HIGH TECHNOLOGY IN BRIDGE ENGINEERING

BERD – Bridge Engineering Research & Design
What is BERD?

BERD is an Engineering Company oriented for the development of new solutions for the construction industry;

At this moment BERD is focused in developing and delivering solutions based on the OPS System applied to Movable Scaffolding Systems (MSS);

Movable Scaffolding systems (MSS) are used in the construction of cast *in situ* concrete bridges.

MSS are travelling steel structures supporting the formwork that gives shape to the bridge.
The Company

• BERD was born from the addition of a top management team to OPS Group from the Faculty of Engineering at Oporto University;

• BERD’s Teams is composed by a group of 18 people:
  – 15 Technical & Production Department;
  – 3 Management Department;

• Settled in Portugal, BERD operates at a global scale;

• Due to a very diminish bridge building activity in Portugal, BERD started its operations internationally in other countries in Europe, specially Spain and Eastern European Countries.
The Strategy

- Besides Europe, BERD is receiving offer requests from many countries worldwide: México, Angola, Russia, Saudi Arabia, etc.;

- BERD:
  - Established a technical and commercial agreement with DOKA (Formworks market leader);
  - established a partnership with a company in South Korea;
  - is establishing a partnership with a company in Thailand;
  - is starting to operate in the Chinese market, participating as speaker and exhibitor at China Bridge Tech Conference;

- M70-S operating in Valencia is one of the three biggest MSS ever built up until now and the first Overhead MSS with OPS.
The Products

Underslung Movable Scaffolding System

Overhead Movable Scaffolding System
The OPS System Concept

OPS applied to Movable Scaffolding Systems
Distribution of Bridges built by Span length

- Gap in bridges with span lengths 70 to 90 m – due to change in the construction method;
Most Used Methods for Spans between 25m to 70m

- Movable Scaffolding Systems;
- Stationary Scaffoldings;
Most Used Methods for Spans above 70m

- Free Balanced Cantilever;
The Revolution

• The usage of MSS in spans between 70-90m
• With OPS technology it is possible today to use MSS in bigger spans

Advantages:
✓ Construction times reduced from 10m/week to 30m/week;
✓ Safer structure (permanently monitored);
✓ Reduction of the number of high risk operations (movements and launchings);
✓ Easier geometry control;
✓ Enhanced bridge construction quality;
✓ Almost Zero deflection;
✓ Lower operational costs (transport and crane).

• Significant reduction of the construction total cost (eg. on a bridge with 8km length customers can save up to 150M€);
The Environmental Concern

- Less steel consumption;
- Less energy spent;
- Less transport needs and fuel consumption;
- Less carbon dioxide emissions;
- Less rebuilt needs.