Building Innovations = Insurance Evolved
The Majority of Losses are Preventable

Brion Callori
Senior VP, FM Global Engineering & Research
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Everyone Needs Insurance

Industrial property insurance, underwriting and claims handling “by the numbers” has been around for a long, long time.

Risk Management, Loss Prevention, a whole new idea...
FM Global, founded in 1835 by Zachariah Allen, a prominent textile mill owner, on the idea that property improvements would minimize the chance of fire loss. While virtually unheard of at the time, to Allen and his partners, a proactive approach to preventing losses made good economic sense.
We Investigate, Test & Analyze…
We Document & Document & Document & Document…
We Collaborate, Communicate & Consult…
Market presence

5,000+ employees
1,775 engineers
63 offices worldwide
142 countries
64,000 locations

Global claims adjustment

- 26% of FM Global operations personnel are based outside USA
- FM Global customers have property risks that we insure in more than 130 countries
- 72% of FM Global’s premium is derived from multinational clients
Actuarial Vs. Engineered Performance

Average Tier I and Tier II 2000-2011 Global Gross Loss Ratios

* FM Global numbers are before membership credit

Source: FM Global 2011 Competitive Market Assessment
The World is changing…
Clients have requirements for not just for insurance and construction but improved costing, functional and performance efficiency!!
…Same old same old just doesn’t make the cut
Tradition points to Innovation...

Comprehensive global commercial and industrial property insurance, engineering-driven underwriting and risk management solutions, groundbreaking property loss prevention research and prompt, professional claims handling is a tall order. Research, Standards, Approvals and Engineering offer a path to Innovation.

...to respond to the Changing World and Client Expectations.
1365 Natural Catastrophes in 2012/2013

Geophysical events (earthquake, tsunami, volcanic)
Meteorological events (storm)
Hydrological events (flood, mass movement)
Climatological events (extreme temperature, drought, wildfire)

Source: Geo Risks Research, NatCatSERVICE: as of June 2013
Understanding the Hazard is the first step…
To make the right decisions **you must understand the hazard** and your specific vulnerabilities.
Natural Hazards Research

- Earthquake (incl. tsunami)
- Wind Storm (incl. storm surge)
- Flood (incl. precip/melt)
Earthquake

Surprises?
2004: M9.1 Sumatra ($10B)
2008: M7.9 Wenchuan ($120B)
2011: M6.3 Christchurch ($40B)
2011: M9.0 Tohoku ($200B)
Wind

Surprises?
2003: Hurricane Isabel
2004: Hurricane Charley, Francis, Ivan, Jeanne
2005: Tropical Storm & Hurricane Katrina
2012: Super Storm Sandy
2013: South Central U.S. Tornados
Surprises?
2010: Queensland, Nashville, Southern China
2011: Thailand, Mississippi, Northern New England
2012: United Kingdom, China, Mid Atlantic United States (Sandy)
Flood Modeling and Mapping

- Catchments/Drainage Network
- Landscape/Soil/Rainfall/Streamflow Data
- Hydrologic Modeling
- Hydraulic Modeling
- Land Use Data
- Network
- Flood Discharge
- Flood Elev.
- Max Extent
- 1% & 0.2% Flood Maps

Flood Mapping
Flood Risk Assessments
Flood Loss Prevention in Action
Flood Loss Prevention in Action
Two views of floodwater from Hurricane Sandy: the FDR Drive, near RRB (left) and 62nd Street, near Scholars Residence.

by ZACH VEILLEUX from Benchmarks, Community Newsletter of the Rockefeller University
Flood Loss Prevention in Action
Hospital for Special Surgery
Waterproof ‘Submarine’ Door
Sand bags protect transformers from water
Fuel truck waits outside of HSS in the event additional fuel was needed to power generators.
Using the Right Products
Flood Loss Prevention
FM Approved Flood Abatement Products
National Flood Barrier Testing & Certification Program

The Association of State Flood Plain Managers (ASFPM) in partnership with FM Approvals and the US Army Corps of Engineers National Nonstructural/Flood Proofing Committee (NFPC) are implementing a National program of testing and certifying flood barrier products used for flood proofing and flood fighting. This program currently tests barrier products in two broad categories, Temporary Flood Barriers and Closure Devices.
A New Communication Strategy…

The 100 Year Myth
... introducing Probability and Time

**Probability**

1% (100 yr)  |  0.2% (500 yr)

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**1 in 3 chance**

locations exposed to a 100 year hazard WILL EXPERIENCE AN EVENT every 40 years.

<table>
<thead>
<tr>
<th>Lifetime</th>
<th>Probability</th>
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<tbody>
<tr>
<td>30</td>
<td>26%</td>
</tr>
<tr>
<td>40</td>
<td>33%</td>
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<tr>
<td>50</td>
<td>39%</td>
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1 in 3 chance
Using Technology to make sure…
Arriving at Recommendations for Improvement…

- **FM Global - Engineer**: Rec 80-12-008:
  - Provide automatic sprinklers in the garage.

- **FM Global - Engineer**: Rec 96-07-001:
  - Provide damage-limiting construction for the ammonia compressor room.

- **FM Global - Engineer**: Rec 98-06-002:
  - Provide automatic sprinkler protection throughout the pasta dryers.
Insurance the good ole fashioned way
Insurance, Science and Innovative Technology Join Forces
…and a whole new world emerges.