Bouygues Travaux Publics

Mr. Bruno Combe Challenger – EC 15 1 avenue Eugène Freyssinet 78061 St-Quentin-en-Yvelines France

Tel: +33 1 30 60 46 88 **Fax:** +33 1 30 60 20 40

Email: b.combe@bouygues-construction.com

Web: <u>www.bouygues-construction.com</u>

Bouygues Travaux Publics: 6 000 staff worldwide, turnover of 1.113 billion euros in 2009 is the tunnelling specialist with expertise in all the techniques involved (earth-pressure-balance tunnel boring machines, slurry shields, closed-face TBMs, hard-rock TBMs, New Austrian Tunnelling Method, drill & blast, etc.) and with the knowhow to adapt to special conditions (urban environment, protected or listed site, sites of historical interest, etc.). The firm has several world records to its credit, has registered numerous patents (PYXIS TBM guidance system, the TIMBY concept for industrial, mechanized construction of immersed-tube tunnels using prestressed segmental rings, etc.), and is actively involved in several European research projects.

The more significant tunnel construction or renovation projects Bouygues TP has worked on include:

- Chongming Tunnel (Shanghai, China): world record for this 8000 m long dualthree-lane twin-tube tunnel driven with two 15.43 m diameter TBMs
- Groene Hart Tunnel (Netherlands): Construction of a 7160 m long, 14.90 m diameter single-tube tunnel
- Ferden Tunnel (Switzerland): Lötschberg twin-tube rail tunnel (7700 m), drill and blast method
- ANDRA underground research laboratory (Bure, France): sinking of two access shafts (4 and 5 m diameter) more than 500 metres deep, plus a network of galleries at a depth of 490 m.
- KCRC LDB201 Sheung Shui Tunnel (China): two 5000 m long parallel rail tunnels, driven by TBM (8.75 metres in diameter) over 3500 m and excavated as cut-and-cover over 1500 m
- A41 motorway between Annecy (France) and Geneva (Switzerland): designand-build contractor for a 3065 m long TBM-driven twin-tube tunnel beneath

Mount Sion

- Salazie Tunnel (Reunion Island): 8000-m-long, 3.60 m diameter tunnel
- Maurice Lemaire Tunnel (Sainte-Marie-aux-Mines, France): construction of a 6 m diameter emergency tunnel and renovation of the existing 6800 m long road tunnel