



AIRPORTS

NICE AIRPORT

giga machine

FRANCE



Owner

C.C.I.Alpes Maritimes

Engineer

DDE

General contractor

Consortium des terrassiers SGE-SPADA
MENARD

Period of works

January 1980-January 1981

Main figures

Dynamic compaction

880,000



Project description

Project is an extension of the existing Nice airport. Two new runways 3200 meters long are to be constructed parallel to the shore line on a reclaimed land.

On a first investment stage, only one runway situated 480 meters from the existing one and a new passenger terminal have been constructed.

The project involved the placement of about 20,000,000 m³ of fill to built a reclaimed platform of 200 ha .

The borrow pit was situated at 13 km from the main site the transport was made by mean of a fleet of 38 dumper truck with trailer 145 tons total weight. The runway and others structures considered settlement sensitive covered an area of about 80 ha.

Ground conditions

The soil conditions, 12 to 20 meters of loose fill mainly sand with pebbles with occasionally some stiff marls used only outside the runway zones .requires heavy compaction since the materials where directly dumped to the sea.

The sea bed is made of 100 m of soft sandy silts laying on bed rock. Several embedded water tables with excess pore pressure up to 8 Mpa create artesian well conditions which complicate the slope stability problem induced by the reclamation.

Solution

Heavy Dynamic Compaction maximum depth of 20 meters.

Energy per blow: 180 tons x 23 meters

Design and Built in place machine weight 650 tons, 168 weels, 7 km hydraulic hoses.

Conclusion : The evolution of pore water pressure was continuously monitored at various depth during DC. Works have been done in successive phases with sufficient resting periods to avoid building excess pore pressure.

The print volume versus DC energy governed the intensity of the treatment.

During Dynamic Compaction and after treatment, numerous CPT, PMT, have been performed to control fill characteristics.