

Loss Prevention - Current Status -

MARC SCHAEDELI, CEO

THE CONSULTING GROUP AG

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Agenda

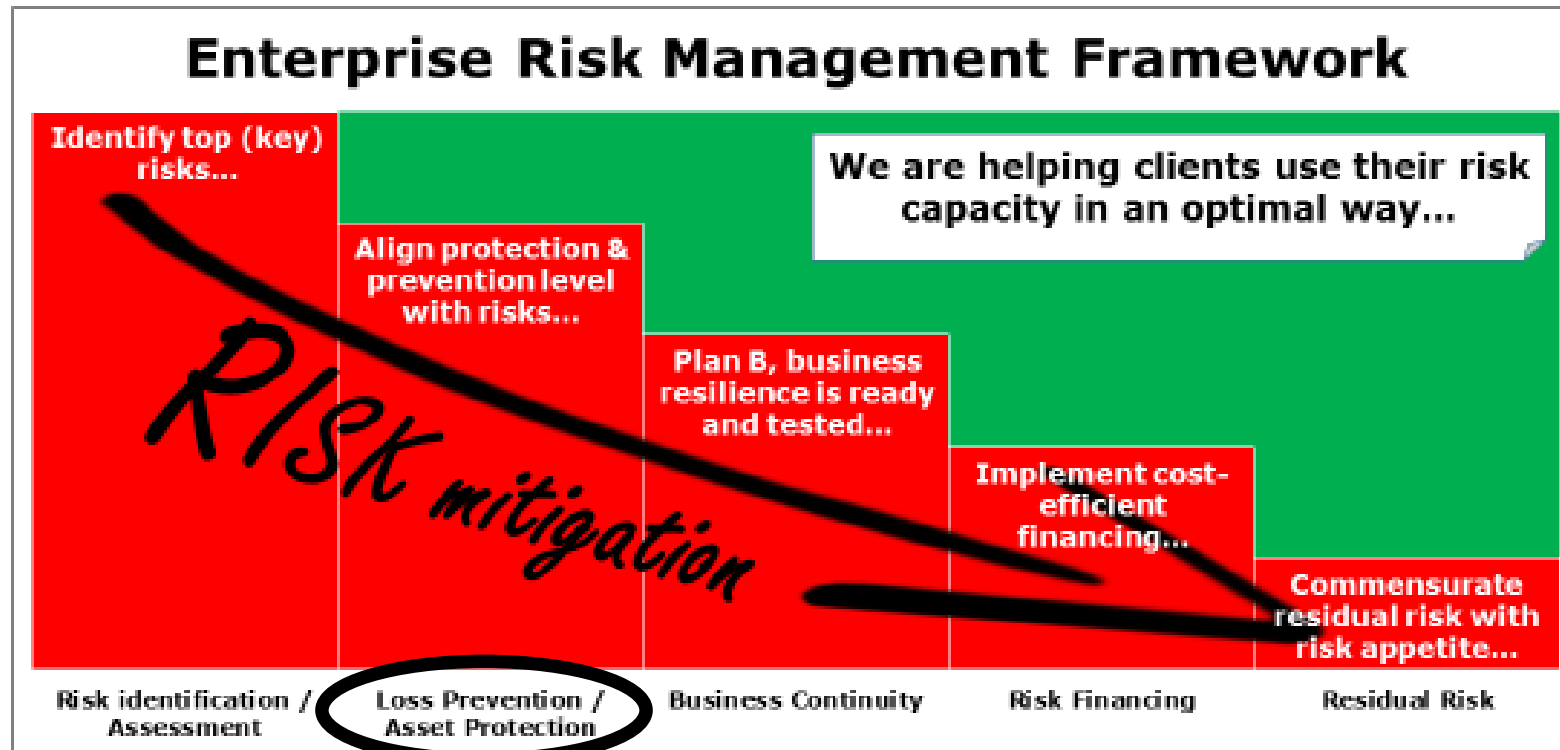
- Loss Prevention – What's in for my company ?
- Loss Prevention Methodology – Example (fire)
- Case studies / videos

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Our vision..

...is to assist you in achieving your objectives and protect your assets.



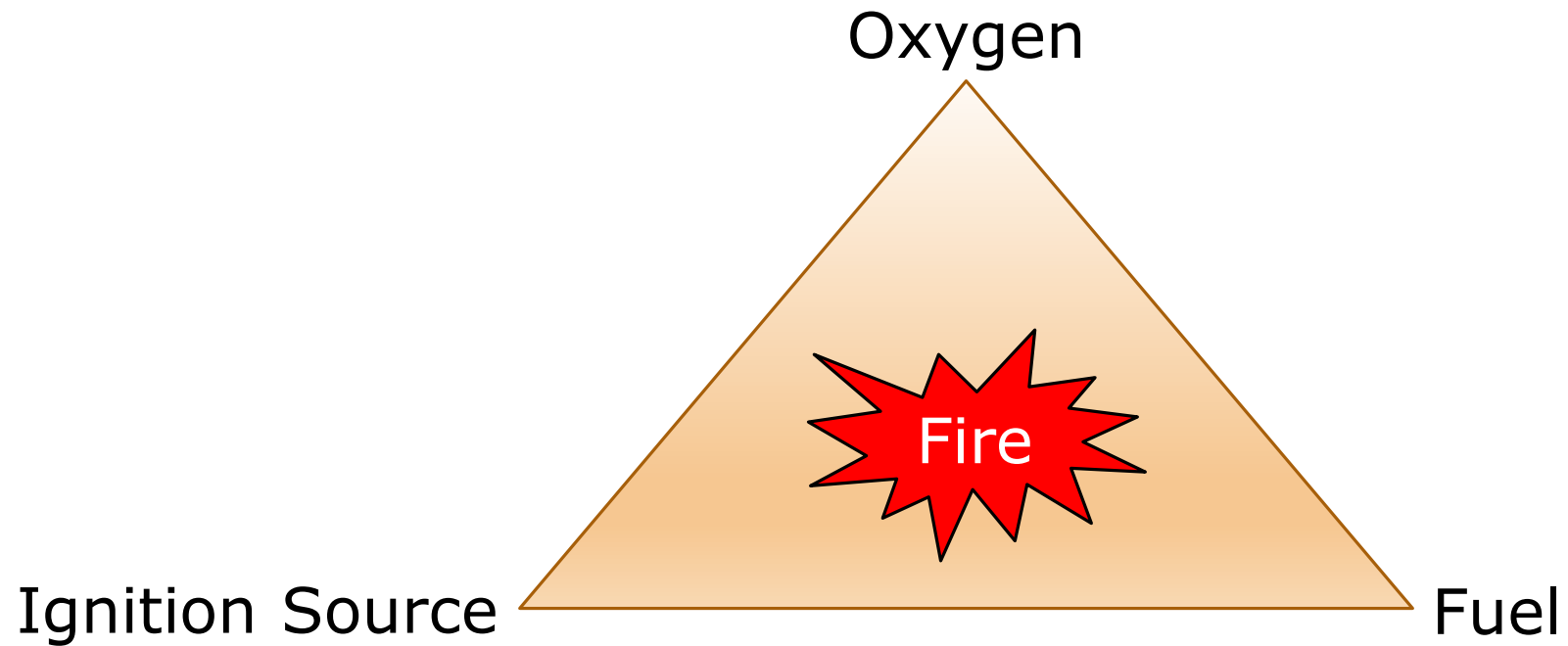
2017 @ The Consulting Group AG (TCG)

Fire & Natural Hazards (earthquake, fire, wind, etc.)

Any major incident will damage your building(s), equipment and/or stock(s):

- Are you prepared to face such a loss (= Property Damage) ?
- Do you know how much time it would take to restart the operations (= Business Interruption) ?

Loss prevention (basics1)



Loss prevention (basics2)

- Do you have prevention / protection system in service ?
- Do the systems work ?
- Are the systems designed adequately ?

Products (quality, food safety, etc.)

Any major incident will damage your reputation and the consumer trust:

- Are you prepared to face such a loss (= Product Liability) ?
- Do you know how much time & money is needed to regain the trust of your customers ?

Finance (interest rate, foreign exchange)

Any major incident will directly impact your profits:

- Which other incidents can generate such financial losses ?
- Are you prepared to face such loss(es) ?

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Loss Prevention (quiz)

Name 5 of the most frequent sources of fire in industrial or manufacturing properties ?

Factor Contributing to Ignition	Fires	Direct Property Damage
Mechanical failure or malfunction	24%	31%
Electrical failure or malfunction	16%	22%
Failure to clean	9%	3%
Heat source too close to combustibles	8%	12%
Cutting, welding too close to combustible	7%	8%
Unclassified factor contributed to ignition	6%	6%
Abandoned or discarded materials or products	5%	1%
Unclassified operational deficiency	4%	3%
Exposure fire	3%	3%
Unclassified misuse of material or product	3%	2%
Improper container or storage	2%	2%
Equipment unattended	2%	1%
Rekindle	2%	0%
Unclassified natural condition	2%	2%
Outside/open fire for debris or waste disposal	2%	1%
Other known factor contributing to ignition	13%	16%

Source: NFPA - Structure Fires in Industrial or Manufacturing Properties reported to U.S. fire departments, by Factors Contributing to Ignition 2006-2010: Annual Averages

Loss Prevention Approach (Property and BI Assessments)

1. Loss Estimates

- Estimated Maximum Loss (worst case scenario)
- Probable Maximum Loss (expected scenario)

Fire EML, PML and Natural Hazards Loss Potentials

Local Currency		Euro					
Peril Conditions	Scenario Condition	Annual Gross Profit/Gross Earnings	Total BI Loss	Total BI Site Value Percentage	Total Site Value	Total PD Loss	Total PD Site Value Percentage
PD / BI	EML	110,818,788	98,628,721	89	112,626,390	90,101,112	80
PD / BI	PML	110,818,788	53,931,810	49	112,626,390	33,787,917	30

2. Risk Grading

- Property Damage - Fire (PD)
- Business Interruption (BI)
- Extended Perils (if applicable)

Risk Factor Information and Assessment

Property - Fire - Risk Grading

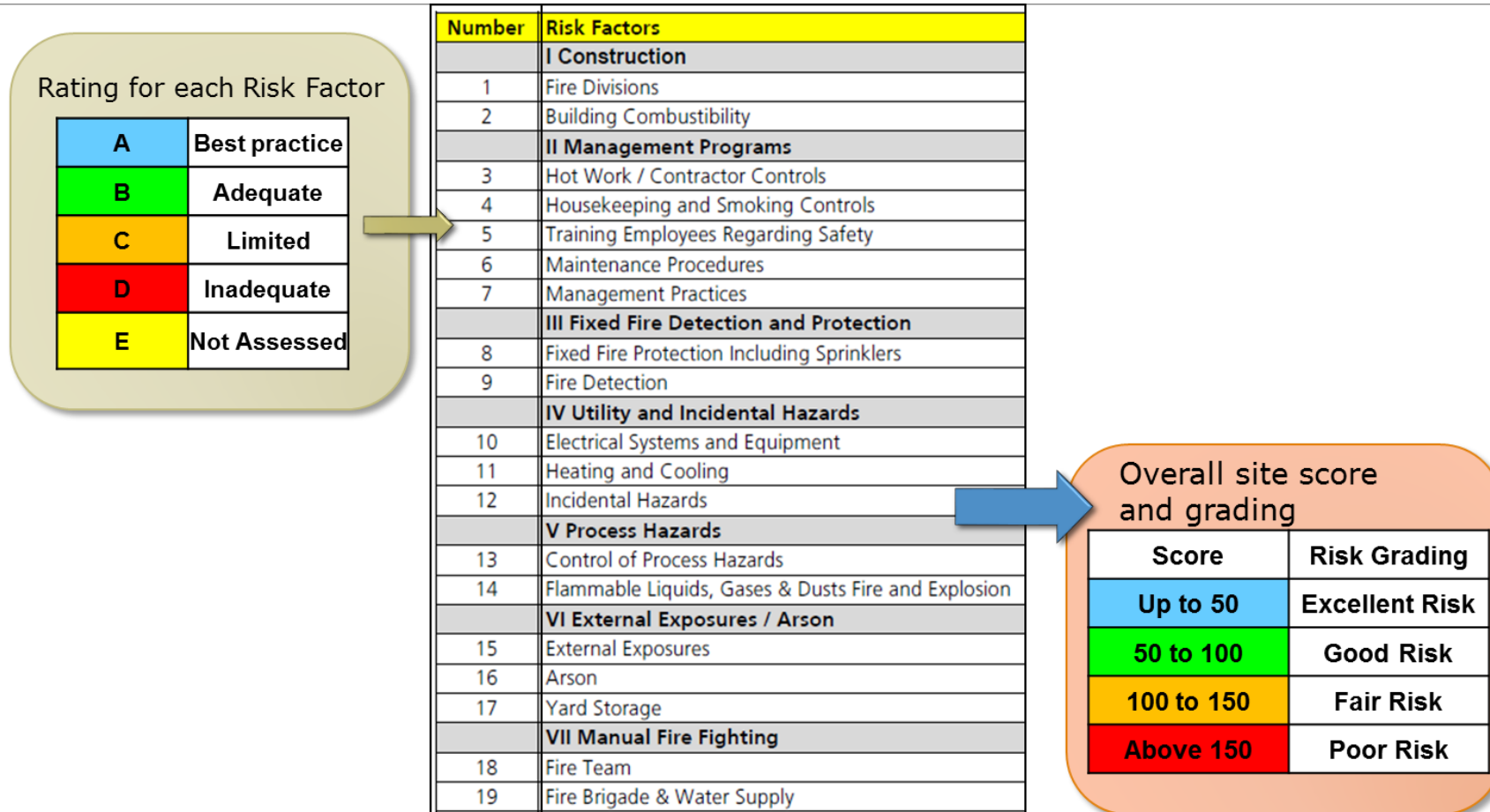
Location	DE PL Luedinghausen ND	
	Rating	
	As Is	To Be
Construction		
Fire Divisions	D	D
Comments	Inappropriate sub-division due to high PML scenario following an explosion. A new Fire Protection Concept has been developed by local management to ensure keeping building structure state of the art. Resulting measures need to be prioritized and implemented. RIA 07824. However, loss scenario will not be reduced.	
Building Combustibility	C	C
Comments	Some roof areas with combustible insulation (finished goods storage with 4,000 m ² , workshop and boiler house with 1,700 m ²).	
Management Programs		
Hot Work / Contractor Controls	B	B
Comments	Contractor control program in place. Hot work permit system established. Typical	

1. Risk Improvement Advice

Risk Improvement Action

Action No. 07824	Prioritize and implement measures of Fire Protection Concept (2015)
Description	Beobachtung: Am Besichtigungstag lag ein aktuelles Brandschutzkonzept (vom 30. Januar 2015) vor. Aktion: Wir empfehlen die abgeleiteten Maßnahmen zu priorisieren und entsprechend umzusetzen. Insbesondere die Überwachung der offenen Palettenüberdachung mit Flammenmeldern sollte mit hoher Priorität erfolgen.
Peril	Fire
Risk Category	Construction
EML/PML Impact	No
Estimated Cost to Complete	243,188 CHF 200,000 EUR

Loss Prevention Approach (fire grading)



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Fire Division (quiz)

1. List examples of fire division:

- Free space between buildings
- Fire wall
- Fire door
- Fire damper
- Floor
- Water drencher

2. What can make a fire division ineffective:

- Storage between buildings
- Fire wall with unsealed cable penetrations
- Insufficient rating of the fire wall/door
- Fire door blocked in open position
- Storage in the opening of a fire door
- Damaged sliding mechanism
- Improper release mechanism

Fire Division (principles)

A location may have one or more fire divisions. Multiple fire divisions can be created by the presence of either physical distance (between two buildings or between combustible materials within a building) or walls (exterior or interior).

Controls:

- The presence of open space, fire barriers, or fire walls to separate values
- Fire-stopping of all pipe and cable penetrations in fire rated walls
- Protection of openings in fire rated walls that is automatic or self-closing
- Presence of fixed fire protection
- The presence of a public fire brigade

[Play video1: Slide fire door testing](#)

Building Combustibility (sandwich panels)

Identify following construction material and rank per combustibility:



Expanded polyurethane
= **Combustible (slow burning)**



Expanded polystyrene
= **Fast burning**



Rockwool
= **Non-Combustible**



LPCB Approved Polyisocyanurate
= **Limited combustibility**

[Play video2:](#)
[Difference between PUR](#)
[and non-combustible panels](#)

Dust Fire and Explosion (quiz1)

What are the 5 conditions for a dust explosion to occur ?

- Fuel
- Oxygen
- Heat
- Dispersion
- Confinement

Dust Fire and Explosion (quiz2)

**List example of materials that can generate dust explosions ?
Are many of them present within usual Nestle operations ?**

- Grain
- Flour
- Starch
- Sugar
- Powdered milk
- Cocoa
- Coffee
- Pollen
- Powdered metals
- Plastic

**[Play video3:
How dust explodes ?](#)**

**[Play video4:
How much damage ?](#)**

Yard Storage (wooden pallets)

**[Play video5:
Why store wooden pallets in separate location ?](#)**

Fixed fire protection system (sprinkler)

**[Play video6:
How effective is a sprinkler ?](#)**