

PROJECT PROFILE

New Doha International Airport

Contractor:	Sinohydro-Gamuda-WTC Joint Venture	Market:	Airport
Location:	New Doha International Airport, Qatar	Paving Dates:	March 2007 - Current
Equipment:	S850 with CDBI	Paving Width:	6m (19.6')
Paving Thickness:	8 Aprons: 400mm (15") 4 Aprons: 445mm (17.5")	Dowel Placement Method:	Compact Dowel Bar Inserter Over 375,000 Dowel Bars Inserted
Texture:	Turf Drag	Crown:	No Crown



Qatar, located on the Persian Gulf only 233 mi (374km) from its better known neighbor Dubai, is rich in cultural and historical heritage. Qatar has a wealth of gas reserves, and has made many technological, environmental and economic achievements. When it opens in 2011, the New Doha International Airport (NDIA) will be one of the most advanced airports in the world. As the home base for one of the world's leading airlines Qatar Airways, NDIA will be one of the first airports to take delivery of the biggest passenger plane ever built - the Airbus A380.

NDIA is being constructed on a 22km² (8.5 mi²) area east of the existing Doha airport where 60 million m³ (78 million yd³) of fill was reclaimed from the sea and used to create the site. The Qatar Civil Aviation Authority (QCAA) and the NDIA Steering Committee are the bodies in Qatar responsible for the airport construction. Overseas Bechtel International (OBI) is providing engineering, project management, and

construction management services; consequently, the NDIA is being constructed under strict, world class engineering standards. The project was sub-divided into sixty (60) Construction Packages.

The Sinohydro-Gamuda-WCT Joint Venture (SGW JV) was awarded Package No. 10 - design and build contracts that cover design detailing, procurement, construction, start up and commissioning of airfield facilities capable of accommodating the latest large body aircrafts. This includes two parallel runways (asphalt), three parallel taxiways (asphalt), aircraft parking aprons (concrete), remote parking bay, drainage works, airfield ground lighting facilities complete with four sub-stations, and other related facilities.

John Dayvault, PQC Manager for SGW JV on the NDIA project, said that the JV wanted to make sure that the paving equipment used on Package No. 10 would yield the best result. Dayvault was also looking for world class equipment and support from the paver manufacturer to compliment his extensive paving experience. After looking at many different solutions from G&Z's competitors, SGW JV chose the G&Z S850 Slipform Paver with Compact Dowel Bar Inserter (CDBI) to pave the crucial and difficult apron section of the project package. NDIA contains a total of 12 aprons



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located throughout the site. Specifications by OBI require the aprons to be paved to Pavement Quality Concrete (PQC) specifications which are approximately $226,525\text{m}^3$ ($296,280\text{ yd}^3$) with a typical thickness of 400mm to 445mm (15.75 in. to 17.5 in.). The paving of the passenger aircraft parking apron is one of the major and critical parts of the project. It requires extensive coordination and interface with other contract packages.

Dayvault states, “The apron paving project involves a great number of obstacles, there are hundreds of in-slab embedments of all sizes, shapes, and positions. Working around these requires maximum maneuverability and flexibility with the paver being used. In addition the paver must move from apron to apron several times to accommodate construction sequences and programs; the twelve 12 aprons are spread out across the entire project involving complicated routes to bypass other projects in progress.”

The project required many short runs within the aprons. Varying depths within the aprons meant that depth changes needed to be fast. The project engineers (OBI) were extremely tough and applied the specification to the letter. “This made it imperative to choose a top-class paver to give the contractor the best chance of producing a high-quality slab. This is why G&Z equipment was chosen. G&Z’s S850 Slipform Paver was chosen over the competition for its maneuverability, 90° steering, ability to change depth quickly, and its sturdy frame with anti-torsion feature allowing free movement in a compact and safe mode without disassembly. Additionally, maneuvering around the tight project space with G&Z’s S850

is a huge asset,” states Dayvault. Dayvault also wanted to find a paver that had sufficient weight and exceptional steering ability to insure superior edges without edge slump.

Paving Specifications and Challenges:

- 6m (19.6 ft.) wide with a 6m (19.6 ft.) standard grid
- The majority of the aprons are both transverse and longitudinal doweled. G&Z’s Compact Dowel Bar Inserter (CDBI) was used to insert the transverse bars on 380mm (15 in.) centers and 443mm (17 in.) centers
- 375,000 dowel bars on the project
- Eight aprons are 400mm (15.75 in.) thick some having a 25% thickened edge
- Four aprons are 445mm (17.5 in.) thick some having a 25% thickened edge
- Longest Apron is 900m (2,953 ft.) in length
- Approximately 190 km (118 mi) of joint sealing for PQC aprons.

Speaking about the S850 paver Dayvault added, “Another reason G&Z’s S850 was chosen was it has an adjustable trailing pan allowing for precise width adjustment which is extremely important in multiple pass airfield paving. The S850 has an adjustment for everything so that ultimate fine tuning can be achieved.” The gull wing edgers on the trailing pan which open and close and the Final Finisher with raise and lower options make for less work coming off the header in the morning and closing the job site at night. In addition, these features have the added benefit of making cleaning easier when washing down after extended paving runs. The best paving run to date (August 2008) is 504m (1,654 ft.) long / $1,215\text{m}^3$ (1,589 cyd) in eight (8) hours.



“With such a large number of dowel bars and such close tolerances (specified by OBI), we chose the G&Z DBI for its performance record as well as its sturdy and reliable reputation. Our (CDBI) machine was especially arranged to trigger manually from each joint position as set out by our surveyors, this guarantees 100% accuracy in (matching) joint spacing over long runs,” states Dayvault.

The G&Z S850 Slipform Paver has been producing quality slabs all around the world. When the specifications are stringent and you need a quality slab each and every time, turn to the G&Z slipform paver with dowel bar inserter, placer/spreader, and texture cure machine, they will not let you down. G&Z stands behind their machines 100%. Quality and Performance from our Factory to your Project.

