



LIGHTING AND VENTILATION

The underpass is lit with high quality lighting fixtures.

A system of ventilators ensures proper circulation of fresh air and clearing of gas emissions.

Emergency stand-by power supply was also provided to ensure full time operation.



EXISTING SERVICES

Several existing services had to be protected during the works and restored to their initial state after completion. Temporary supports like cables and steel beams were provided to hold these services.



SEGMENTS

The underpass was built in alternate segments and completed in intermediate ones.

Each segment's walls and roof took about 300 m³ of ready-mixed concrete.

A PVC waterstop ensured the construction joints were tightly waterproof.

COLLAPSIBLE SHUTTERING

Considering the short execution time allowed for the project, a collapsible and mobile shuttering had to be designed and fabricated.

Six modules were made in Germany for this purpose.



UNDERPASS

The number of vehicles on the roads in the Sultanate of Oman has been increasing at the phenomenal rate of 10 to 11 percent per annum reaching a number approaching 1.6 million vehicles for an Omani population of 2.7 million.

This has generated incredible pressure on the road network especially in the capital Muscat.

Authorities had to find solutions in terms of building flyover bridges, underpasses, widening of roads, cancelling roundabouts and building new expressways.

Sarooj were entrusted to build the longest underpass in the country together with its approach roads, service gallery, surface drainage arrangements, ventilation, fire fighting, and lighting.

The works included the crossing of one main national highway.

This was done in open excavation and by providing temporary road diversions.

The excavation had to be kept free from water by continuous dewatering; several services had to be crossed or diverted and substantial landscaping works were undertaken.

The whole site had to be restored to its original state and replanting of the magnificent palm trees into their original positions was done successfully.

MICRO-TUNNELING

The 2 m diameter GRP sewer pipe had to be diverted to make room for the underpass.

The new route goes under a highway.

Micro-tunnelling technique was used to carry out these works without causing any inconvenience to roads users.

