

AIRFIELDS

Trinidad Airport upgrading

slipformed at short notice by Airside Installations two track SF 3000 Power Paver

Piarco Airport, the international Airport of Trinidad and Tobago was the arrival airport for the 5th Summit of the Americas in April of this year. That meeting involved the heads of government of 34 countries and their delegations. It included the US President Obama, as well as the Secretary General of the UN.

The large number of Aircraft arriving and staying for the Summit Meeting would have caused considerable problems with insufficient apron aircraft stands available to park the aircraft. To solve the problem for such an important meeting, as well as to expand and modernise the airport area, it was necessary for the rapid expansion of the Airport facilities. That involved extending the east and west aprons and laying five new separate aircraft platforms.

The stands had to be capable of taking planes as large as President Obama's Boeing 747, Air Force One, as well as Boeing 757, 767, 737 and Airbus Industries A310 and A319 Aircraft.

The work had an obvious time constraint to be ready in time for the meeting. The development work was given to Jusamco Pavers Ltd, a member of the Junior Sammy Group of Trinidad, who would lay the asphalt paving, and the concrete production and laying work was given to Airside Installations of Peterhead in Aberdeenshire, Scotland, who had worked with the Jusamco Group on previous airport contracts.

Notice to mobilize was given in the third week in January and by the 2nd of February the entire kit for the operation was on the high seas and heading for Port of Spain, Trinidad. Airside Installations shipped out to Trinidad, at short notice, their two track Power Paver SF 3000 with the capacity to lay slabs up to 9.75 Mtrs and one of their own 120 Cu mtrs per hour concrete batching plants. Wide and 500 mm deep, and one of their own concrete batching plants equipped with a twin shaft 3.5 Cu. Mtr. per batch mixer, as no equipment capable of wet concrete production was available on the Island. Transportation of the mixed concrete to the widely dispersed working areas was carried out using some of Jusamco's fleet of Caterpillar 725 articulated dump trucks, carrying up to nine cubic metres at a time.

Construction is typically American, 300 mm base gravel (sub-base) underneath, with a foundation layer of 200mm of Marshall Asphalt base laid to receive the concrete platforms, to form islands which are then surrounded by Marshall Asphalt up to finished grade. Normal airport civil engineering tolerances applied.

Airside designed the concrete using locally sourced limestone aggregates, quarried in the Trinidad Highlands, and cement manufactured on the island by Trinidad Cement Ltd. Additives and curing compound were sourced from local manufacturer SCL, who produce and distribute in the Caribbean for Fosroc.

The concrete was specified as having a flexural strength of 4.5 Mpa at 28 days, and Airside had on site a beam testing machine to check that this was being achieved. Typically they were getting well above 6 Mpa at 14 days. The concrete was designed as having almost zero slump, but Airside were happy that the Power Paver could cope with it by using up to sixteen vibrators.

Airside had to make special arrangements with Trinidad Cement to bag the OPC in jumbos, and store it for a period so that it would cool, and then re-bulk it for delivery to their batching plant. Typically it is delivered

on the island at about 85 degrees centigrade, almost straight from the ball mill, and they needed it to cool to ambient temperature for incorporation in to the PQ.

It was necessary to build underground tank storage at the batching plant for the water, with hatches above ground level to feed in block ice to bring the temperature of the mix down. It required ice at the rate of about five tonnes per day.

The work involved 15,000 Sq. Mtrs. of surface area to be laid over 12 days to meet the very tight deadline, with the Power Paver slipformer being moved between the different apron areas at least every day on a low loader to suit the program on the asphalt. The on board self lift up feature of the Power Paver SF 3000 allowed the low loader to be driven under the machine and move it in a matter of minutes and this was especially useful in this regard, making loading of the complete slipformer with the final finisher attached very quick and easy with no dismantling necessary, saving a great deal of time.

The Power Paver was set up with screed sections to lay in six Mtr. wide strips 480 mm deep. The placing rate was over 100 Cu. Mtr. per hour. The use of the hydraulic final finishing attachment also gave the work a first class flat finish which required a minimum of handwork again saving a great deal of time.

The longitudinal joints were dowelled with 40mm bar at 480mm centers, and the slab was sawn and then sealed with Dow-Corning fuel proof silicone sealant, by Airside using their own early-entry saws and sealer applicator machine.

As a result of Airside having the correct equipment for the high volume concrete production and slipforming and the close cooperation between the Jusamco Asphalt operation and the concrete work the contract was completed two days ahead of program and handed over to a very happy client, allowing the Airport some welcome extra time to prepare for the summit.

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