Rockmart Asphalt Terminal

PRINT EMAIL

Your Guided Tour of a Major Work in Progress:

C.W. Matthews' Rockmart, Georgia Asphalt Terminal

Here is an opportunity for you to take a close-up look at a brand-new asphalt terminal that reflects the very latest in planning, design, and construction. And the best part is that you won't even need to leave the comfort of your office chair to view the features of this terminal.

Let's begin with the basics:

The C.W. Matthews Contracting Company of Marietta, Georgia operates 27 hot-mix asphalt (HMA) plants at various locations in the state of Georgia. A variety of key factors came together in recent years that caused the company's management to start thinking about how practical—and how economical—it would be to have the company's own terminal for the long-term, high-volume storage and distribution of liquid asphalt.

C.W. Matthews has had a long business relationship with the Astec Industries family of companies. For that reason, it did not take long for the two groups to get together for the planning stage—and subsequently the construction stage, as well—for a new asphalt terminal that would be built in Rockmart, Georgia.

The 27 HMA plants operated by C.W. Matthews use a lot of liquid AC in the course of a normal year. In 2008, for example, the C.W. Matthews plants produced more than 5.5 million tons of HMA.

When interviewed for this article, Bob Matthews, the chairman of the board of C.W. Matthews Contracting Company, Inc., was direct and to the point: "We wanted to have more control over our asphalt supply," he said. "We wanted the ability to store asphalt in the off-season."

The Astec/Heatec construction team moved quickly ahead and completed Phase One by mid- 2009. "But as soon as we finished Phase One, we asked them to move quickly ahead on Phase Two—because we had decided to add two more 10,000-ton tanks."

According to Matthews, the new Rockmart Terminal will be totally completed by January 2010. It will have 11 storage tanks that will be capable of storing up to 391,000 barrels of liquid AC at any time.

The liquid AC will be delivered to the terminal by rail. Because of its unique design, the terminal can unload 20 tank cars at the same time. Tank trucks are then used to deliver the liquid AC to the HMA plants. A dual loadout rack at the terminal can fill two tank trucks simultaneously at a rate of 500 gpm.

The huge storage tanks at the terminal are heated by hot oil that circulates through coils installed in the tank bottoms. Each tank has independent temperature controls enabling different tanks to maintain their contents at different temperatures. Tank cars are heated with steam to raise the temperature of the asphalt and decrease its viscosity so it can be pumped out of the tank cars into the storage tanks.

The 54,000 barrel and 26,000 barrel tanks shown in the aerial photo on Page 32 are regarded as reserve tanks. The smaller, 5,000 barrel tanks shown in the photo are known as day tanks. The day tanks are designed to heat asphalt faster than the reserve tanks and are used primarily to store asphalt that will be loaded out on a daily basis.

The different tank sizes facilitate storing the asphalt at different temperatures to conserve heating costs. Asphalt in the reserve tanks is usually stored at 280°F, but may be stored at higher temperatures when usage rates are very high. Asphalt in the day tanks is stored at 350°F, the usual temperature for load-out and for making polymer mixes.

The reserve tanks were provided by International Tank Service, Inc. of Lima, Ohio. The insulation for the tanks was from Insultherm, Inc. of LaPorte, Texas.

Asphalt can be transferred from any of the storage tanks to one another and to the loading rack. However, only the day tanks can transfer asphalt to the polymer blending system. Likewise, the polymer system can transfer polymer mix only to the day tanks and the loading rack.

"We are convinced that our Rockmark Terminal is a modern, state-of-the-art facility," said Matthews. "We are very proud of it—proud of the way it looks and proud of the way it works." HM

The new Rockmart Terminal includes the following:

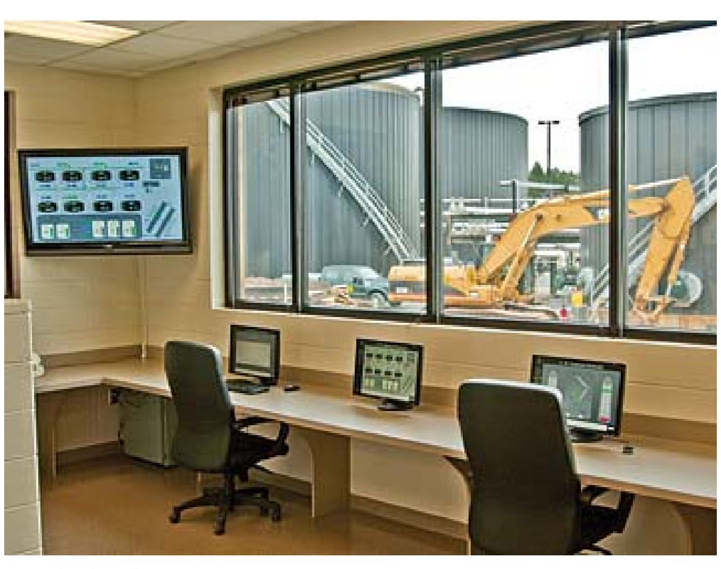
- A tank-car unloading system that can unload 20 cars simultaneously;
- 6 asphalt storage tanks with a capacity of 54,000 barrels each;
- 2 asphalt storage tanks with a capacity of 26,000 barrels each;
- 3 asphalt storage tanks with a capacity of 5,000 barrels each;
- A complete polymer-blending system with tanks for mixing and storage;
- A dual truck load-out rack for tanker trucks;
- Fuel storage tanks for diesel and waste oil;
- Two hot-oil heaters and a steam generator;
- A control center with a motor-generator backup system;
- An office and a laboratory.

NOTE: This list includes tanks that were added after the aerial photo (above) was taken.

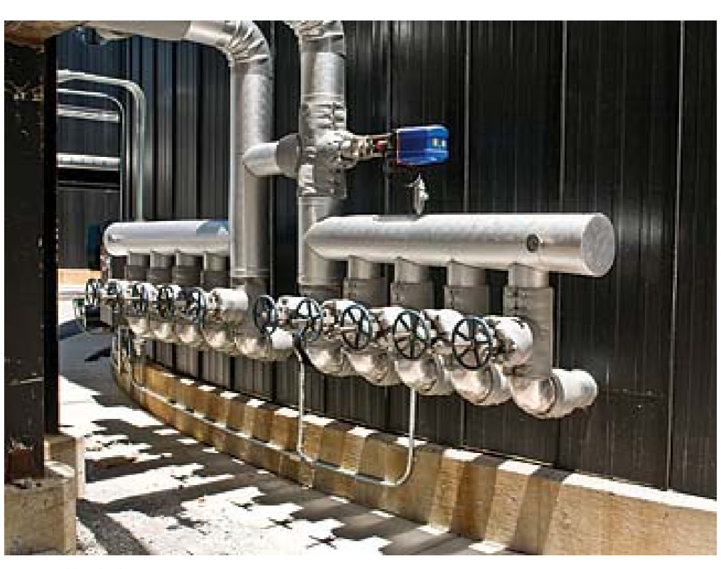
HELPFUL REFERENCES

- 1 gal. of AC = 8.0 lbs.
- 1 barrel of AC = 42 gal.
- 5.95 barrels of AC = 1 ton

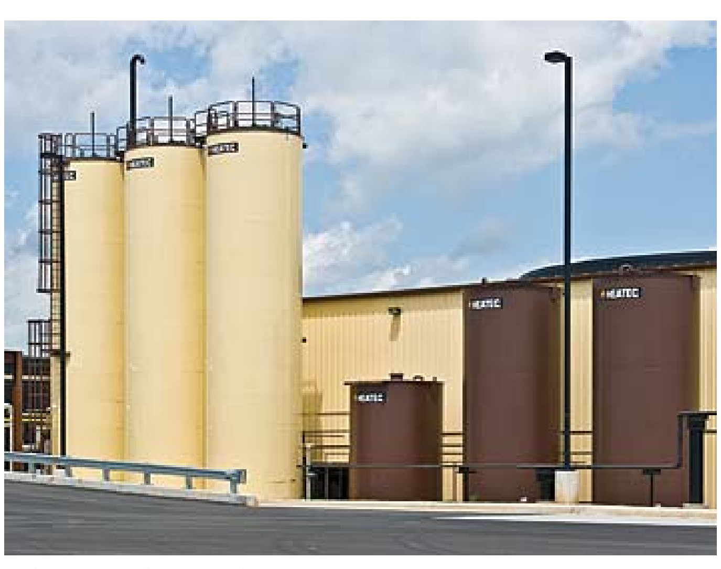
This is an aerial view of the site when the construction work had just been started. The photo was taken on July 2, 2008. Compare it with the aerial photo above. That one was taken on June 26, 2009.



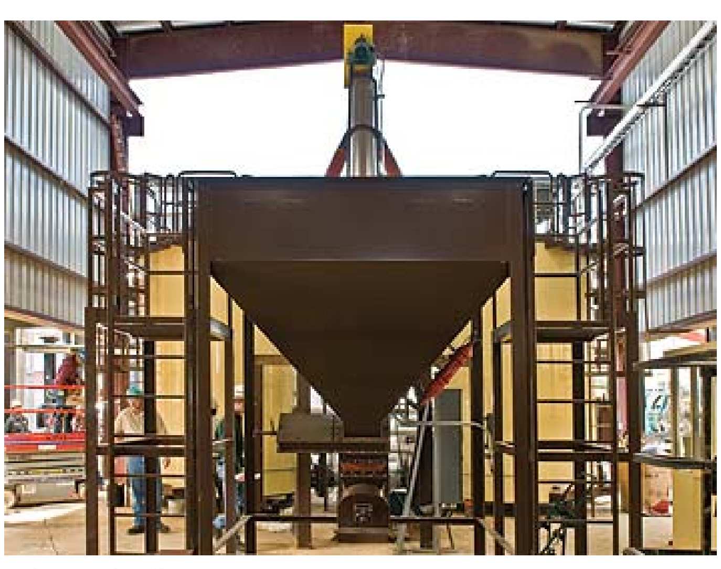
Terminal Office
Computers are located at different places in the terminal in order to provide efficient control of all functions. For example: Positions of the three valves on the outlet side of each asphalt pump can be verified on a computer screen before the pump is operated. This view of the terminal office shows the user-friendly design and layout.



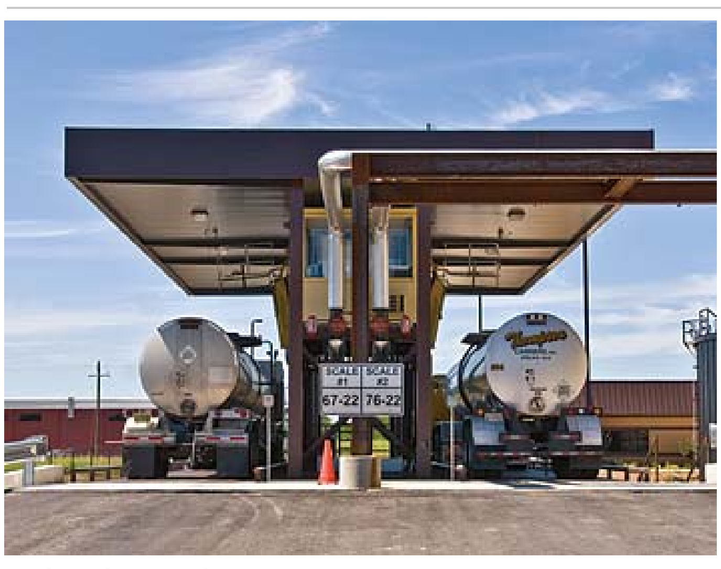
Hot-Oil Piping System
The asphalt storage tanks, steam generator, and heat exchanger have independent parallel piping circuits connected to the main supply and return lines. The coils of each tank are separated into independent circuits, each with its own control valve.



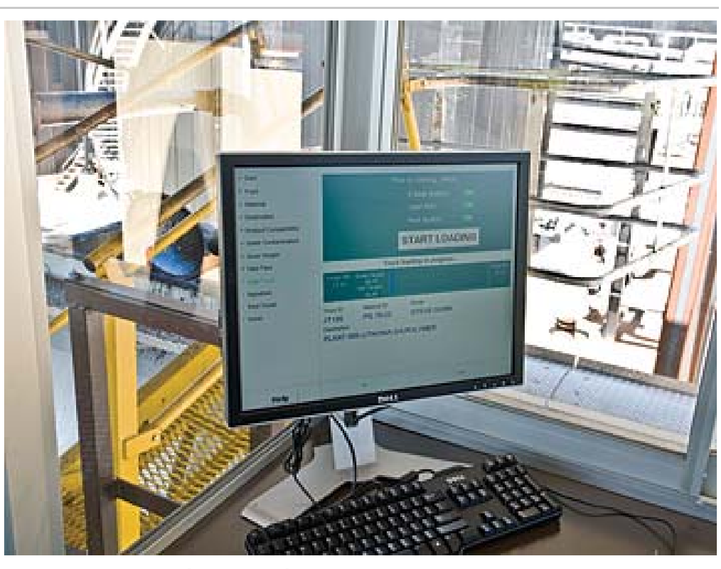
Polymer Let-down Tanks
There are three 35,000-gal. tanks that are used to store finished PMA (polymer modified asphalt) at the Rockmart Terminal.



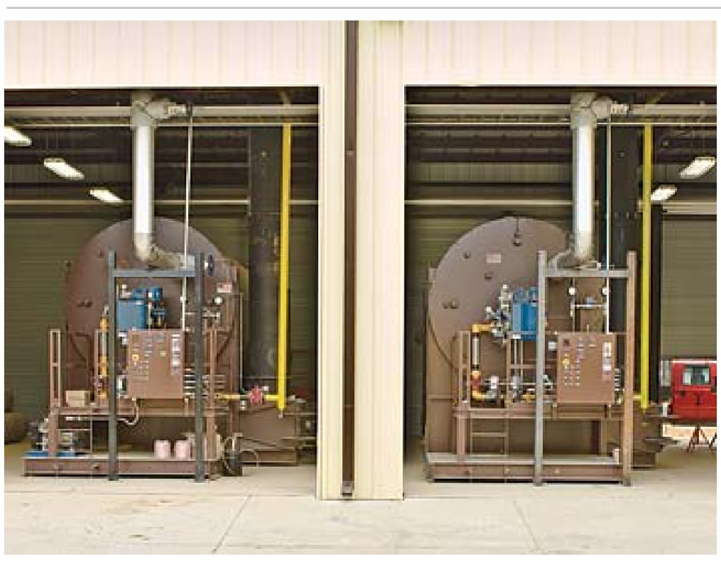
Polymer Blending System
The terminal has a separate building that was constructed specifically for housing the equipment needed in the company's polymer blending operations. In the foreground of this photo is the hopper where polymer pellets are loaded. The two tanks in the background are used to mix the polymer with liquid AC. According to a Heatec spokesman, C.W. Matthews Contracting will have processed more than 20,000 tons of polymer mix in the months between May 2009 and the end of the paving season.



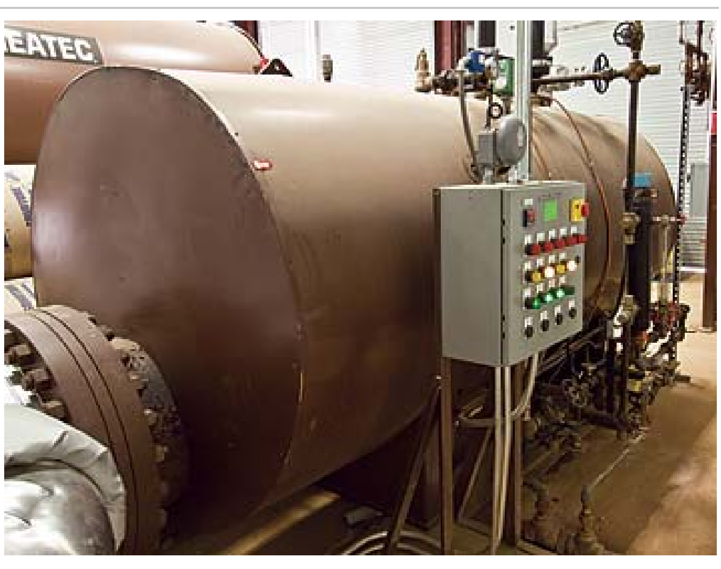
Dual Load-Out Rack
The tank truck load-out system is designed so that drivers can safely load the tank truck they are driving without help from others. Two trucks can be filled simultaneously with liquid- asphalt products, each at a rate of 500 gpm. The loading station has a covered roof and an enclosed control room with two sets of operator load-out controls. The system incorporates an overflow device that automatically shuts off the asphalt in case the scales fail to do so when a preset limit is reached.



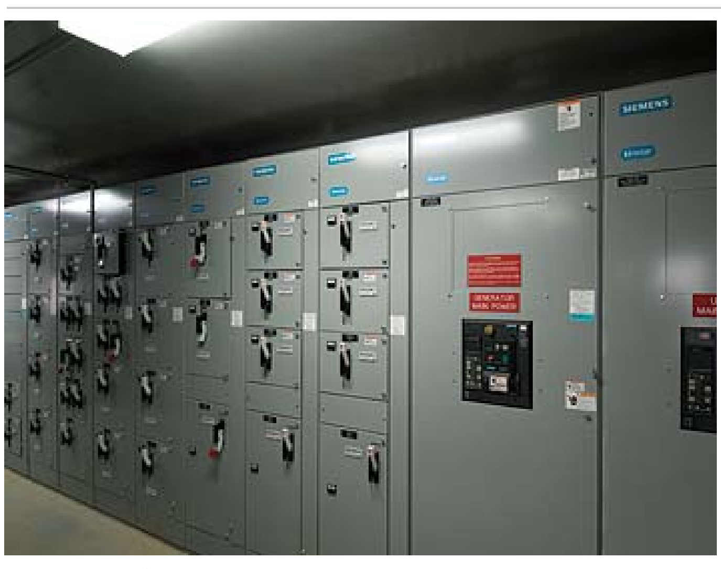
Computer at Load-Out Rack
The load-out system incorporates a computer, computer-automated controls, two truck scales, and automated data recording. The automated controls provide remote operation of the asphalt pumps located at the tanks. The load-out controls for each load-out boom incorporates lockouts to prevent operation of the pumps unless the boom is properly positioned and valves are properly set. The components of the truck scales and the load-out system were provided by Astec.



Hot-Oil Heaters
Two hot-oil heaters are located in an enclosed building. Each heater has an output of 8 million Btu/hour. The building has space for a third heater if needed for future expansion.The heaters have refractory lining that enables them to burn a variety of heavy fuels or waste oils, in addition to No. 2 diesel fuel. They have combination burners that also enable them to burn natural gas as an alternative fuel. The two heaters heat thermal fluid that in turn carries the heat to all asphalt tanks, two fuel tanks, the polymer blending system, and a steam generator. Both heaters heat thermal fluid in the same circuit and are connected parallel to each other.



Steam Generator
A steam generator turns water into steam—and that steam is used to heat tank cars. The generator is located in the enclosed building alongside the hot-oil heaters. Its source of heat is the thermal fluid that is heated by the hot-oil heaters.



Motor Control Center
The control center centralizes all electrical power for the terminal and for the motor controls. The controls are housed in a series of electrical racks and panels. Electrical power is sub-divided into two independent control systems, one for the polymer blending system and another for all other electrical power. A computer is also located in the motor control center. It controls the asphalt pumps used to transfer asphalt from one tank to another. Positions of the three valves on the outlet side of each asphalt pump can be verified on the computer screen before the pump is operated.

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