



Provincial Road No. 7A Reconstruction at Yilan County in Taiwan

Location: Yilan County, Taiwan

Application: Road Construction

Problem :

During two and half months, from 16th July to 29th September 2008, Taiwan was attacked by six typhoons, the accumulated precipitation brought by four of the six typhoons exceeded 945mm in Yilan area according to the statistic from Central Weather Bureau. Heavy rain damaged section 1k+300 and 1k+500 of Taiwan Provincial Road No. 7A next to Lanyang River Basin. Due to the damage, the traffic was only accessible in single lane. The field investigation stated that Lanyang River was in spate after the torrential rain brought by typhoons. Strong current scoured the foundation of roadway and the scouring of soil at downslope toe led to the collapse of upper roadway.



Solution :

Owing to the main issue of this project - scouring at slope toe, to prevent from recurrence damage and consider the economical and convenient construction method, designer took the solution of reinforcement structure to construct 40-meter-long and 80-meter-long repair projects along the original road line and adopted ACEGrid[®] GG120-II, GG160-II, GG240-II as well as GG250-II as reinforced material, respectively. Soil nails were driven in the rear of reinforced structure to enhance the stabilization of inherent slope. Good permeability materials, sand and sandy gravel, were used as the backfill soil for the reinforced retaining wall. External drainage system at offset of each stage, drainage pipe in the interior of the structure and drainage board at the rear of backfill soil, most important of all, thanks to the good permeability of granular soil used for the backfill area, the construction progress was not delayed by rainfall. The design achieved an artificial structure combining safety, excellent drainage and eco-landscape.