



2010 annual mean value of NO₂, situation without tunnel and with three different tunnel designs

Description

Road tunnels are frequently built in order to reduce the environmental impact of traffic, in particular in urban environments. The advantages of tunnels from this point of view are obvious. Nevertheless, a locally increased impact close to the tunnel portals has to be taken into account.

The pictures on the left illustrate the environmental impact of traffic in case of a solution without a tunnel and different solutions using tunnels. By analysing the distributions of pollutants it is possible to find an optimal solution in an early stage of the project.

Services

HBI Haerter Consulting Engineers supported the authorities of the City of Munich as a consultant for the ventilation and the environmental aspects during the design phase of four tunnels.

HBI conducted pollution-dispersion calculations for a variety of tunnel alternatives and a number of different pollutants. Forecasts have been made for NO₂ (annual mean value and 98 %-peak value), benzene and soot (annual mean value) as well as for the additional impact of small particles (PM10) from vehicle engines emissions. The prognoses of the pollution in the vicinity of the tunnel served as a basis for the decision-making process.

For the above mentioned project, HBI served as the technical expert for tunnel ventilation and air quality for the City of Munich during the approval of the tunnel design by the German authorities.