

WSD

Façade Refurbishments for Safety – The Developers' View

Windows Doors and Facades Conference
– Dubai 2019

Andy Dean FCIOB, FSFE

Head of Façades

**SAFETY
DESIGN
IN
BUILDINGS**

Andy has over 30 years of experience in the field of Building and Construction, ranging from structural testing within the nuclear industry to fire testing. Having established the Dubai Facade Technology Centre and Laboratory in 1997, and operated it for 10 years, he has particular knowledge of the design and weathertightness testing of facades, curtain walling and building envelope systems; and business life in the Middle East.

He has carried out many consultancy projects as a third-party specialist in the field of building envelope technology and combines that with his fire industry experience to deliver added value.

Over the last 5 years he has had a strong focus on the refurbishment and technical performance enhancement of façades on several major buildings in the region, as they have come to the end of their first life cycle.

Andy is a Fellow of the Chartered Institute of Building, Fellow of the Society of Façade Engineers (CIBSE) and member of the Glass and Glazing Federation; holding or having held senior committee positions in the local chapters of these organisations.

As a façade consultant he continues to provide input into the GCC codes and is a regular speaker at industry technical seminars across the region.

Copyright Materials

This presentation is protected by international copyright laws. Reproduction, distribution, display and use of the presentation without written permission of the speaker is prohibited.

© WSP Middle East 2019

Learning Objectives / Agenda



- **Context - façade refurb**
- **Sectors**
- **Factors**
- **Opinions**
- **Conclusions**

Context – Arabian Peninsula - History



Nakhal Fort. Source: Wikipedia

– **Military**

Context – Arabian Peninsula - History

— Religious



Al Badiya Mosque. Source: Wikipedia

Context – Arabian Peninsula - History

7



Source: Architect Middle East

– Homes in cities

Context – Arabian Peninsula - History

8



Bedouin Tent. Source: Green Prophet. Marsh Arabs: Scribol

— Homes for the Bedouin and Marsh Arabs



Context – Arabian Peninsula - History



Palm branch houses. Source: Abudhabihistory.com

– Settled villages

Context – Arabian Peninsula - History



- Rendered block wall and palm roof

Block wall. Source: Tes

Context – Arabian Peninsula - History

— First 'modern' houses



Pre-1970 Muttrah Oman. Source: Amazing Oman

Context – Arabian Peninsula - History



Karama, Dubai. Source: The National

— First 'modern' apartments

Context – Building Generations



Dubai World Trade Centre. Source: Pinterest

– First ‘modern’ towers

Context – Building Generations



– Towers

Modern Towers. Source: ArabianIndustry

Context – Building Generations

15



Emirates Towers. Source: CTBUH

— More towers

Context – Building Generations



Burj Al Arab. Source: Trip Advisor

- Iconic towers
- international landmarks
and statements

Context – Building Generations



Kingdom Centre KSA. Source: Kingdom Centre

- Iconic towers
cultural shifts

Context – Building Generations



Burj Khalifa. Source: Wikipedia

- Iconic towers
truly global statements

FACADES AND FIRE

The Essential Elements

**Andy Dean BSc (Hons),
MCIQB, FSFE
Head of Façade
Engineering
WSP**

Doha, Qatar, June 2014



Safety Design in Buildings



Doha Conference

Renaissance Doha City Center Hotel June 17, 2014



Fires – Sharjah 2011 – Kuwait Tower



- Fibreglass facade
- Originally thought to be a gas bottle explosion
- Later found to be a discarded cigarette
- Ignited 'rubbish' on a balcony

Fires – Dubai 2012 – Tamweel Tower



- ACP facade
- Discarded cigarette
- ‘...ignited the cladding’
- Probably ignited something else, and then the cladding



Fires – Dubai 2015 and 2017 – Torch Tower



- ACP facade
- BBQ on balcony
- Ignited the cladding



Fires – Dubai NYE 2015 – Downtown Address



- ACP facade
- Halogen façade lighting
- Ignited the cladding



Fires - Others



- Tecom 2012
- Nasser Tower 2015
- Fountain Views 2017
- Marina Tower 2018
- Zen Tower 2018



Source: Lovin Dubai: YouTube

Guidance on Façades and Fires

Clarifications and Audits

Andy Dean

BSc (Hons), FCIQB, FSFE

Head of Façades

WSP | Parsons Brinckerhoff

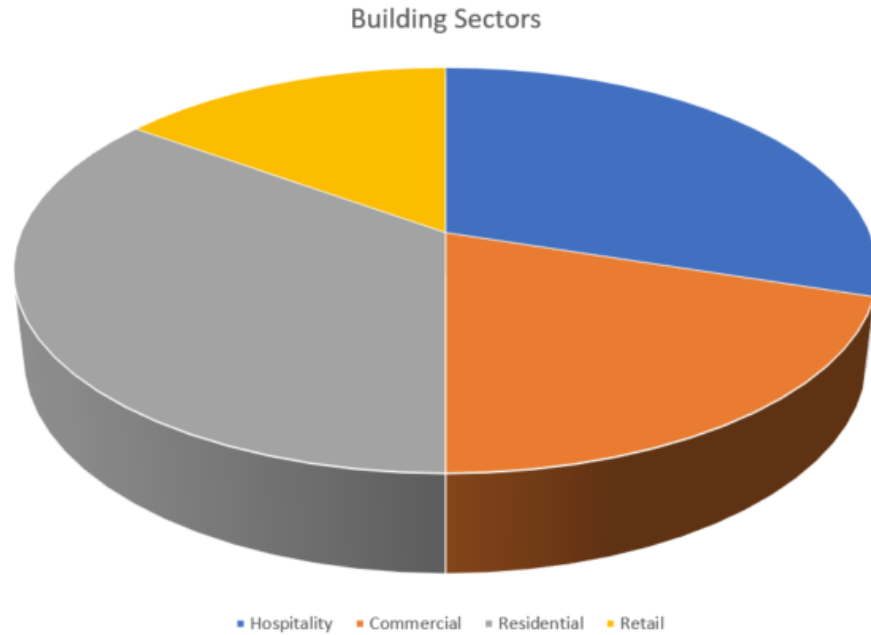


Reality Now – Q4 of 2019



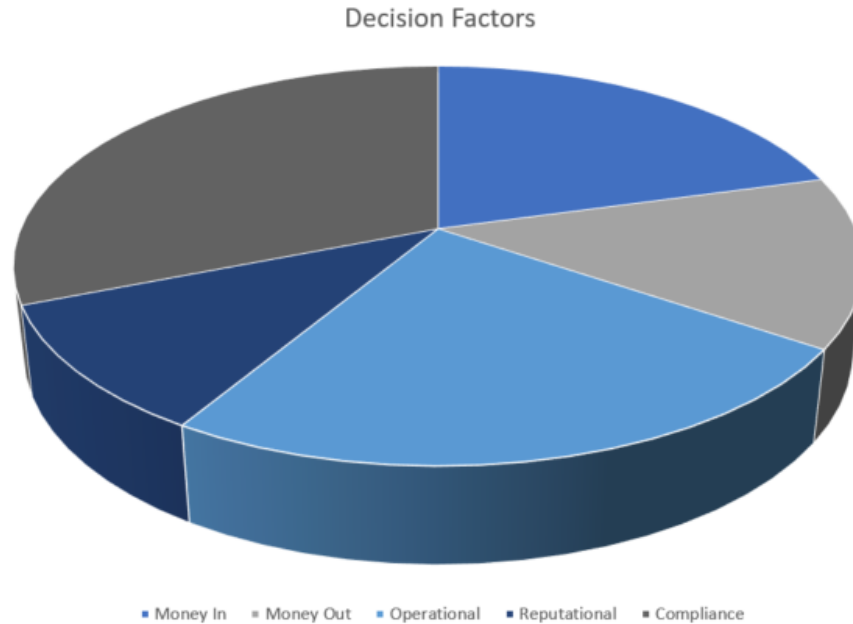
- **Thousands of non-compliant buildings**
- **Hundreds of buildings reviewed**
- **Relatively few buildings refurbished**
- **Even fire damaged buildings only partially refurbished**
- **Why?**
- **Ask the the opinions of:**
 - **developers**
 - **owners**
 - **operators**
 - **associations**

Sectors



- **Hospitality**
- **Retail**
- **Residential**
- **Commercial**
- **Landlord / Owner perspective**

Factors



- **Commercial / Revenue (Money In)**
- **Financial (Money Out)**
- **Operational**
- **Reputational**
- **Compliance**
- **Landlord / Owner perspective**

Commercial / Revenue (Money In)



- **Hospitality**
 - tour operators ask for safety report
 - façade now a focus
- **Retail**
 - façade doesn't create revenue
 - branded façades and advertising do
- **Residential**
 - low impact on revenue
 - limited awareness
- **Commercial**
 - tenant driven only
 - aesthetic is important

Financial (Money Out)



- **Hospitality**
 - rising insurance costs
 - regular updates (not upgrades)
- **Retail**
 - no insurance pressure
- **Residential**
 - some insurance pressure
 - low expenditure important (balance)
 - low rent is most important
- **Commercial**
 - again tenant driven

Operational



- **Hospitality**
 - small adjustments made
- **Retail**
 - huge operational presence
- **Residential**
 - infrequent cleaning
- **Commercial**
 - on-site team - minimal cost

Reputational



- **Hospitality**
 - high potential for pressure
- **Retail**
 - Brand value is high, but considered a low risk
- **Residential**
 - high 'apparent' pressure
 - ignore the risk
 - owners aren't occupiers
- **Commercial**
 - reactive
 - action of change may cause more damage

Risk and Compliance



- **Hospitality**
- pressure, but working with the regulator
- **Retail**
- risk perception very low
- **Residential**
- high concern: low appetite
- **Commercial**
- high risk tolerance
- only if changes in regulation

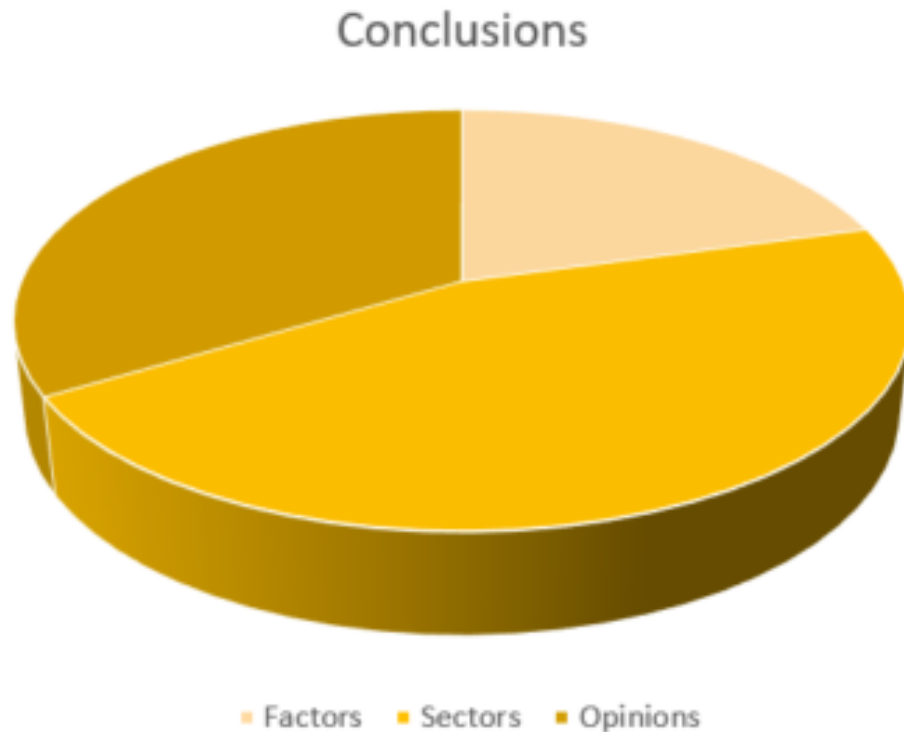
Levels of Action

Action Plan

- ✓ **Who**
- ✓ **What**
- ✓ **When**
- ✓ **How**
- **... tell me again, why?**

- **Hospitality**
 - pressure from market
 - decision at board level
- **Retail**
 - no plans
- **Residential**
 - would like to
 - can we afford to?
 - practical obstacles
- **Commercial**
 - only if forced to

My Conclusions



- **Texture of drivers in different sectors**
- **Some sectors feel more pressure than others**
- **hospitality / resi**
- **Main driver is commercial**
- **Transient occupants**
- **Owners not occupiers**
- **Regulation needs to play a stronger hand if change is to happen**

Thank you!

Andy Dean
andy.dean@wsp.com

wsp.com

wsp