



**Much
Asphalt**

Winter 2008

The road to the future ...

SurfaceTalk

SEEING RED

The resurfaced N3 viewed from Tollgate Bridge in Durban, with special Décor Asphalt supplied by Much for bus and taxi lanes.

See page 2



A Murray & Roberts company

Tel: +27 21 900-4400 Fax: +27 21 900-4468
E-Mail: info@muchasphalt.co.za Web: www.muchasphalt.co.za

A LEVEL 3 BBBEE CONTRIBUTOR

Towards sustainability



Much Asphalt chief executive Phillip Hechter.

Sustainability is a much used word these days. Sadly, though, it has more serious implications than many of the other popular buzzwords that have become common in business circles.

Why? Because sustainability of resources to deliver accelerating demand is very much in question. By resources I mean not only raw materials, but also power, skilled people and the environment we live in.

Much Asphalt is taking sustainability very seriously. We are, for example, putting our money where our mouths are when it comes to saving our natural resources. We have invested in our own crushing and screening plants to prepare RAP (reclaimed asphalt pavement) for addition into new hot asphalt.

Our existing plants can include 20% RAP in asphalt production, while our new Astec plant to be commissioned in Benoni in early 2009 can use up to 80% RAP. This is certainly the

way things will go in the future and we are proud to be pioneering the new technology that makes it possible.

The civil engineering industry in South Africa grew 27% in 2007 and this year looks no different. Our capacity building programme has required record levels of capital expenditure, not only in plant but also in people.

We have programmes active at all levels of the technology skills chain. We are supporting maths and science learners at school, engineering students at universities and technikons and staff with on-the-job development and training. We also train emerging enterprises and client staff on a large scale and we send our technical managers abroad to bring back new, improved technologies.

To enhance our production capabilities, we are continually adding new improved products to our line and our mobile plants

provide additional capacity when- and wherever needed. Our attention to environmental issues is evident in our regular audits and improvement programmes. Constant upgrading of our plants also enables us to incorporate the latest, most environmentally friendly technology.

Most important, our drive for sustainability is a continuous one and we are always ready to adapt to our rapidly changing world.

- Phillip Hechter



Much Asphalt was approached to provide a red coloured asphalt surface for designated bus and taxi lanes on the N3 leading to and from the Durban CBD.

The requirement was for 1 315 tonnes of SMA and 500 tonnes of Medium (type D).

Much has carried out similar projects using its unique Décor Asphalt in red and other colours in the Eastern Cape and Gauteng. This

was a new request for KZN, but the Coedmore team was not about to pass by the opportunity.

A storage/feeder tank was sourced and modified by our PE branch, with a hot box installed to the underside of the tank, heating flues inside and a complete temperature control system. A dedicated piping system and pump were installed to feed clear bitumen into the mixer.

From page 1

Colour me RED

The Mexphalt C LT synthetic binder and the red oxide were imported from Europe, while the aggregate was supplied by Sterkspruit Crushers.

Challenges

The contract posed several unique challenges.

- Excellent planning was essential so as not to delay normal production requirements.
- Prior to manufacture of the coloured asphalt the batching plant mixer, skip bucket and hot storage silo had to be flushed

with heated coarse aggregate to remove traces of black asphalt.

- Tipper truck loading beds also had to be flushed and cleaned with a release agent.
 - Red oxide had to be manually fed into each batch during the production process.
 - Production took place at night and on weekends, continuing until midnight at times.
- The contract was completed on Saturday 17 May 2008, to the visible relief of all participating staff and hauliers.

New plants – new capabilities



The new Astec plant bound for Much Asphalt Benoni, imported from the USA, is scheduled for commissioning in February 2009.



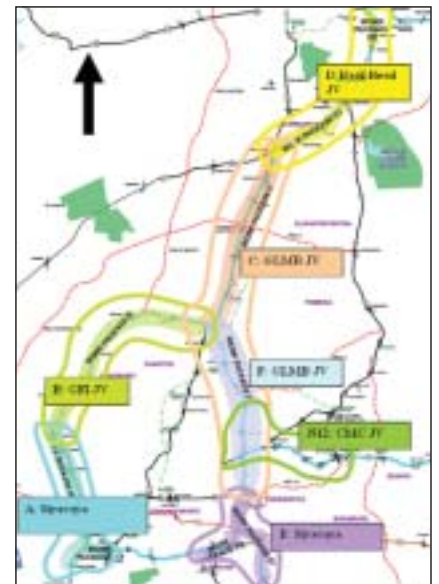
Two additional production plants now under construction for Much Asphalt's Benoni and Kempton Park facilities will supply 300 and 250 tonnes per hour respectively.

Both will be fully compliant with all environmental requirements.

The new units are twin drum configurations capable of handling the widest possible range of different mixes, including efficient use of RAP (reclaimed asphalt pavement). Advanced control systems allow for easy and quick changes between different mixes and ensure consistent product quality.

Comprehensive plant monitoring and diagnostic systems will facilitate quick problem solving and scheduled maintenance downtime is also reduced.

The plant destined for Benoni will be fully imported from the USA using new technology that includes a warm asphalt manufacturing system and 900 tonnes of hot storage capacity. The locally manufactured unit for Kempton Park has 400 tonnes hot storage capacity.



Gauteng takes up the challenge

SANRAL's widely publicised Gauteng Freeway Improvement Project (GFIP) represents both an opportunity and a challenge for Much Asphalt.

The total asphalt quantity required for Phase 1 of the GFIP is estimated at 924 000 tonnes. In the next 22 months we expect our Benoni, Kempton Park, Eikenhof and Roodepoort branches to be stretched to the limit and are therefore making a major investment in increased capacity.

"We are in the process of expanding both our Benoni and Kempton Park plants and discussions are in progress with our suppliers to ensure adequate supply of

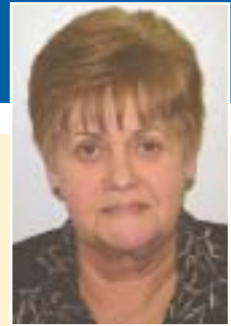
aggregates and bitumen," says Much Asphalt operations director Bennie Greyling.

"By February next year our total mixing capacity will increase to 1 000 tonnes per hour. We are also in the process of determining our total tipper truck requirement and have entered discussions with a sub-contractor to ensure that sufficient trucks are available.

"We have a 120TPH mobile plant on standby in case we need to supplement asphalt supply from a static plant."

Generator sets have been installed at two of the plants to ensure continuity of supply in case of power outages.

SANRAL has awarded seven contracts valued at R11,5-billion for the first phase (125, 5km) of the GFIP. The new projects will be substantially completed for the 2010 Fifa Soccer World Cup.



A passion for figures ... and a lot more besides

Miriam Nel, accountant at Much Asphalt Benoni, is the kind of person who helps to make our jobs more special than just "work". She has "an absolute passion" for figures and finds great satisfaction in meeting the challenges involved in solving queries and beating tough deadlines.

Miriam believes in the power of communication and wants to share the knowledge she has gained through experience with the younger members of staff before she retires. "Each employee of Much Asphalt is an ambassador for the company and should always communicate in a positive manner."

"My colleagues at Much Asphalt are my family away from home," she adds. "I can always depend on their support when it is needed."

Miriam was born in the Eastern Cape town of Despatch, and moved to Johannesburg in 1968. She is the proud mother of two children and grandmother of three.

She did not have the opportunity to obtain a tertiary education and after school had to choose between her two loves – a position at a regional Afrikaans newspaper because of her passion for the language, or a career as a bookkeeper.

"The latter was my choice, one I have

never regretted."

Miriam started out as trainee bookkeeper at an auditing firm in her home town and worked for different auditing companies after moving to Gauteng. She went on to become a credit controller at a transformer manufacturing company and, in 1988, senior bookkeeper at Murray & Roberts company Abecol, which became Much Asphalt in the late 1990s.

When the growth of Much Asphalt in Gauteng necessitated employing additional staff, her previous position was allocated to two new staff members and she became accountant at our Benoni branch.

Roads industry captains take to the greens

Anthony Allen, regional manager for KZN, reports

On Sunday 1 June, Much Asphalt's 20th annual golf weekend on the KwaZulu-Natal South Coast reached its climax with the presentation of a special award to Mannie de Sousa of SANRAL in recognition of his 100% attendance record.

Managing director Phillip Hechter told guests that the Much Asphalt golf weekend had been instituted in 1989 by Albert Nel, then MD of Protea Asphalt. The objective

was to bring together role players in the KZN road building industry in an environment where they could interact as friends and colleagues with common goals. Today, however, we host people from as far afield as Johannesburg and Cape Town.

Nine of the 24 players in 1989 were still part of the 44-strong field in 2008. Four of the "Past Masters" (one of them, Puck Healey, is 84 years old!) agreed to come out

of golfing semi-retirement to add a touch of maturity and class to the Saturday match at the Wild Coast Sun.

Three rounds of golf were played - at Southbroom on Friday, the Wild Coast Sun on Saturday and Selborne on Sunday.

The popularity of this event has been underscored by the fact that, when doubts arose as to whether it could continue under the tight financial restraints that often occur in construction, the players offered to pay entry fees to assist. Sponsors, including the employees of the players themselves, were also extremely generous.

R3 000 collected from fines was donated to Child Welfare at the request of the Player of the Tournament, Rudolf Fourie of Roadmac Surfacing.



Golfing "Past Masters" participating in their 20th Much Asphalt golf day were retirees (from left): Ossie Besselaar (formerly with VKE); Puck Healey (NPA); Peter Hockey (VKE); and Ray Butler (NPA).

PE airport project completed on time

Much Asphalt's Port Elizabeth plant has delivered some 37 600 tonnes of 40/50 pen BTB layer, 60/70 pen WC and AE-2 modified WC (ex Colas) to Roadmac Surfacing Cape for runway upgrades at Port Elizabeth airport.

Most of the work has been done by a special night shift team which, according to regional manager Colin Brooks, exceeded expectations by keeping deliveries ahead of programme throughout.

"I would like to congratulate Roadmac for its professionalism in running this contract, our suppliers who helped us to achieve our targets and the Much Asphalt team in PE."



Jimmy Henderson of Much Asphalt (left) and Leon Klopper of Roadmac Surfacing on site at Port Elizabeth airport.

Record month for Northern Region

Much Asphalt's Northern Region (Gauteng, Freestate, Limpopo and Mpumalanga) had a record month in terms of asphalt quantities delivered in April 2008. Heavy workloads are set to continue with many freeway projects and some new airport work in the pipeline.

Much has recently embarked on a JV contract with National Asphalt for the supply of about 72 000

tonnes of modified and unmodified asphalt to Roadmac Surfacing at Bloemfontein airport.

We commissioned one of our two mobile asphalt plants on this site which, together with the static plants of both JV partners, enables us to feed the contract 900 tonnes per day.

The project should be complete by September 2009.



Message from Tom Gilbert

My family and I will be immigrating to Perth, Australia this month. I would like to wish my colleagues in the industry all the best for the exciting times ahead.

It was back in May 1988 that I joined Protea Asphalt in Durban, and the past 20 years have been a very interesting and challenging learning experience for me. I hope to pass some of my knowledge onto the Australian asphalt industry.

Environmental upgrade at Eikenhof

A new gas, oil and oxygen acetylene store has been erected at Much Asphalt Eikenhof in line with safety regulations.

The project, incorporating a new emergency bitumen shower, was planned and executed by maintenance supervisor Lionel Coleman.

Also as part of our environmental upgrade programme, a bunker has been built for aggregates and a large water tank installed for dust suppression. Two new rap bins have been approved by the board and should be commissioned by October 2008.



BEFORE



AFTER

Outlook for the Western Cape

An update from regional manager Garth Miller

Some exciting new projects are on the cards in the Western Cape. This is very good news as – contrary to the trend in the rest of the country – sales have been slow in recent months. We have recently been awarded the following high profile contracts:



Houwhoek Pass to Botriver

This SANRAL project forms part of the N1/N2 toll road upgrade, in which Much has played a major role to date. We will manufacture the bitumen rubber blend required at our Eerste River plant. Construction starts in September 2008, with completion due in May 2009.

Hospital Bend

A much publicised Provincial Administration project, this is one of the busiest and most dangerous stretches of road in Cape Town. We have secured the order from Haw and Inglis and supply is due to start shortly. A large part of this work will take place at night, from our Contermanskloof plant. Construction space is very confined, making for difficult working conditions.

Several other large projects are at various stages of planning:

The R300

This R525-m contract, incorporating the biggest asphalt quantities to be advertised in the Western Cape at present, entails rehabilitation of the R300 linking the N1 and N2 freeways by a JV between Roadmac and Haw & Inglis.

Asphalt will be required from September 2008 till June 2010 and, although the required daily tonnages are not huge, the programme is extremely tight. Constraints will include daily supply between 09h00 and 15h00 only, and no supply on Sundays, public holidays or over the December break.

N1: Koelenhof to Huguenot Toll Plaza

We expect this contract to be advertised in July 2008, with asphalt required from September/October. The existing slow lanes will be deep-milled and replaced with 100mm of BTB and the whole road will be overlaid with wearing course.

An interesting feature of this contract is that it calls for the addition of 20% reclaimed asphalt pavement. This is certainly a first for the Western Cape.

The second leg of this project, from the Huguenot Plaza to the Huguenot Tunnel, will follow.

N2 Somerset West

This road widening contract is also expected to be advertised in July 08 and once again calls for the addition of 20% RAP.

Koeberg Interchange

A much-anticipated Provincial Administration contract, the Koeberg Interchange on the N1 freeway is valued at more than R450-m and will alleviate constant bottlenecks. No lane reductions will be permitted during busy traffic periods, which will pose some interesting problems as this is one of the busiest intersections in South Africa.

Table Bay Boulevard

Not yet awarded at time of going to press, this project entails construction of additional lanes. Asphalt work will commence in December.

We are planning to bring in a mobile plant (NOMAD 1) from Worcester with the main objective of ensuring continuity of supply to our smaller customers during the busy periods.

STOP-THINK



In our continued drive to create safe working environments in all

16 branches of Much Asphalt, we completed our annual Health, Safety and Environment (HSE) audits between March and May this year.

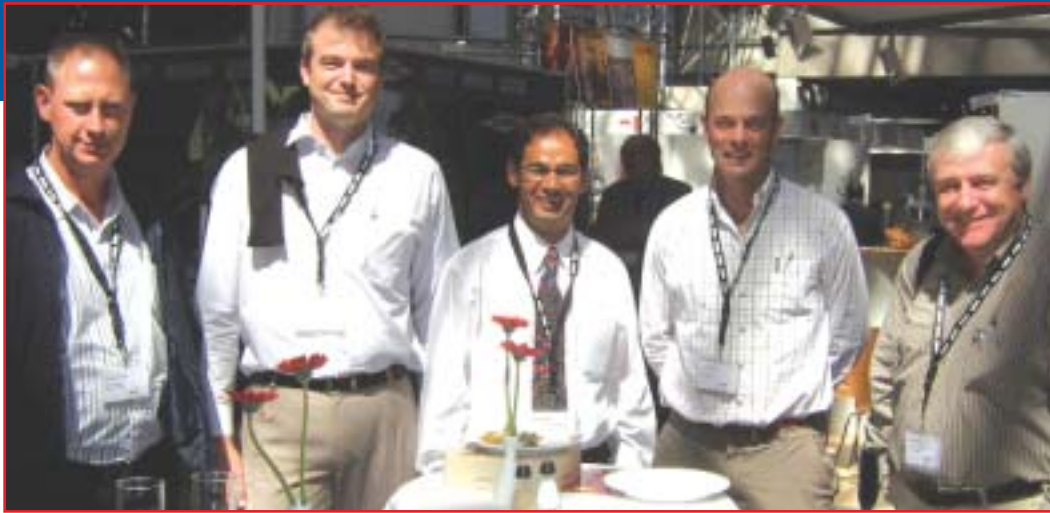
The audits were conducted by an external independent consultant with extensive experience in manufacturing environments.

A very encouraging 80,6% of findings from 2007 were closed, thanks to hard work by the branch managers and their teams together with the financial and moral support of senior management. Contermanskloof in the Western Cape deserves a special mention for achieving a 100% closure record.

With our DIFR at 7.43 by the end of April, we will continue to work hard towards achieving our 3.0 target by the end of October 2008.

Open Space workshops

The second phase of the Murray & Roberts STOP-THINK health and safety initiative, *Open Space*, was recently launched in Cape Town and Johannesburg with the specific aim of generating new ideas. Management delegates from Much Asphalt plants around the country attended the workshops alongside other M&R companies. We look forward to implementing some of these ideas as we strive to make Much Asphalt a place for permanent zero harm.



Representing the South African asphalt industry at the Eurasphalt & Eurobitume Congress in Copenhagen were (from left): Herman Marais, director – Materials Technology at Much Asphalt; Erik Denneman of the CSIR; Seirgei Miller, currently on sabbatical at the University of Twente in the Netherlands; Trevor Distin of SABITA; and Les Sampson of the Asphalt Academy.

Sustainability is key in global asphalt conference

Herman Marais, director of Much Asphalt responsible for materials technology, was one of five South African delegates at the 4th Eurasphalt & Eurobitume Congress in Copenhagen, Denmark, from 21 to 23 May.

The theme of the congress was **Asphalt – Roads for Life**.

“The ever-increasing need for road infrastructure that is socially and environmentally acceptable demands new thinking and technical innovation. These issues were debated by the European Commission, industry, road user groups and environmental organisations,” says Herman.

In a keynote address, Daniel Tardy, president of the European Construction Industry Federation, said the major challenges facing the road building industry were climate change and securing energy supply.

Perpetual pavements

The need for “perpetual pavements” is becoming ever more critical in light of scarce resources and Prof Andre-Gilles Dumont, EPFL-Lavoc, Switzerland, listed the major factors that contribute to the success of perpetual pavements globally as:

- well designed and high bearing capacity of the sub-grade, sub-base and base layers;
- lower pavement layers providing a good support to the upper asphalt layers;
- selection of appropriate aggregate for the unbound base layers to prevent permanent deformation;
- wide enough pavement design to avoid traffic edge loading;
- good drainage of the whole pavement structure to avoid ingress of water into the

lower layers;

- frost resistant sub-base material;
- high quality construction, with technical specifications respected;
- good homogeneity within the individual pavement layers;
- reducing the air void content of the mixture and selecting appropriate binder to minimise ageing of the pavement;
- conservative design giving an extra thickness for much longer pavement life;
- use of modified asphalt with higher performance;
- good asphalt mix grading to obtain a rut resistant asphalt mixture.

A session was dedicated to new developments in the use of RAP (reclaimed asphalt pavement). “It would appear that there is a drive to use high percentages of RAP in asphalt mixes in Europe. In excess of 50% is recommended, even in surfacing layers,” Herman points out. “The latest European standard implemented in January this year makes provision for RAP contents up to 60%.”

Greenhouse gasses

The reduction of greenhouse gases in the asphalt manufacturing and placing processes is receiving much attention in Europe. A technology known as Warm Mix Asphalt (WMA) works on the principle that by reducing the asphalt mixing temperature less energy is required and less greenhouse gases are emitted.

Other advantages of this new technology are reduction of exposure by workers to fumes, less hardening of the binder and extension of the European paving season.

The current processes used for Warm Mix Asphalt production fall into three main groups, namely wax additives, water based (foam bitumen, emulsion, zeolite) binders, and low-viscosity vegetable binders. The wax additives are used to reduce the viscosity of the binder at mixing and placing temperature. The required temperature to obtain proper coating of the aggregates during mixing can therefore be reduced.

The temperature window for compaction of these wax modified binders is also shifted down, which means that the required field compaction can be achieved at lower temperatures.

Binder modification

Also prompting vigorous debate were specialised test methods to better understand the properties of binders, and developments in binder modification.

Binder modification techniques that are becoming common in other parts of the world include the use of polyphosphoric acid as modifier to increase the higher performance grade rating of bitumen without any negative effect on low temperature performance (bump to higher grade). This has been used extensively in the USA for the past 10 years and recent studies have shown it to be a viable option to increase the stiffness of binders at road temperatures.

Another development in binder modification is the use of nano clay particles as bitumen modifier to increase the stiffness of the binder and improve ageing resistance.

Feedback sessions are planned around South Africa from 22 to 24 July 2008 and interested persons should contact their regional SAT representatives for times and venues.

We would like to see more industry interaction in *Surface Talk*. In this new column we publish comments from our colleagues in the industry.

What do
YOU
think?

Derick Pretorius, director: Airports, Roads and Highways (South) at Arcus Gibb

The asphalt manufacturing and paving industries in South Africa face the challenge of transforming from a “minimum quality

delivery” approach to an “optimal quality delivery” approach.

Some key external and internal quality drivers can assist

this process:

- employer (and engineer) initiated remuneration systems that reward high or exceptional quality work, such as technical tender credits, bonus payments, special industry awards and recognitions (SABITA, SAT, SANRAL etc);
- performance guarantees on selected projects where applicable;
- quality enhancing alternatives to be called for (or allowed) in tenders on specialist high performance paving contracts;
- internal staff development and training to enhance HMA end product quality;
- branding of asphalt products and specialist layers by suppliers or supplier/contractor JVs, with performance properties pre-tested and application accurately defined;
- investigation and uniform application of best practice manufacturing and construction paving principles on each project in order to continuously upgrade, develop and embed quality enhancing methodologies.

These goals can only be attained if there are common objectives among all stakeholders functioning on a project level in the industry. Politicians, project-outsiders and academics can hardly drive this process effectively as it needs a day-

to-day focus in the preparation of each tender and on each construction project by all key people. This includes client’s contract manager, consultant’s engineer, contractor’s project director, resident engineer and site agent.

Institutions like SAT, SABITA and the Asphalt Academy are key in ensuring assimilation of project knowledge and experience gained on similar projects to facilitate industry growth and quality delivery. SAT, in particular, should be commended for its efforts to enable project based experience to flow and be absorbed into future projects.

In the past five years Arcus Gibb has administered and engineered projects where approximately 500 000 tonnes of asphalt and FrictionPave products were supplied by Much Asphalt. Most of these projects were executed according to “optimal quality delivery” principles. The leadership taken by Much Asphalt in this respect on the manufacturing side should be noted.

Best practice

Various contractors (Zebra Surfacing, Rand Roads, Power Construction, Roadmac and others), research and industry institutions (ITT-US, SABITA) and employers (ACSA, CoCT, PGWC) have also contributed to this critical project-based product enhancement drive.

Some of the best practice development efforts to date are reflected in the latest revised SABITA Manual 5: Guidelines for the Manufacturing and Construction of Hot Mix Asphalt (2008). Much Asphalt has played a significant role in contributing to the review panel’s effort in setting best practice guidelines for the industry.

Rudolf Fourie, managing director of Roadmac Surfacing

We have waited a long time for the asphalt industry in South Africa to pick up and it is very exciting to tender for major contracts like the Gauteng Freeway Improvement Project and the R300 (or the R150 as it is now called after the tender results) in Cape Town.

For the first time we have experienced some real growth in the asphalt industry, which gives Roadmac and companies like Much the opportunity to invest in new technology and people development. This will enable us to grow into world class companies.

Certainly, as far as technology goes, we are up there. Roadmac is one of the leading rehabilitation contractors in South Africa and we will get our share of the major projects coming up. This will strengthen our relationship with Much Asphalt, which I believe is the leading asphalt manufacturer in Southern Africa.

The increasing demands on both companies will bring out the best in us as we are driven by the same core values.

The current growth in the roads industry will last long after 2015. I believe what is happening now is not only because of the soccer world cup in 2010 but because of growth in South Africa and the backlog in infrastructure spending. Just look at the growth in airport passengers and motor vehicles and the demands on fuel and electricity.

Roadmac is currently busy with upgrades at Bloemfontein, Port Elizabeth and Upington airports. We know already that these upgrades will not be sufficient to meet capacity in 2015. Both Bloemfontein and Upington, incidentally, will receive a ULM (ultra thin friction coarse) final layer, a first in South Africa.

There are exciting times ahead for our industry and our biggest challenge will be to deliver a quality product on time. Together with Much, I am positive that we can do it.