



AIA Middle East

A309

## The Safety Design in Buildings Conference

PROPERTY PROTECTION –

an Insurer's view

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September/October 2013



redefining / services

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# Course Description

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To give participants an overview of insurers requirements on property protection.

- AXA MATRIX Risk Consultants are a Risk Consulting Company dedicated to Loss Prevention, delivering both Bundled and Unbundled Services.
- In 2012, Business Insurance ranked AXA MATRIX Risk Consultants the 7th largest Property Loss Control Consultants company in the US with revenues of \$20.5 million for unbundled property loss control consulting services.
- Our engineering offices are strategically located to make our specialized teams available to our global customers.
- With more than 160 engineers located across 4 continents and backed by over 35 years of risk consulting experience in a variety of business sectors, we provide available expertise to help clients identify and manage their key operational risks and exposures.
- [www.axa-matrixrc.com](http://www.axa-matrixrc.com)

AXA Matrix provides the following loss prevention services worldwide:

- Account Engineering Services
- Fire Loss Prevention
- Fire Protection Consulting
- Machinery Breakdown Loss Prevention
- Combustion Safeguard Services
- Infrared Maintenance and Reliability Solutions
- Natural Catastrophe Analysis
- Casualty/Liability Consulting
- Environment Risk Consulting
- Construction Risk Consulting
- Various Risk Tools



# AXA involvement in KSA

- AXA is largest non-life insurer in GCC, with more than 60 years in region
- In Saudi Arabia we operates as AXA Cooperative Insurance; involved more than 30 years in KSA
- Revenue in KSA is over SAR 1.6 billion
- KSA is key market for AXA group
- In 2012 AXA Cooperative had 4,970 property policies on it's books
- We are represented with 3 branches being Al Khobar, Riyadh and Jeddah.
- <http://www.axa-cooperative.com/ksa/en>

# Why are Insurers concerned?

April 10 2013 | Last updated 4:00 January 01, 1970

## **gulfnews.com**

### **UAE | Emergencies**

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## **Towers on fire in the UAE - 2010-2012**

Deaths or injuries reported in some incidents

staff report  
Published: 21:30 November 19, 2012

**GULF NEWS**

Timeline - High-rise building fires in the UAE

18 November 2012

A massive fire broke out at Tamweel Tower in Jumeirah Lakes Towers (JLT) at around 2am in Dubai. No injuries were reported

06 October 2012

A fire in a 13-storey Saif Belhassa building in Tecom, Dubai injured 2 people and damaged at least 9 floors

28 April 2012

Hundreds of family were displaced after a massive fire broke out in the 40-storey Al Tayer Tower near Al Nahda park in Sharjah

25 January 2012

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Lee Hoagland / The National



high rise fires in dubai  Search

93,300,000 results

WEB IMAGES VIDEO SHOPPING BLOGS MORE

[Fire damages high-rise under construction in Dubai - Yahoo! News](#)  
DUBAI, United Arab Emirates (AP) — Dubai police say a major fire broke out in a high-rise building under construction near the world's tallest skyscraper ...  
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[Fire forces evacuation of high-rise in Dubai - Yahoo! News](#)  
DUBAI, United Arab Emirates (AP) — Rescue crews in Dubai have evacuated a 34-story residential tower after a fire gutted portions of the building. There ...  
[news.yahoo.com/fire-forces-evacuation-high-rise-dubai-](#) - [Cached](#)

[High Rise Fires In Dubai - Image Results](#)

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[Fire damages high-rise under construction in Dubai - no ...](#)  
DUBAI, United Arab Emirates — Dubai police say a major fire broke out in a high-rise building under construction near the world's tallest skyscraper, but ...  
[www.foxnews.com/world/2012/03/02/fire-damages-high-rise-](#) - [Cached](#)  
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[Fire damages high-rise under construction in Dubai | News ...](#)  
DUBAI: Dubai police say a major fire broke out in a high-rise building under construction near the world's tallest skyscraper, but there were no immediate reports of ...  
[www.dailystar.com.lb/news/middle-east/2012/Mar-02/200079-](#) - [Cached](#)

[High Rise Fires In Dubai - Video Results](#)

[More High Rise Fires In Dubai Videos »](#)

[Major fire at a high-rise in Dubai | NDTV.com](#)  
DUBAI: Rescue crews in Dubai early in evening evacuated a 34-story residential tower Sunday after a fire gutted portions of the building, police said. The blaze charred the ...  
[www.ndtv.com/.../major-fire-at-a-high-rise-in-dubai-200767](#) - [Cached](#)

[Dubai High-Rise Fire - My Firefighter Nation](#)  
DUBAI, United Arab Emirates (AP) — Rescue crews in Dubai safely evacuated a 34-story residential tower Sunday after a fire gutted portions of the building, pol...  
[my.firefighternation.com/photoalbum/dubai-high-rise-fire-](#) - [Cached](#)

[Dubai police: High-rise safely cleared after fire](#)  
Dubai police: High-rise safely cleared after fire blaze charred the outside of the structure and sent smoke drifting over a major ...  
[www.southtoday.com/story/news/world/2012/11/18/fire-dubai-](#) - [Cached](#)  
[More results from southtoday.com »](#)

[BBC NEWS | Middle East | Workers die in Dubai tower fire](#)  
At least two workers have died and dozens were injured when fire broke out in a high-rise building under construction in Dubai. Workers were seen on upper floors ...  
[news.bbc.co.uk/2/hi/middle\\_east/2074981.stm](#) - [Cached](#)  
[More results from news.bbc.co.uk »](#)

# How quickly does fire get out of control?



# Insurance Underwriting Requirement

A fundamental requirement of modern underwriting is to have a correct and specified risk assessment at hand which must be easy to understand and as objective as possible. In addition, a technically sound risk assessment is the basis for advice given by the insurer to the insured with regards loss control service.



# Role of Insurance in Risk Management

- No organization or company have reserves or funds available to pay for total losses when it occurs
- An unforeseen setback can be critical to the future of businesses
- Without proper risk management and adequate insurance business who suffer major fires go out of business within 2 years after such a loss
- Insurance is a valuable risk financing tool
- Insurers use the law of large numbers to pay for losses of few by receiving premiums of many
- Main goal of insurance is the priority on the reduction and management of the clients loss exposures involving liability and property damage or loss, and their associated costs.

# Stakeholders in Safe Design & Protection

- Owners
- Operators
- Installers
- Contractors
- Consultants
- Architects
- Designers
- Inspectors
- Authorities
- Tenants
- Codes and standards
- Manufacturers
- Specifications
- ? Insurers

# Insurance Risk Assessment

- RISK = the chance that something adverse will happen
- RISK = combination of the likelihood of occurrence and severity of consequences

$$\text{RISK} = \text{Probability} \times \text{Severity}$$

- What is a "good" risk?
  - Low probability of a large loss
  - If loss occurs, severity is low

Probability	Consequence				
	Insignificant	Minor	Moderate	Very High	Extreme
Almost Certain	M	H	C	C	C
Likely	M	H	C	C	C
Possible	L	M	H	C	C
Unlikely	L	M	M	H	H
Rare	L	L	L	M	M

Level of Inherent Risk	Description	Inherent Risk I *P
Critical	Critical Risk, Immediate action required	Over 260
High	High Risk, Corporate senior management attention needed to develop and possibly initiate action steps in the near future	151 to 260
Moderate	Moderate Risk, Functional head attention needed	76 to 150
Low	Low Risk, Manage by routine procedures	Less than 75

# How do we try and ensure “good” risks

- Segregation
  - Not all in one building
  - Separation of hazardous areas
  - Non combustibile construction
- Good, Adequate Effective Protection
  - Different design options
  - Evaluate against acceptable standard (NFPA: FM Global)
- Fire and Safety Measures
  - Policies; procedures and working methods
  - Minimize causes of fires



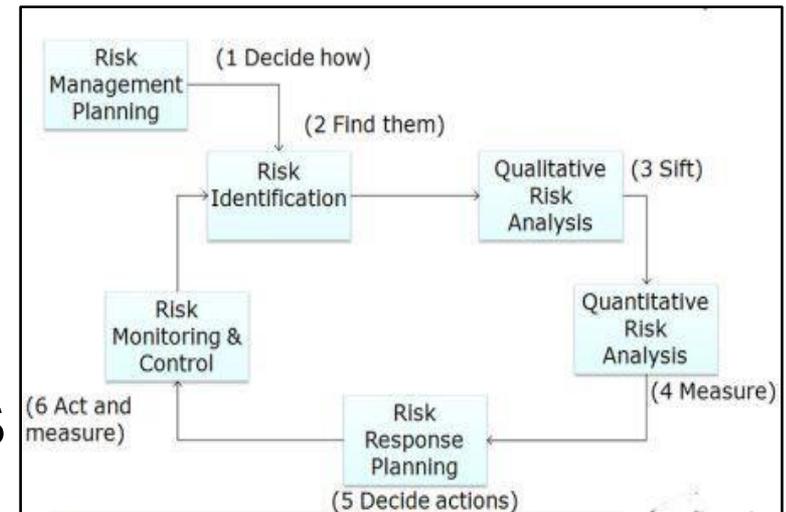
# What do Insurers Evaluate?

- Risk Management
- Passive Protection
- Occupancy Hazard
- Utilities
- Human Element
- Active Protection
- Detection/Surveillance
- Third Party Exposure
- Business Continuity



# Risk Management

- Determine risk appetite of client
- Risk structure in place
- Business continuity
- Loss prevention policies
- Loss prevention programmes
- Risk registers



# Passive Protection

- Construction material of buildings
- Separation between buildings
- Are there firewalls/separation within
- Smoke/Heat Ventilation
- Sealing of openings
- Communication via stairwells and service shafts
- Flammable insulation
- Sizes of fire areas



# Occupational Hazards

- Automatisatisation and process hazards
- Internal layout
- Fire load
- Hazardous activities
- Storage risks
- Utilities
- Technical condition
- Maintenance program & schedule
- Specific monitoring/protection



# Plant Safety/Human Element

- Emergency Procedures
- Fire safety regulations
- Safety/fire control
- Supervision of contractors
- Safety awareness
- Housekeeping
- Smoking controls
- Hot work controls

Safety



allied plant & safety  
aps  
limited



No access for pedestrians



Industrial vehicles



Eye protection must be worn

Risk & COSSH Assessment

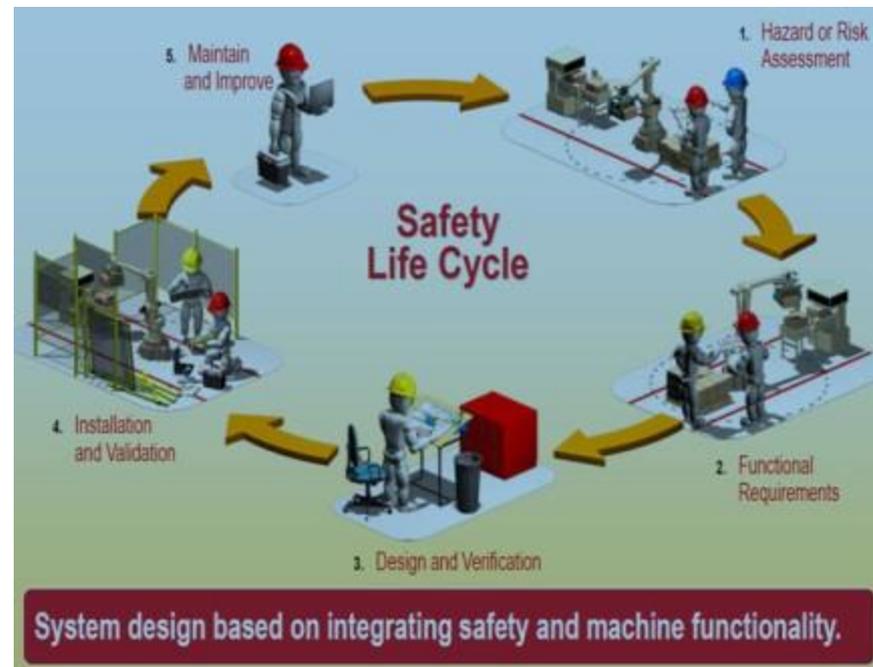
Health & Safety Policy's

Audits & Inspections

Advice/Monitoring

CDM Regulations

Safety Awareness



# Fire Fighting Protection/Equipment

- Portable fire fighting equipment
- Fixed fire fighting installations
- Special extinguishing/protection equipment
- Fire water supply and reticulation
- Fire brigade
- Maintenance
- Testing and inspection



# Detection/Surveillance

- Fire detection
- Other detection
- Alarms monitoring
- Access control
- Watchmen services
- Patrolling
- CCTV
- Burglar alarms





# Business Interruption

- Analyze business/Market knowledge
- Labour requirements
- Competition
- Bottle necks
- Dependencies
- Effects of damage
- Repair facilities
- Contingency plans - BCP?



# Concerns of Insurers to have a “good” risk

- Segregation
  - Difficult to recommend to improve separation of risk
  - Costly to change to non combustible construction
  - Costly to separate or move hazards
- Good, Adequate Effective Protection
  - Clients ask why was it not required during design
  - Authority already approved (e.g. Civil Defense Certificate)
  - It can be costly
- Fire and Safety Measures
  - Normally insurers only option for improvement
  - It would not always minimize the loss

# Concerns about Civil Defence Certificate

- Enforcing mandatory life safety code and not always property protection

- It's a known fact that we have seen Civil Defence Certificates issued where:

- Fire pumps are undersized
- Fire pumps not operational
- Fire equipment not tested/commissioned properly
- Where proper fire protection is not installed
- Risk are not safely managed
- Certificates issued before protection operational
- Emergency exits are not available



- During loss investigations we find concerns such as:
  - Combustible construction used
  - Equipment not maintained and tested

# Other concerns when we evaluate risks

- Difficulty to determine fire ratings and/or obtain info on construction materials
- Clients not having the design parameters of protection measures
- Lack of fire pump flow testing including lack of acceptance test results with shop curves not being available
- Lack of maintaining proper sealing of penetrations
- Lack of fire door management
- Lack of adequate procedures in place
- Lack of electrical hazard management and maintenance

# Typical electrical hazard



# So why?

- Do we install hazards such as transformers inside buildings with out
  - proper firewall separation
  - or automatic fixed fire protection
- Is the end user always aware of these hazards
- Is cabling between rooms not sealed with fire retardant material
- No containment provided to stop fire spread of oil in transformer



# Codes and Mandatory requirements

- Various codes around the world is used
- Quality design review includes life safety; property protection and continuity of operations
- Life safety objectives are strictly mandated
- Property protection not as strictly mandated
- Property Insurers are concerned about property loss; but don't want to see lives lost either
- **What is obvious is that insurers does not play an appropriate active role on the building design process**

# Possible reasons for non involvement

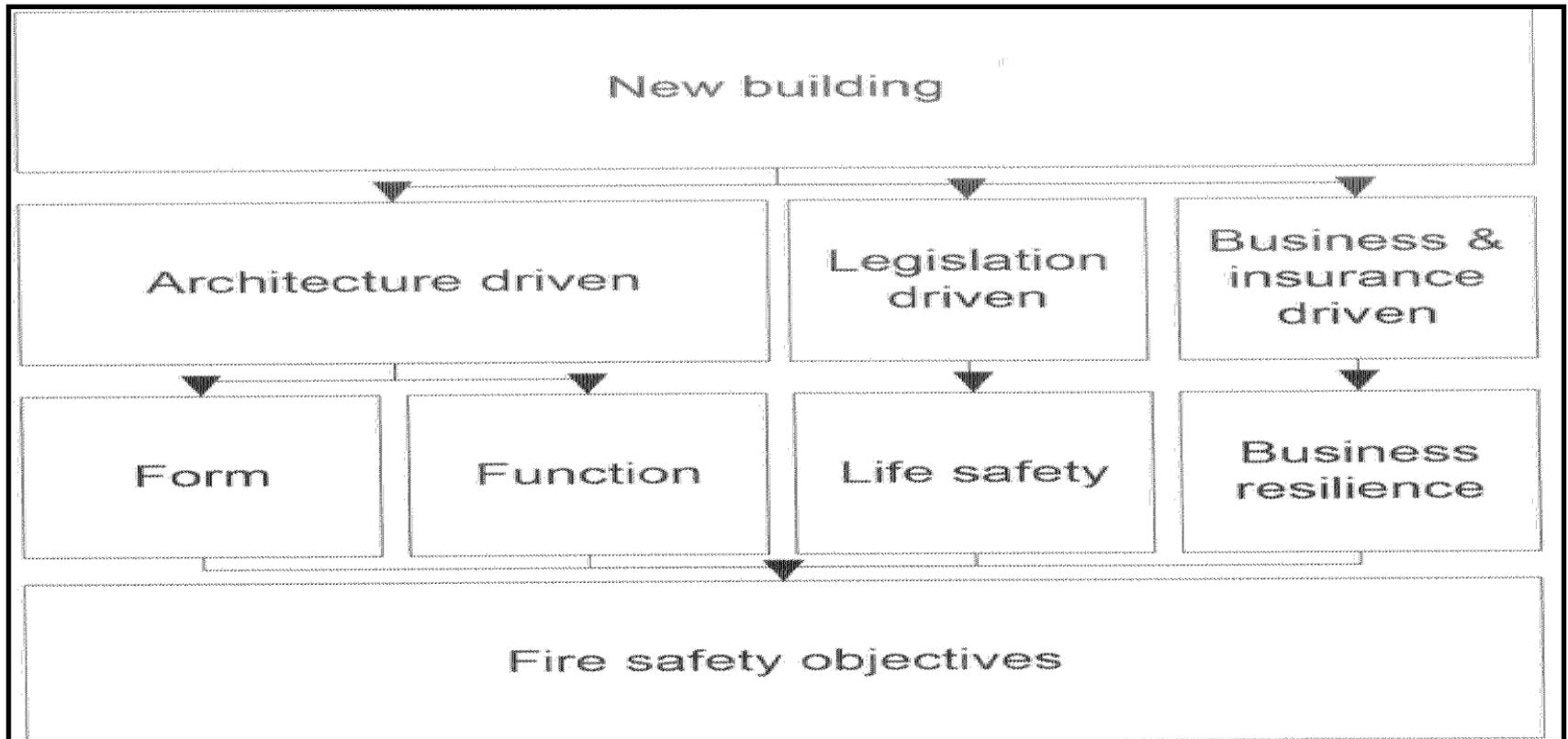
- Lack of knowledge and understanding
- Code-compliant vs. performance based fire engineering designs
- Insurers not known at conceptual design stage
- Construction insurance vs. Property insurance
- Construction insurers normally organized by contractors
- Insurance brokers
- Insurers could ask for more than required
- End users (clients) misinformed about benefits and market advantage robust design of buildings and facilities

# Role of Insurers

- Insurers have a big commitment to risk management of properties they have financial interest in
- Lack of skills could be a problem
- Authority is limited
- Even with the best intentions and regardless of whether the insurer is involved in design process or not; the current approach is not effective and the robustness of the fire engineering design becomes questionable

# New Standard in UK

September 2012 – PD 7974-8 – Application of fire safety engineering principles to the design of buildings – Part 8



# That brings us to what can be done?

Just to note a few obvious pointers; we should consider:

- Ensure that all parties involved should take responsibility for ensuring compliance to safety measures and that include owners with their insurers; designers, architects; construction companies; building management operating companies; also including tenants and the public itself.
- Ensure approved fire safety consultants are appointed in design phase of projects
- Educate people such as owners and tenants on adequate fire protection measures and protection
- Form liaising groups between authorities; insurers; designers; consultants; contractors; etc. To have a common understanding of fire protection standards and requirements
- **Sprinklers** save lives and protect property from fires.

# What Risks are YOU taking?



Don't let this happen to you or your client!



This concludes The American Institute of Architects  
Continuing Education Systems Course

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