Integrating occupational health and safety measures into the construction process at Frankfurt Airport

Düsseldorf, 20.10.2011
Dieter Arnold
Fraport AG
Integrating occupational health and safety measures into the construction process at Frankfurt Airport

1. Frankfurt Airport

2. Self-understanding
   1. Task of the occupational health and safety manager
      1. Mutually used infrastructure
      2. Structural health and safety protection in accordance with construction law
      3. Quality assurance is based on the performance phases of the HOAI
   2. Task of the coordinator
      1. Reported incidents 2006 – 2011
   3. Integration of the units under the supervision of the labor director

4. Result
Frankfurt Airport
Yesterday
Frankfurt Airport
Tomorrow

1 Mönchhof Grounds
2 Ticona
3 Northwest runway (expansion)
4 Concourse A-West (FRA North)
5 The Squaire
6 Gateway Gardens
7 CD-Connecting Corridor (FRA North)
8 A380 Maintenance Building
9 Terminal 3 (expansion)

A+A 2011
Frankfurt Airport
Airport Figures

- 19 km² airport grounds
- 83 aircraft movements per hour
- 4 runways of which 1 one only for takeoffs and 1 only for landings
- 2 passenger terminals and 1 AirRail-Terminal (train station for high speed trains)
- 145 gates
- 248 positions
- Air Cargo rail connection
- With over 70,000 people working at the airport, the biggest concentration of jobs at a single location in Germany

Every day:
- 140,000 passengers
- 71,500 pieces of baggage
- 6,000 mt cargo
- 1,270 takeoffs and landings
Frankfurt Airport
Among the Top Ten Worldwide

<table>
<thead>
<tr>
<th>Passengers 2010 (million)</th>
<th>Cargo 2010 (in million tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Atlanta 89.0</td>
<td>1. Hong Kong 4.17</td>
</tr>
<tr>
<td>2. Beijing 73.9</td>
<td>2. Memphis 3.91</td>
</tr>
<tr>
<td>3. Chicago 66.7</td>
<td>3. Shanghai Pudong 3.22</td>
</tr>
<tr>
<td>4. London Heathrow 65.8</td>
<td>4. Incheon 2.68</td>
</tr>
<tr>
<td>5. Tokyo 64.0</td>
<td>5. Anchorage 2.56</td>
</tr>
<tr>
<td>7. Paris CDG 58.1</td>
<td>7. Frankfurt 2.28</td>
</tr>
<tr>
<td>8. Dallas 56.9</td>
<td>8. Dubai 2.27</td>
</tr>
<tr>
<td>10. Denver 52.2</td>
<td>10. Louisville 2.17</td>
</tr>
</tbody>
</table>
Frankfurt Airport
Reasons for Investments

- Expansion
- Terminal Capacity
- New Aircraft Generations
- EU Security Requirements
- Retail Development
- Modernization of Fire Protection
Frankfurt Airport
Expansion projects up to 2020
Frankfurt Airport
The new Northwest runway for aircraft landings only

Length 2800 meters
Independent parallel approaches possible
Increase of aircraft movements from today ~82.5/h, winter 2011/2012:
~90/h, long-term 126/h
Start of runway operation with winter timetable 2011
Frankfurt Airport
Expansion of Terminal 1 with new pier A-Plus

790 meters length
7 positions for big aircraft of which 4 for the A380
Handling of 6 million passengers/annually
Frankfurt Airport
Terminal 3

- A new passenger terminal will be built in the south of the airport on the grounds of the former US Air Base
- 75 aircraft positions
- Approximately 25 million passengers can be handled annually
- Connection north (Terminal 1 + 2) to south (Terminal 3) in 45 min. Minimum Connection Time (MCT) will be maintained by expanding the Skyline
- Construction to start after the new Northwest runway starts operation
- The tender period for the construction of Terminal 3 was completed in the summer of 2005. The architect Christoph Mäckler in Frankfurt was awarded the contract
Frankfurt Airport
The future districts of the Airport City
Frankfurt Airport
CargoCity South must grow along with the airport

- CargoCity Frankfurt in the south of the airport is Europe’s no. 1 air cargo hub with superb connections to roads and railway tracks.
- All important forwarders have branches at Frankfurt Airport.

Future development of CargoCity South:
- Additional 27 hectares for cargo development
- Commissioning of first cargo facilities with the start of operation of the new runway for aircraft landings only
- Goal: 3.16 million tons cargo by 2020
- Further development of the “product” CargoCity Frankfurt for airlines and forwarders
The Importance of the Airport for the Region
Fraport – strong partner in the region

– In 2010, Fraport placed a total of 54,422 orders having a total value of Euro 946.4 million – an average of €247,000 per day
– 31,000 orders totalling Euro 605.5 million were placed at companies located in the Rhine-Main region
– Over 90% of these orders had a value up to €10,000 – specifically smaller companies benefitted from this
– A huge share of these orders (€579.8 million – 61.3 %) were connected to construction activities
– The orders with a high value are subjected to a Europe-wide tender procedure. This underscores the enormous economic performance of this region
Self-understanding

- Owner
- Occupational health and safety manager
- Project
- Project manager

A+A 2011
Task of the occupational health and safety manager
Mutually used infrastructure
Task of the occupational health and safety manager
Structural health and safety protection in accordance with construction law
Task of the occupational health and safety manager
Quality assurance is based on the performance phases of the HOAI

Integration of the occupational health and safety manager

Performance phases

4  Statement performance phase 4
5  Statement performance phase 5
6  Statement performance phase 6
8  Statement final inspection

Project
Task of the Coordinator
Implementation and supervision of the building site regulations
Reported incidents 2006 - 2011
Fraport construction sites

Anzahl der Unfälle  erbrachte Bau- und baunahe Leistungen in Mio.

<table>
<thead>
<tr>
<th>Year</th>
<th>Unfall Count</th>
<th>Work Leistung in Mio.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>40</td>
<td>373</td>
</tr>
<tr>
<td>2007</td>
<td>70</td>
<td>516</td>
</tr>
<tr>
<td>2008</td>
<td>45</td>
<td>546</td>
</tr>
<tr>
<td>2009</td>
<td>46</td>
<td>661</td>
</tr>
<tr>
<td>2010</td>
<td>67</td>
<td>682</td>
</tr>
<tr>
<td>2011</td>
<td>31</td>
<td>557</td>
</tr>
</tbody>
</table>
Reported Incidents in 2011
Causes

<table>
<thead>
<tr>
<th>Cause</th>
<th>Number of Incidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>fallen, stolpert, ausrutscht</td>
<td>11</td>
</tr>
<tr>
<td>angefahren werden</td>
<td>0</td>
</tr>
<tr>
<td>getroffen werden</td>
<td>11</td>
</tr>
<tr>
<td>eingekeilt werden</td>
<td>0</td>
</tr>
<tr>
<td>stechen, klemmen, schlagen, schneiden</td>
<td>4</td>
</tr>
<tr>
<td>Umgebungseinflüsse, wie Beleuchtung, Lärm</td>
<td>3</td>
</tr>
<tr>
<td>verheben</td>
<td>0</td>
</tr>
<tr>
<td>unklicken</td>
<td>2</td>
</tr>
<tr>
<td>Stomschlag</td>
<td>0</td>
</tr>
<tr>
<td>unsachgemäßer Gebrauch von Einrichtungen und Werkzeugen</td>
<td>1</td>
</tr>
<tr>
<td>sonstiges</td>
<td>1</td>
</tr>
<tr>
<td>Gesamtzahl</td>
<td>31</td>
</tr>
</tbody>
</table>
Integration of the units under the supervision of the labor director

- Project
  - Person responsible for task
    - exchange of information
    - arrange
    - participate
    - introduce
  - Project presentation
    - If necessary: integration into the respective project team
  - invite
    - occupational health and safety manager
    - waste inspector
    - water protection officer
    - representative body for disabled employees
    - radiation protection officer
    - work council
Result

The punctual integration of the occupational health and safety manager/coordinate is an important requirement for the project manager.

Economical and safe organization of the projects.

And for Fraport optimization of the planning and construction processes.
Thank you for your attention!