

Guntert & Zimmerman

Construction Profiles

Spring 2011





S600 HITS THE MARKET

The S600 in Development

In times of crises those that press forward win out. The winter of 2009-2010 saw the world still struggling with the effects of the worst economic crisis since the Great Depression. The U.S. road construction industry lacked a transportation bill, and there was not any real assurance internationally that work was going to thaw out come spring.

In this climate of uncertainty, the last thing Guntert & Zimmerman (G&Z) wanted to do was sit on its laurels and wait out the crisis. That strategy wasn't going to work for G&Z's marketing strategy or for its customers. G&Z has built its reputation on technological innovation and superior productivity gains

when contractor's use its equipment. With this reputation on the line, G&Z set out to finish engineering and design on its newest slipform paver, the S600.

A New Class of Slipform Paver

The S600 has brought G&Z into the single lane/utility paver market with a bang. The S600 Concrete Slipform Paver is designed around a multi-purpose tractor frame that makes it ideal for city streets, secondary roads, highway and airport paving, as well as a wide range of other applications such as barrier walls, off-set paving and zero or minimum clearance paving. The S600's design has redefined what mobility means for a single lane/utility paver without

sacrificing the same performance advantages contractors have come to expect from G&Z's large and mid-size pavers. Utilizing G&Z's time tested and rugged paving kit design, the S600 is capable of achieving excellent ride numbers on the toughest IRI and zero blanking band projects. With the ability to achieve strict smoothness tolerance specifications and the versatility to be used on zero clearance, barrier walls, and canal lining, the S600 straddles the "Single Lane" and "Mid-Size" classes of pavers. Now paving contractors can have it all in one paver.

It is G&Z's belief that you can't force the market to accept a technology, but you must work with the market to produce a technology that solves its problems. With contractor partners Roos, Hawkins Construction, and Golden Triangle, the S600 has been industry

vetted and inspired to fit into a contractor's tool box and become their most important piece of paving equipment.

GTCC Takes Delivery of the First S600

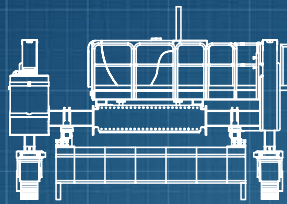
The first S600 was delivered to Golden Triangle Construction Company (GTCC) in May of 2010 and put immediately to work. There is no better test of a concrete paver than concrete paving. That may sound simple, but the truth of that is incredibly real. The forces and rigors of pushing a head of concrete and producing a quality slab cannot be duplicated in any test lab or simulation. GTCC christened its S600 on a Penn DOT White-topping job on Hwy 51 north of Uniontown, PA. Concrete was hauled in agitators and dump trucks from an on site central mix plant and dumped directly on the grade in front of the S600 without the use of a placer spreader. The project called for a 6 in. (152.4 mm) thick overlay of bonded PCC placed on the original PCC surface after previous asphalt overlay had been milled off. Traffic was maintained during construction requiring paving widths of 10 to 20 ft. (3 to 6 m). The S600 took its elevation and steering control off a single stringline set up on the median side of the paver using G&Z's patented Triple Cross Slope Control. GTCC was able to achieve excellent IRI readings in the 50's (in./mi) easily meeting Penn DOT specifications for smoothness.

GTCC's second job with the S600 was near Harmar, PA on HWY 910 north east of Pittsburgh paving 12 in. (304.8 mm) thick lanes under traffic up a 7% grade and a 4% cross slope. Paving widths changed multiple times from 10 ft., 12 ft., and 14 ft. (3 m, 3.6 m, and 4.2 m) lanes. The S600 was also used to pave tapers. The project had transverse dowel baskets and concrete was delivered from an off site commercial central mix plant using dump trucks and placed through a concrete placer. The S600 was also utilized during the Fall of 2010 to pave 15 ft. (4.5 m) ramps and 10 ft. (3 m) and 12 ft. (3.6 m) widening lanes and tapers on two

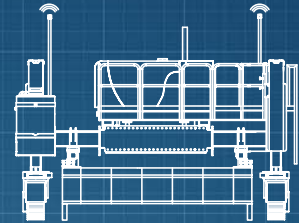
different Pennsylvania Turnpike jobs south of Brownsville, PA. Pavement thickness was 12 in. (304.8 mm) with transverse dowel baskets. Both of these projects were new construction through huge rock cuts in the Allegheny Mountains.

The jobs as described previously have called for multiple paving widths. With the objective of not losing paving days, GTCC has been able to change between widths using G&Z's patented TeleEnds sometimes in under an hour with just a two person crew.

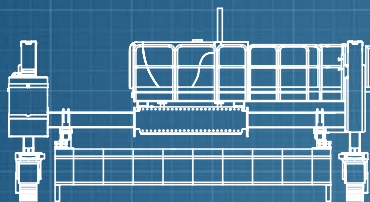
What We Mean By Multi-Purpose:



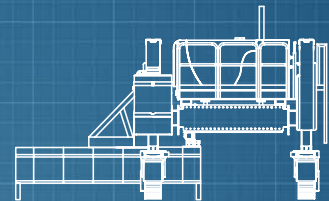
SINGLE LANE PAVING



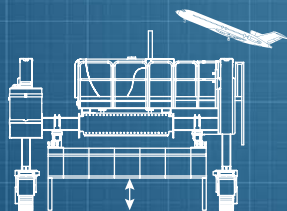
STRINGLESS PAVING



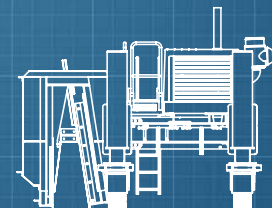
DUAL LANE PAVING



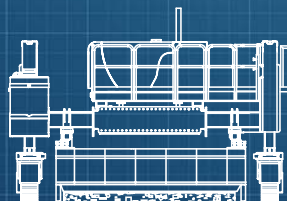
ZERO CLEARANCE



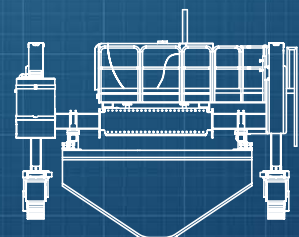
AIRPORT PAVING



BARRIER WALL



CTB SPREADING



CANAL LINING

First International S600

Roos B.V. located in Holland took delivery of the second S600 in June of 2010. In July of 2010 G&Z commissioned the machine on a round-a-bout in Eindhoven, Holland. The round-a-bout was 4 m (13 ft.) wide and 25 cm (10 in.) thick. The S600 handled the tight radius with ease making the commissioning a breeze. Roos moved the S600 to a private industry yard near southern Hertogenbosch and paved a truck lane at 7.8 m (25.5 ft.) wide. Roos' third project was a 10,000 m² (12,000 cyd) apron to store containers paved in adjacent lanes of 5 m (16.4 ft) width. These three initial projects really illustrate the versatility of the S600. Roos has since used the S600 on additional projects with the same success.

S600 Takes On \$1 Billion Project

The third S600 was shipped for use on the Dallas/Fortworth Connector Project. The \$1.02 billion project is entirely publicly funded with \$667 million from public gas taxes, \$250 million from American Recovery and Reinvestment Act funds, and \$107 million from bond proceeds for right-of-way acquisition.

The initial phase of the project spans 8.4 miles (13.5 km) of the ultimate 14.4 miles (23.2 km) through Grapevine, Southlake, and Irving, TX, doubling the roadway capacity in some areas. When completed, the DFW Connector will include a combination of new mainlanes, toll managed lanes, and continuous frontage roads. At its widest point, the highway will be 24 lanes wide between International Parkway and Main Street. The project will also rebuild existing bridges, improve drainage, and include a new intelligent transportation system.

The DFW connector is a continuously reinforced pavement design with the managed lanes, mainlanes and ramps being 13 in. (33 cm) thick and the frontage roads and side streets being 10 in. (25.4 cm) thick. To facilitate traffic, many of the frontage

roads and side streets will be paved at widths varying from 12 ft. to 14.67 ft. (3.6 m to 4.5 m) to include the shoulder and monolithic curb utilizing the S600 paver.

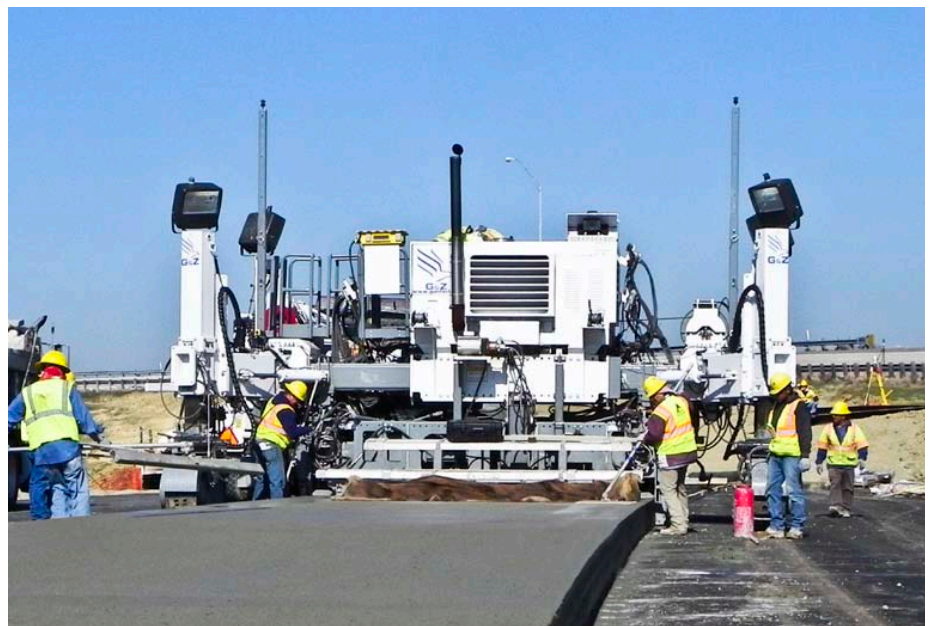
Many of the paving pulls and widths were determined as a result of the need to maintain current traffic movements throughout the project. In addition, because of the many traffic configuration changes and equipment

moves, NorthGate needed a paver or paving spread that would be easy to transport and change widths. The Guntert & Zimmerman S600 features a range of productivity features that were specifically designed to make the contractor more productive and provide additional flexibility for this type of project. With just 15% of the total concrete paving complete, there have been over 20 width changes on the Guntert & Zimmerman S600.



▲ The S600 also was used to pave a large apron for storing containers. It was paved by alternating the paving lanes then coming back for fill-ins.

G&Z equipment was chosen for a portion of the Dallas / Fortworth Connector Project being constructed for the equipment's productivity gains and versatility. For the third model off the line to be used on such a high profile project. Is a great source of pride around G&Z. ▼



Let the Marketing Begin

With four machines sold without a formal introduction or any marketing, G&Z couldn't have been happier with the initial reception. As the integrated campaign portraying the S600 as a multi-tool (similar to the the way a swiss army knife is viewed in their market as the one pocket knife needed for a variety of applications) got under way, the interest in the S600 only grew.

CONEXPO/CONAGG 2011 in March was targeted as the unveiling of the S600 to the market at large. To send a signal to the marketplace that the S600 was not just a concept or a prototype, G&Z sent two S600's to the show. The first S600 was displayed with G&Z's New ZeroKit: Offset/Zero Clearance Paving Kit Support. The ZeroKit allows G&Z's standard paving kit to be cantilevered off either side of the paver up to 12 ft. (3.6 m) from outside of grouser pad to pave shoulders or any other applications requiring zero clearance paving. The second was displayed in standard paving configuration.

There was also a live demonstration of the automated swing leg able to turn the tracks 90 degrees for transport with the flick of a switch and also its ability to navigate around an obstruction while keeping the tracks paving in the forward direction. The two machines drew an incredible amount of interest.

A Look Into the Future

As the market continues to make the shift from large dual lane, mainline jobs to smaller cut-up projects, the S600 is designed to fulfill the need for a small or medium, versatile, multi-purpose paver that retains the ability to achieve top smoothness numbers with or without a DBI. With the engineering department at G&Z tasked with designing new and innovative attachments and features for the S600, this multi-tool is just getting more attractive.

The most recent addition is G&Z's new narrow profile dowel bar inserter. Its the perfect solution for difficult urban construction projects and white topping secondary roads where space is at a premium.



▲ In the S600 Multi-Purpose Advertising Campaign, the S600 was depicted in the advertisement "morphed" into a multi-tool to visually illustrate the S600's multi-purpose capabilities.



▲ G&Z took two S600's to CONEXPO 2011. (top) The Cold Spring Const. (Akron, NY) S600 was exhibited with the ZeroKit: Offset Paving Kit Support. (bottom) The Hawkins (Omaha, NE) S600 was shown in standard paving configuration.



▲ The S600 features 90 degree steering at the push of a button. 90 degree steering reduces the size of hand pours, increases on-site maneuverability, and drastically reduces transport time.

Indonesia: One of Many Emerging Concrete Markets

Paving At New Kualanamu International Airport



Located between Australia and South East Asia, Indonesia is a group of 17,508 islands which straddles the equator. From West to East, it spans 4,000 km (2,485 mi). Indonesia's total population is 238 million with Jakarta, its capital, having a metro population of approximately 22 million. After three and a half centuries of Dutch colonial rule, Indonesia achieved independence in 1949 under quasi-military rule. In 1999, Indonesia reached democracy. Indonesia has been largely unaffected by the recent world recession, and in the last 5 years the economy has experienced significant growth. Unfortunately, the country's infrastructure has not kept pace. Medan, Indonesia's fourth largest city, found itself with an inadequate airport that was unable to handle the amount of air traffic that had increased dramatically over the past few years. ADHI-DUTA, a joint venture between Adhi Karya and Duta Graha Indah, was awarded the contract to construct the main taxiways, turn-outs and ancillary works at the

New Kualanamu International Airport outside the city of Medan.

In September 2009 with the assistance of Rick Mundy (G&Z Technical Support Manager) and Hartanto Wiyatno (G&Z Indonesia), ADHI-DUTA determined that a G&Z S850 Paver was the right machine for the job. ADHI-DUTA recognized the superior features of the G&Z paver and its high resale value. The S850 paver which was equipped

with 90 degree steering capability is a perfect machine for this type of work. The 90 degree steering reduces the size of hand pours at the end of a paving lane and allows the paver to be jumped around quickly on the site between small pours. As the site team was new to the slipform paving market, the G&Z equipment package also included a significant amount of technical support and on-the-job training.

G&Z's factory service technicians completed the assembly and commissioning of the S850 Paver in January 2010 along with the tremendous assistance provided by G&Z's two local mechanics Eddy and Martin.

Concrete paving on ADHI-DUTA's portion of the New Kualanamu International Airport Project was 3,750 m x 60 m (12,303 ft. x 196 ft.) taxiway. The central portion of the taxiway is 30 m (98 ft.) wide, 480 mm (18 in.) thick, and with 15 m (50 ft.) of shoulder on either side at 250 mm (10 in.) thick. Because of underlying clay layers on the site and a very high water table, the designers included mesh reinforcing in the slab design to control any possible future cracking. Joints were at a 7.5 m x 7.5 m (24.5 ft. x 24.5 ft.) grid with 40 mm (1.5 in.) diameter dowels. The slab was to be paved on top of a wet-lean concrete (WLC) layer 330 mm (12 in.) thick which was also to be slipformed as far as the program would allow.

Because of the site team's lack of experience with slipform paving, it was decided to start with the unjointed WLC layer and then move onto the top layer of pavement quality concrete (PQC) with the mesh and dowels. Trial paving began in January 2010 and as with any start-up of a new project, there were many challenges that had to be overcome. These included very erratic and slow rate of concrete supply and the tremendous variation in the concrete slump. After a lot of input from G&Z and top concrete paving consultant, Rick Mundy, changes to the mix were made





as well as a tightening up of controls at the multiple batch plants that were supplying concrete to the paver.

After a slow start, the site team persevered and worked long hours to get back on schedule. Slipforming of the WLC was stopped to allow the slipform paving equipment and concrete plants to be dedicated to the PQC. In order to speed up the schedule and to avoid switching the slipform paving and batching and mixing operation between WLC and PQC concrete, ADHI-DUTA JV decided to place the WLC course at optimum moisture using an asphalt paver and conventional compaction equipment. The site team are now producing a high quality PQC slab.

The latest information from the site is that all the concrete paving on the taxiways is nearly complete. It should not be long before the first plane lands at Kualanamu. The emerging Indonesian concrete market looks promising for the future. G&Z is proud to support these emerging concrete construction markets with not only the highest quality, most productive machines in the world, but its support and expertise in concrete paving.





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Thank you to all who came to visit us at CONEXPO 2011.
The show was a true success.