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Aviation Sector

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AAI ushers green approach in Airport Projects

A peek into construction of a Green Field Airport in Sikkim. Sikkim a hilly state of NE region is a land locked state. Its northern border touches Tibet and southern border with West Bengal. Nearest rail head is Siliguri and airport is Bagdogra. Due to hilly terrain and road meandering along river Teesta, connectivity to its capital Gangtok always remains not too assuring, especially in monsoon season. Government with a view to improve connectivity to state capital decided to construct a new airport. Site selection for an airport in hilly region is a tedious task, as airport's runway and apron requires a flat land due to operational considerations. After detail survey, Pakyong situated at approximately 30 km from Gangtok was chosen.

New airport at Pakyong is being planned for operation of ATR-72 class of aircraft. The orientation & length / breath of the proposed runway being b02/20 is 1700 x 30 m, with an apron to accommodate 2 ATR-72 aircrafts. Terminal building would have a capacity of handling 100 passengers at a time. All other facilities and features required for a civil airport i.e. ATC tower, Fire station, Communication & Navigational Systems, Airport Runway Lighting, Meteorological aids/system are included in the project.

Biggest challenge while taking up construction of runway, parking apron etc was cutting of hills and filling up valleys/ravines to achieve flat terrain. Other challenges included

· Retaining wall/structures upto 75 m height

· Disposal of extra earth

·Source for borrow earth material for filling

· Stability of slopes

· Impact on environment due to cutting & filling.

Above challenges were met by :-

· Adopting a design with optimum level of runway at which volume of cutting matched with filling requirement.

· Choosing innovative 'Composite Soil Reinforcement System' for hill slope retaining structure.

Salient features of 'Composite Soil Reinforcement System' are described in succeeding paras.

· 'Composite soil reinforcement system' is created by the combination of high strength geogrids as primary soil reinforcement and heavily galvanized and PVC coated mechanically woven double twisted (DT) wire mesh panels as secondary reinforcement.

· Depending on the availability of space, a vegetated slope face is provided for the soil reinforcement system by installation of Green Terramesh (GTM) units as fascia. Wherever the space is limited, Terramesh (TM) units have been used as the fascia to construct a wall.

Sh. V. P. Agrawal
Chairman, AAI