

# A BIG STEP FORWARD IN SOUTH AFRICA

**WHEN TECHNOLOGY** leaps ahead, there are always a few organizations that have the enterprise and the initiative to keep up with it. The emergence of fractionated reclaimed asphalt pavement or *FRAP* (usually called *RAP* in North America) as both a cost and energy saver is a good example: A few companies are using it, but many others are still waiting to see what happens.

The few early adapters include Much Asphalt (Pty) Limited, a Murray & Roberts company that has its headquarters in Capetown, South Africa. Much Asphalt is a leading hot-mix asphalt (HMA) producer in that part of the world. The company has been supplying a wide variety of HMA mixes for all types of roads since it was formed in 1965. This producer is always watching technology as it moves forward. The emergence of FRAP as a resource is a good example.

“FRAP is still an unusual type of product for a producer to use in new mixes,” said Brian Neville, branch manager of Much Asphalt’s Roodepoort Operation. “A lot of engineers around here are slowly becoming educated in the use of this material. There is still a bit of a stigma associated with it. People tend to think of FRAP as a waste material, not as a quality material. It is not a product that the engineers around here readily use. FRAP is not yet the accepted norm—but it is coming along, slowly and surely.”

Much Asphalt made a commitment to using FRAP in July 2006 when they bought an Astec Mobile Screens Fold ‘n Go® screening plant from Osborn Engineered Products of Johannesburg, South Africa. The company already had a stockpile that consisted of more than 175,000 tons (160,000 tonnes) of FRAP. A good part of that stock-

pile needed to be processed so it could be used in producing new HMA mix for the rehabilitation of the OR Tambo International Airport (formerly called the Johannesburg International Airport). The company had intended to have the FRAP screened by a subcontractor, but when management realized how much could be saved by doing it internally, the decision was made to buy the Fold ‘n Go plant.

“We purchased a Model 2612D Fold ‘n Go screening plant to process recycled material before feeding it back into our new asphalt mixes,” said Neville.

“Aggregates of many kinds are high-demand commodities in South Africa, so it makes good economic sense to start looking at recycling FRAP material in our mixes. Quite a few of our plants have sizeable stockpiles of material that can be recycled. That was

really the driving force behind the decision to purchase the Fold ‘n Go mobile screen: to process that material and use it again.”

Neville said the amount of FRAP that is used in new mixes varies from project to project. On the recent rehabilitation project at the OR Tambo International Airport in Johannesburg, South Africa, for example, Much Asphalt was allowed to run 10 percent FRAP in their mix.

“We have also used FRAP on a lot of our sundry work where the specifications are not so tight. Those projects range in size from 550 tons (500 tonnes) to 11,000 tons (10,000 tonnes). Anything over that, we would classify as a large project and there would normally be much tighter specifications that would limit the use of RAP. As I said, some of the consulting engineers here in South



Africa do not yet want us to use it on major projects.”

Neville explained that at Much Asphalt’s Roodepoort Operation, they are screening the FRAP material to two useable sizes before incorporating it into new mixes: 0.35 in. to 0.55 in. (9mm to 14mm) and minus-0.35 in. (minus-9mm). “Those sizes can be used in about 95 percent of the asphalt mixes that we make,” said Neville. “The oversized material is broken down and sent back for additional processing, of course.”

Neville had a few more positive comments about the new plant:

“The Fold ‘n Go screening plant is working very well for us. We have probably screened about 16,500 tons (15,000 tonnes) of recycle here at this site—and we are busy working through a very big stockpile at the moment. The new machine is working very well.”

When asked what he might say to another HMA producer who was considering moving ahead to processing and recycling FRAP, Neville’s reply was remarkably simple and straightforward:

“With aggregate materials being a commodity with such high demand in a very buoyant construction economy, using FRAP is the only way to go. You just have to do it. There are other reasons to do it, of course, including the positive environmental impact that recycling provides. But using FRAP material just makes sense. And I don’t think anyone can put forth an argument that would convince me otherwise.

“If another asphalt producer in the region came to me and asked me for my advice, I would simply tell him: ‘Yes, absolutely. It’s the way to go.’” ▼▼▼

## The concept of recycling old asphalt into new mixes has not yet caught on with all of the country’s engineers and consultants, but this producer has already started doing it.



### FOR INFORMATION

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*Much Asphalt, a Murray & Roberts company, is currently using reclaimed asphalt pavement (RAP) as recycled material in its new hot-mix asphalt (HMA) mixes at several of its plants in South Africa. The company purchased a Model 2612D Fold ‘n Go screening plant from Astec Mobile Screens in July 2006 to screen and process the RAP material into two sizes. The company’s Fold ‘n Go plant includes a double-deck PEP Duo-Vibe® dual-frequency screen and three on-board stacking conveyors (as shown on the facing page). There is also a high-capacity feed hopper with a scissor-action grizzly (top photo) and a wrap-around screen walkway and access ladder (bottom photo) for personnel convenience and safety. According to Brian Neville, branch manager of Much Asphalt’s Roodepoort Operation, the decision to begin recycling RAP material into new mixes has proven to be a wise move.*