Fall Protection for Engineers

3-day Seminar - 13th to 15th of April 2011 - BG BAU, Haan / Germany

DAY 1 Wednesday, 13th of April, 2011

10:45 a.m.	Registration of participants
11:15 a.m.	**Introduction** *Karl-Heinz Noetel* *BG BAU - German statutory institution for industrial health and safety in the construction industry* *Andrew Sulowski* *Sulowski Fall Protection Inc. (Toronto, Canada)* *Greg Small* *High Engineering Corp. (Calgary, Canada)*
11:30 p.m. .	**Fall Protection Regulations in the European Union and European Standards for Personal Fall Protection Equipment** - EU Directive Regarding Personal Protective Equipment - Standards for Components - Standards for Testing *Wolfgang Schäper* *BG BAU - German statutory institution for industrial health and safety in the construction industry*
12:15 p.m.	Lunch
01:15 p.m.	**Introduction to Human Body Physiology for Fall Protection Engineers** - The Effects of the Maximum Arrest Force (Shock Load) and Orthostatic Intolerance (Static Suspension) - The Limits of Energy Absorbers - The Post-Fall Rescue Time *Andrew Sulowski*
03:15 p.m.	Coffee Break
03:30 p.m.	**Typical Fall Protection Equipment** - Harnesses - Lanyards - Vertical Lifelines (VLLs) - Ladder Systems - Self Retracting Lanyards (SRLs) *Andrew Sulowski*
05:00 p.m.	**Design Assumptions - Equipment** Worker; Harnesses; Lanyards; Vertical Lifelines; Ladder Systems; Self Retracting Lanyards *Greg Small*
06:00 p.m.	End

DAY 2 Thursday, 14th of April, 2011

08:30 a.m. **Calculations of Clearances**
- Free Fall
- Deceleration Distance
- Stretch-Out
- Swing Falls
- Clearance Margin

Greg Small

09:15 a.m. **Mathematical Modelling - Personal Energy Absorbers (PEA) and Vertical Lifelines**
- Derivation
- Example Hand Calculations

Greg Small

10:30 a.m. Coffee Break

10:45 a.m. **Mathematical Modelling - Energy Absorbers and Vertical Lifelines (cont´d)**
- Software Calculations
- Use on Sloping Surfaces

Greg Small

12:15 p.m. **Lunch**

01:15 p.m. **Selected Industrial and Military Fall Protection Systems**
Various best practices from around the world
Andrew Sulowski

03:15 p.m. Coffee Break

03:30 p.m. **Mathematical Modelling - Simple Horizontal Lifelines (HLLs)**
- Equations
- Software Calculations

Greg Small

05:15 p.m. **Mathematical Modelling - Balance Sag Equation**
- Horizontal Lifelines using Horizontal Lifeline Energy Absorbers (HLLEAs**)**

Derivation of Equation
- Hand Calculations

Greg Small

06:00 p.m. End

DAY 3	Friday, 15th of April, 2011
08:30 a.m.	**Mathematical Modelling - Horizontal Lifelines with Horizontal Lifeline Energy Absorbers** - Hand Calculations - Calculations using Software *Greg Small*
09:30 a.m.	**Software Modelling of Complex Horizontal Lifelines** - Multiple Spans - Flexible Anchors - Thermal Effects *Greg Small*
10:30 a.m.	Coffee Break
10:45 a.m.	**Assessing Risk in Industrial Fall Accidents and Managing Human Performance** - Calculation of a New Form of Personalized Risk for First Line Supervisors *Andrew Sulowski*
12:00 p.m.	Lunch
01:00 p.m.	**Software Modelling of Complex Horizontal Lifelines** - Hybrid Systems - Simultaneous vs. Sequential Falls *Greg Small*
02:30 p.m.	**Residual Risks in Fall Arrest Systems** *Andrew Sulowski*
03:15 p.m.	**Discussion, Questions and Answers, Certificates, Closing Remarks** *Greg Small* *Andrew Sulowski* *Karl-Heinz Noetel*
04:00 p.m.	End