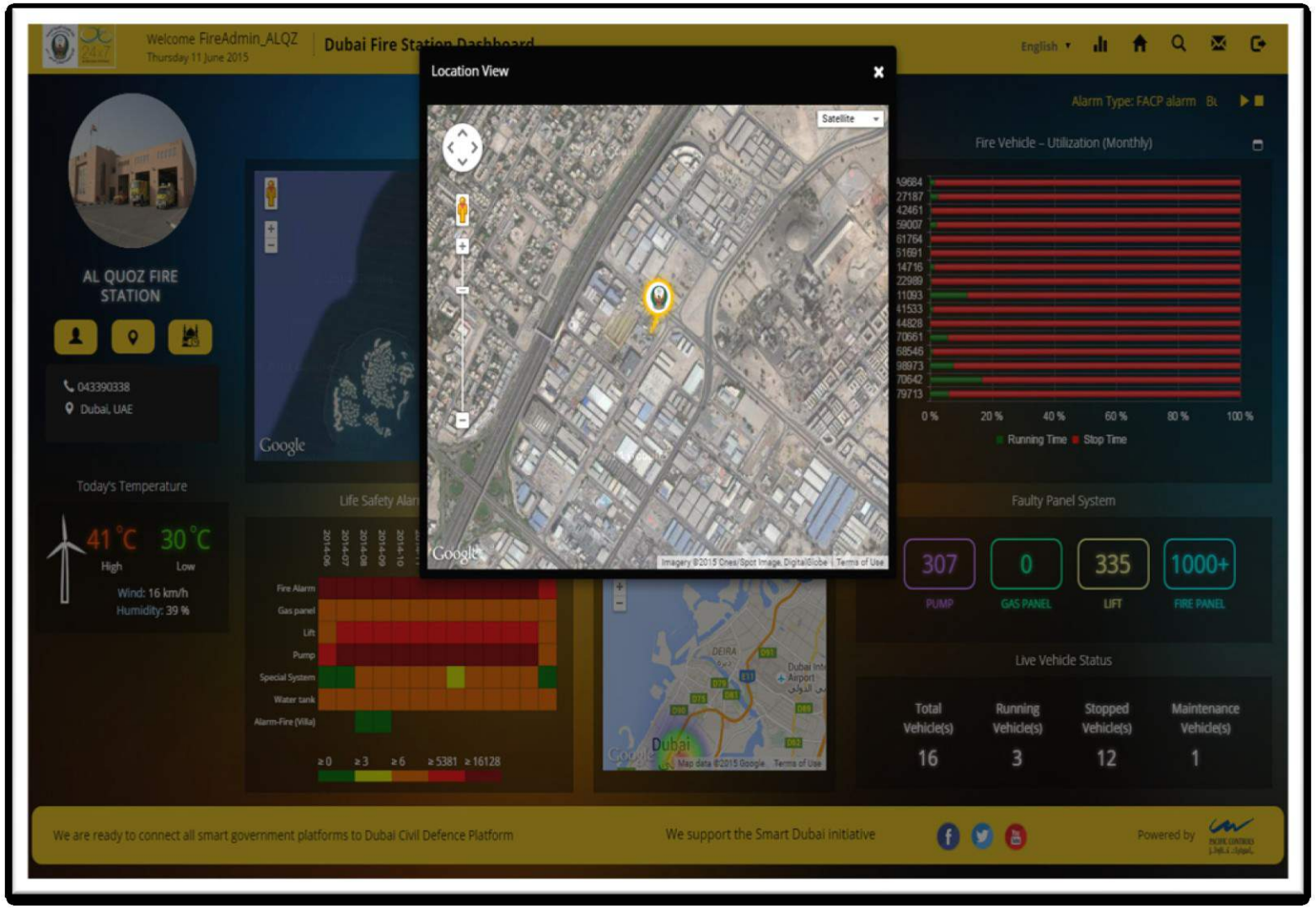
Welcome FireAdmin_ALQZ
Thursday 11 June 2015
Dubai Fire Station Dashboard
English
Location View
Satellite
Alarm Type: FACP alarm
Fire Vehicle – Utilization (Monthly)
AL QUOZ FIRE STATION
043390338
Dubai, UAE
Today's Temperature
41 °C
High
30 °C
Low
Wind: 16 km/h
Humidity: 39 %
Life Safety Alar
Fire Alarm
Gas panel
Lift
Pump
Special System
Water tank
Alarm-Fire (Villa)
≥ 0
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≥ 6
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Faulty Panel System
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PUMP
0
GAS PANEL
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LIFT
1000+
FIRE PANEL
Live Vehicle Status
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16
Running Vehicle(s)
3
Stopped Vehicle(s)
12
Maintenance Vehicle(s)
1
Running Time
Stop Time
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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 51st 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