

**Training session ‘Sustainability and eco-friendly tunnelling’  
6<sup>th</sup> of September 2017**

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**Palacio de Aguas Corrientes, Buenos Aires, Argentina**

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**Objective:** To provide an introduction to the environmental impacts of tunnel construction and operation and the way to adopt a more eco-friendly and sustainable approach to resource consumption. It will also outline the specific issues of the management of excavated material and give more details about methodologies and tools that can be used to assess environmental impacts.

**September the 6th**

**Session 1: General overview of sustainable tunnelling and environmental impacts**

09:00-09:15 Welcome and opening

09:15-10:00 Introduction to sustainability concepts – Levers for action (M. Deffayet)

10:00-10:45 Main environmental impacts of tunnel construction (R. Galler)

*10:45-11:15 Coffee Break*

11:15-12:00 Qualitative and quantitative methods of impact assessment (M. Deffayet)

12:00-13:00 Long term behaviour of support elements in tunnels (R. Galler)

*13:00-14:00 Lunch*

**Session 2: The environmental issues of excavated material**

14:00-14:30 European and national policies regarding extracted material from tunnelling (R. Galler)

14:30-15:15 Industrial classification of minerals – End users requirements (R. Galler)

15:15-16:00 Chemical and physical characterization of excavated material (R. Galler)

*16:00-16:30 Coffee Break*

**Session 3 : Life cycle management of tunnel structure and equipment**

16:30-17:30 Maintenance plans for tunnels including structure and equipment (M. Deffayet)

17:30-18:00 Open discussion and closure (M. Deffayet)