

## N4.1.5 Uetliberg Tunnel

### February 20, 2003: Pilot Tunnel Breakthrough

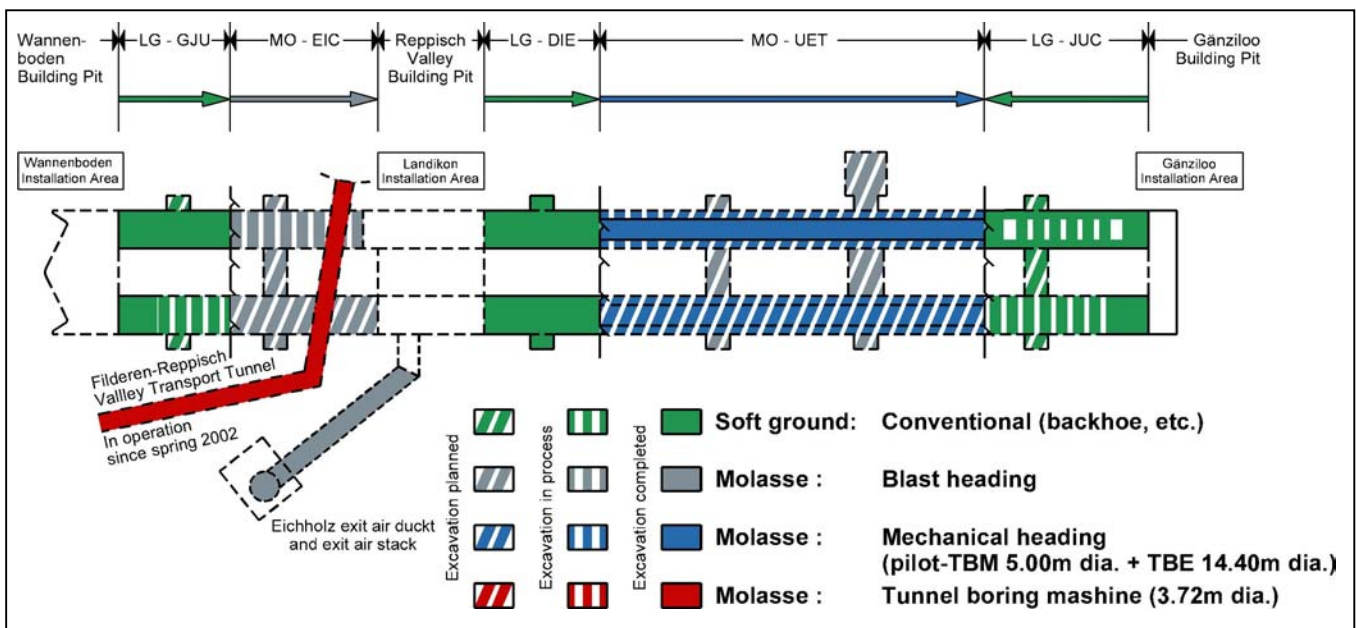
The breakthrough of the pilot tunnel of the Uetliberg Tunnel Project linked the Reppisch Valley with the Sihl Valley for the first time. Since May 8, 2002 the tunnel boring machine has been driving a 5 m tunnel through Uetliberg mountain. After about nine months and 2700 metres it finally reached its goal, the underground chamber at the end of the Juchegg soft ground section at the Brunau end. Average daily progress was 26.6 m / workday (3-shift operation), with a peak daily figure of 42.6 m.



Pilot TBM being assembled



Pilot TBM with rock support



#### Types of excavation, heading progress

Starting from the Reppischtal building pit, which was dug in stages from mid-2000 to the end of 2002, the declining tunnel was driven under Uetliberg mountain to the Zurich South motorway interchange in the Brunau area.

From April 2001 to May 2002, the two tunnel tubes of the Diebis soft ground section were driven starting from the Reppischtal pit in Landikon using the core method, and the starting caverns were blasted out for the pilot tunnel boring machine (TBM) and the tunnel bore extender (TBE). At the beginning of April 2002 the TBM (diameter 5.00 m) was installed in the "Basel" tunnel tube. This machine started excavating the Uetliberg's entire molasse stretch in mid-May 2000. Starting in spring 2003 the 5 m pilot tunnel in the molasse section will be extended to the final cross-section of 14.20 to 14.40 m by the TBE, which excavates by undercutting. While the Basel tube is being extended, the second pilot tunnel will be driven for the Chur tube. The same procedure will be used to extend it.


In February 2002, excavation of the Juchegg soft ground section commenced on the rise starting from the Gänziloo building pit (Brunau end). The first 50 m or so of this tunnel was driven through Uetliberg soil under the protection of a pipe screen, again using the core method.

Excavation of the declining tunnel from the Wannenboden building pit to the Reppischtal pit under Ettenberg hill started at the beginning of April 2002. This tunnel first penetrates the Gjuch soft ground section, followed by the 500 m long Eichholz molasse stretch.

#### Further information


- Further information on the Uetliberg Tunnel Project is available at [www.uetlibergtunnel.ch](http://www.uetlibergtunnel.ch)
- All planning and design work is being handled by a team comprising four Civil Engineers ETH

#### Project Manager, Uetliberg Tunnel

	
<b>Daniel Marti</b> Civil Engineer ETH Business Engineer FH Asst. Manager of Tunnelling Division  dmarti@amberg.ch	Amberg Engineering Ltd. Trockenloostrasse 21 P.O. Box 27 CH-8105 Regensdorf-Watt Switzerland  Tel. +41 1 870 91 11 Fax +41 1 870 06 20 www. amberg.ch

#### Project Engineers, Uetliberg Tunnel

	
<b>Michael Glättli</b> Civil Engineer ETH  mglaetlli@amberg.ch	Amberg Engineering Ltd. Trockenloostrasse 21 P.O. Box 27 CH-8105 Regensdorf-Watt Switzerland  Tel. +41 1 870 91 11 Fax +41 1 870 06 20 www. amberg.ch

	
<b>Thomas Kobler</b> Civil Engineer ETH  tkobler@amberg.ch	Amberg Engineering Ltd. Trockenloostrasse 21 P.O. Box 27 CH-8105 Regensdorf-Watt Switzerland  Tel. +41 1 870 91 11 Fax +41 1 870 06 20 www. amberg.ch

	
<b>Arno Solèr</b> Civil Engineer ETH  asoler@amberg.ch	Amberg Engineering Ltd. Trockenloostrasse 21 P.O. Box 27 CH-8105 Regensdorf-Watt Switzerland  Tel. +41 1 870 91 11 Fax +41 1 870 06 20 www. amberg.ch