



## Environmental reclamation for the Gotthard Base Tunnel Effects of spoil management on landscape

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The Gotthard Transalpine Railway also known as the **AlpTransit Project**, represent one of the greatest engineering and infrastructural challenges of modern age. The new railway line begins about 80 km north of Milan and links Lugano with Zurich, allows to cross Alps throughout the Gotthard Base Tunnel, the longest tunnel in the world of a length of 57 km, and Ceneri Base Tunnel which will be into service in 2020.

**The project, which involved seventeen years of work and 11 billion euros**, is situated in one of the main hubs for European rail traffic and is intended to transfer cargo transportation from road to railway as well as reduce traffic on road lines. Looking at this, a consulting architectural group studied and designed all the structural elements and of all the landscape modifications in order to confer a coherent and unified architectural image with the Gotthard motorway network accomplished thirty years previously.

**In order to minimize the impact** that the construction of a large infrastructure project would have on extensive territory areas, the project management of AlpTransit, owner of the work, undertook measures of compensation consisting both of small and large-scale interventions.



*Final landscaping project of the north portal of the tunnel (source: ATG)*

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**Smallest interventions** included the Claus Lake, located 800m above the tunnel elevation, which was created on a fill made with excavation material from the intermediate access shaft of Sedrun.

While, a significant **large-scale intervention** was the shifting of the historical railway line of village of Pollegio along the motorway. This has allowed to reunite the historic village centre with its original surrounding lands after a separation of over a century.

**The project established itself as an excellence model**, due to defined ambitious aims for the excavation management which produced over 24 million tons of material extracted from the Gotthard Tunnel.

**Excavated materials were managed due to favouring the reuse as much as possible.** For this purpose, were performed solutions for the production of aggregates for concrete and for long-term stockpiling of left-over material by ensuring an optimal economic operation and the minimum environmental impact.

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