HOW CHANGE THE ROLE OF STATION, HOW CHANGE THE RAIL SECURITY.

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3B Integrated protection

17-18 October 2013
Threats to Railway Infrastructure and Trains

- CYBER ATTACK
- SABOTAGE
- TERRORISM
- ABUSIVE OCCUPANCY
- ACTIVATION OF THE EMERGENCY ALARM ON BOARD
- THROWING STONES
- VANDALISM
- GRAFFITI
- THEFT
- COPPER THEFT
- ROBBERY
- AGGRESSIONS
- OBSTACLES ON THE RAILWAY LINES
- ARSON
Stations: which role in the urban environment?

Major Stations: a prime target

- Major Stations as “open areas"
- Shopping center/Meeting place
- Optional facilities (parking areas, hotels, …)
- Intermodal transport exchange
- Concentration of social decay
- Masterpieces of contemporary architecture

- Easy target, complex environment, hard to protect
- High probability of success
- High economic damage
- Wide eco impact of mass media and on public opinion

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Station security: what it’s all about?

The structural “trade off”

Security in the layout

Security technologies

Information and public awareness

- Prevention of progressive collapse of the building
  - Minimize injuries and loss of lives
  - Facilitate the evacuation and rescue of survivors
  - Contain damages in the vicinity of an explosion
## Civil engineering for risk mitigation

### BLAST

<table>
<thead>
<tr>
<th>Threats</th>
<th>Guidelines</th>
<th>Counter measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fragmenting structural material</td>
<td><strong>Strengthen infrastructure elements as columns, walls and floor slabs</strong></td>
<td><strong>Insulating Concrete Forms (ICF)</strong>&lt;br&gt;<strong>Use of barriers along the building perimeter as planters, bollards other barriers</strong></td>
</tr>
<tr>
<td>Building collapse</td>
<td><strong>Redund load bearing structures</strong>&lt;br&gt;<strong>Designing redundancies into the structure to carry additional load</strong></td>
<td><strong>Metals for structural protection as steel, alluminium, etc.</strong></td>
</tr>
<tr>
<td>Breaking glasses (glazing break)</td>
<td><strong>Minimize the use of windows in facade</strong>&lt;br&gt;<strong>Use proper material</strong></td>
<td><strong>Thermally Tempered Glasses (TTG), Polycarbonate films or Polycarbonate in place of glass</strong></td>
</tr>
</tbody>
</table>

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## Civil engineering for risk mitigation

### CBRN

<table>
<thead>
<tr>
<th>Threats</th>
<th>Guidelines</th>
<th>Countermeasures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unauthorized access</td>
<td>Protect physical accesses</td>
<td>Armoured doors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control access</td>
</tr>
<tr>
<td>CBRN substances spreading</td>
<td>Install air monitoring systems</td>
<td>Sensors and hand-held detection equipment</td>
</tr>
<tr>
<td></td>
<td>Partition the areas</td>
<td>Segregated ventilation ducts and emergency doors</td>
</tr>
<tr>
<td>Contamination of the attacked</td>
<td>Use of non porous surfaces</td>
<td>Training in CBRN awareness as basic characteristics and symptoms of substances</td>
</tr>
<tr>
<td>areas</td>
<td></td>
<td>Use of easy to decontaminate materials</td>
</tr>
</tbody>
</table>

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Security in the layout

**Police Forces Office**
- Maximum visibility to travelers
- Easily access to/from different station areas
- Control Room on site

**Technological premises (Operation Control Center, Energy Power Station, Control Room,...)**
- Strategic building far from crowded area
- Not accessible place

**Commercial Area**
- Far from emergency exit
- Proportional to flow analysis
<table>
<thead>
<tr>
<th>WHERE / WHAT TO USE</th>
<th>CCTV</th>
<th>ACCESS CONTROL</th>
<th>INTRUSION DETECTION</th>
<th>SOS COLUMNS</th>
<th>PASSIVE PROTECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sidewalks, subways, atrium, waiting rooms, ticket office and ticket self machines</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Sensitive and technological premises and buildings</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Accesses and accessible windows in sensitive premises</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Atrium and sidewalks (only if Police is on duty 24hrs/day)</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>External areas of the station</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Procedures and staff training: Emergency plans, and easily accessible procedures/Regular training program/E-learning/Joined emergency plans testing (Police, Fire brigades, Civil Protection)/Debriefing

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The outcome

SECURITY BY DESIGN

- Cost reduction
- Greater chance to mitigate effects of an attack
- Security Standard in civil engineering
- UE Critical Infrastructure Protection legislation compliance
Thank you for your kind attention

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