En route

Slovakia
Colas in the heart of Europe
he year has gotten off to a good start in every region where Colas operates. Work-on-hand is on the rise, which means we can forecast that the Group will once again make further progress in 2006.

However, the steep jump in the price of raw materials, particularly oil products, is likely to offset the positive trend in our results – all the more reason for us to press ahead with our investments.

Faced with this new situation, the Group’s employees must take action. All of us – workers, foremen, machine operators, drivers of trucks and other vehicles, project managers, site supervisors, profit center managers, technicians and engineers, administrative staff, lab workers and research scientists – must focus on reducing the Group’s energy consumption.

In the workplace, each one of us must limit the energy used to carry out our jobs.

Similarly, we have to ensure that the transport of people and of equipment is better rationalized.

Beyond the urgent need for us to keep our energy bill under control, the conservation of natural resources is a priority dictated by Colas’ commitment to sustainable development. The use of alternative renewable energies and the development of material recycling constitute answers to the problem of enlightened resource management.

So that Colas can stay on the road forward, we must be ready to adapt permanently, in this area as in others, demonstrate our flexibility and move away from rigidity in our organization and our behavior.

Every member of the Group is responsible for making this effort.

Cover photo: Bojnice Castle, Slovakia (12th century).
North of Albi, in southwestern France, the Carmaux bypass on Route 88 came into service early in May. The road halves the number of vehicles passing through Carmaux, and shortens the distance between the town of Rodez and Toulouse, saving motorists around twenty minutes. The project, consisting of 13 kilometers of 4-lane highway, got underway in July 2004, with earthworks and drainage. Surface works began in July 2005, and were carried out by Colas’ Albi profit center, in partnership with another company. Roughly fifteen people were involved. 110,000 metric tons of asphalt mix were applied in broad widths, consisting of 50,000 metric tons of high modulus Colbase S asphalt mix, 40,000 metric tons of high modulus asphalt concrete and 20,000 metric tons of Ruflex very thin asphalt concrete. 25,000 metric tons of 0/20 asphalt gravel were also used. The site continued uninterrupted through the winter months.

It’s wind-win for Colas Centre-Ouest

200 wind turbines will be constructed by 2007 in Beauce, in a so-called “windy triangle” of northern France. Work began on the Poinville site in April 2005. Colas’ Centre-Ouest Chartres profit center is responsible for building the installation platforms (200,000 m²) and access roads (120 kilometers). Site work has unfolded according to a very demanding schedule under the supervision of the Regional Environment Agency, but in perfect harmony with all the players involved in the project.
Reinforced Compoﬂex
for strengthened asphalt concrete

What do a number of roads in the small town of Beaumont-de-Lomagne and sloping stretches of the RD 118 highway, all in southwestern France, have in common? They feature a new technique designed to strengthen the asphalt concrete: reinforced Compoﬂex. Developed by the Mérignac laboratory, this product combines a very resistant ﬁber glass membrane with an asphalt concrete that delivers particularly high resistance to fatigue.

Teams from the Screg Sud-Ouest Montauban and Tarbes proﬁt centers applied 57,000 m² of reinforced Compoﬂex over a stretch of more than 10 kilometers. Application of this product is quite a delicate process, but its technical qualities will make it possible to win contracts that involve treating cracks and strengthening roads. Reinforced Compoﬂex should prove a valuable commercial asset!

Runway success in Belgium!

142,000 metric tons of asphalt concrete have been laid in just two months by Colas Belgium (JMV, Enrovia and Wegebo) at the site of Liège-Bierset airport. Works have involved refurbishing the principal runway and extending it by 100 meters. The asphalt mix was produced by two batch plants, those of Liège Enrobés and Enrosambre, as well as the Colas Nord-Picardie continuous mix coating plant. To limit the emergence of cracking caused by the concrete slabs left in place, the teams applied 8,500 metric tons of Composaf. Scheduling was the major complication of the project, as it had to be organized around the take-off and landing of planes on the number two runway, which intersects the main runway in two places. The two crossroads were carried out over the weekend, and the airport had to reopen at 9 pm on Sunday evenings, failure to comply resulting in substantial penalties. In spite of unfavorable weather conditions, the project was completed three days ahead of schedule.

Colas Sud-Ouest and Screg Sud-Ouest hold that Tiger!

The Tiger Eurocopter is one of the ﬁnest aircraft operated by the French military. To provide the best possible home for it at the 5th Combat Helicopter Regiment, stationed at Uzein, near Pau airport, an aircraft parking lot was built under the orders of the French Defense Ministry. The contract was awarded to Colas Sud-Ouest and Screg Sud-Ouest, operating together. Manpower was provided by the two subsidiaries’ Pau proﬁt centers. The project, worth €4 million, got underway in May 2005, and was recently completed. Altogether, the aircraft parking lot constitutes 76,000 m² of roads and 7,700 meters of drainage networks. An 8,000 m³ rainwater reservoir was also constructed. In addition, the Colas Sud-Ouest Novasol team treated 80,000 m² of ground with lime and cement.
12 kilometers of tracks of the Eastern tramline in Lyon are now bordered by 27 noise barriers made of Gard stone... Installed by the Grigny profit center of BRS on behalf of Sytral, these noise barriers, which are between 1.50 meters and 2.25 meters tall, required 22,500 blocks of stone, totaling some 13,500 metric tons. The contract, worth €2.6 million, involved a team of roughly twenty skilled workers, who had to come to terms with the configuration of the site, in the heart of the city, and the narrowness of the tram platforms. The screens were installed using a semi-trailer fitted with a hoist and a block claw. Mechanization certainly made it easier to handle the blocks, but that did not mean it was possible to speed up the process of installation, which averaged a rate of between 11 and 12 linear meters per day. Because of their weight (between 250 kg and 350 kg each), installing the blocks was no easy matter. Nevertheless, the site was completed on schedule. A big-screen performance, if ever there was!

Originally built at the dawn of the 20th century, the Cap d’Ambre lighthouse, a metal structure, urgently required rebuilding. A year of work was needed to construct the new reinforced concrete structure, 30 meters tall and 4 meters in diameter, located 70 km from Diego Suarez, at the extreme north of the island of Madagascar. Teams from Colas Madagascar had to prepare self-extending formwork in their workshops, which made it possible to rebuild the tower by raising it in successive 0.85 meter stages. Equipment and materials arrived by sea on board the subsidiary’s landing craft, the Barge Express.
After a gestation period of several years, the 40-hectare Bresse motor racing circuit opened this spring. Local motor sports enthusiasts can practice driving cars and motorcycles around an approved 2.9-kilometer track, which is 12 meters wide on average. The operation was performed on a design-build basis by Screg Est. Other Group profit centers taking part in the project were Screg Est’s in Bourgogne Franche-Comté, SNEL, Screg Grands Travaux and SJE (Colas Est).

Apart from the race track itself, the project included 50,000 m$^2$ of service roads and parking lots, as well as ten buildings. All in all, 270,000 m$^3$ of cut and fill, 90,000 m$^2$ of soil stabilization, 40,000 metric tons of 0/31.5 as-dug gravel and 17,000 metric tons of asphalt mix were needed.

The customer’s specifications were stringent with regard to the evenness of the track, which was difficult to comply with because of the complexity of the corners. Before the final layer was applied, the circuit was tested by car and motorcycle racing professionals.

There are now plans for a second phase of development, which will include a 1.1-kilometer go-kart circuit and a road safety circuit with low-grip zones.
Colas reinforces the Boboc military airbase

Late in 2004, SCCF Iasi, a subsidiary of Colas in Romania, won a contract to reinforce the runway of the Boboc military airport, in the southeast of the country. Worth roughly €9 million, the project calls for the production of 200,000 m$^2$ of concrete slabs. The technical solution imposed by the customer, the Romanian Department of Defense, also includes sealing existing joints and cracks and repairing badly damaged slabs. SCCF Iasi is using concrete specially formulated by its central laboratory. The company has also had to invest in a mobile ready-mix plant capable of a productivity rate of 70 m$^3$ of concrete per hour, as well as a slip form machine. The site has “enlisted” approximately sixty members of the company’s workforce. Works began in April 2005, and are scheduled for completion in October 2006.

Paving over the shipyards

Following the closure of its shipyards, the town of La Seyne-sur-Mer, in the south of France, decided to renovate the site, converting it into a landscaped pedestrian zone. Work on the site, which extended over 5 hectares, began early in 2004, and the new development was officially inaugurated in January 2006. Twenty employees from Sacer Sud-Est’s Provence profit center were involved on one part of the project, a contract worth more than €2.5 million. The works consisted of earthmoving, dirt and aggregates backfill, construction of networks and, finally, the application of surfacing. This features a variety of materials and colors, with Colorasphalt colored asphalt and sand blasted asphalt, as well as brushed concrete and surface-retarded concrete in different colors. To give the zone an even greater air of distinction, granite, basalt and porphyry slabs and stones were also laid.

Colas builds for the French military

Colas Djibouti now has to its credit a number of buildings for the French forces stationed in Djibouti (FFDJ). Following the offices it built for the army and a building for the commissary, the subsidiary is now at work on a 6,000 m$^2$ workshop intended for the maintenance of military vehicles, heavy vehicles and tanks. The contract, which is worth €4 million, includes sixteen sections, only four of which are being subcontracted. All the rest of the contract is being carried out by around sixty employees of Colas Djibouti. Some of the sections of the contract are rather unusual, such as those relating to distributing fluids and compressed air, extracting burned gases and installing traveling cranes. The structure of the building uses a mixture of reinforced concrete and metal. It was calculated by the Colas Madagascar engineering office to withstand earthquakes and bear the weight of five 10-metric ton traveling cranes.
The new bypass of the Polish town of Gniezno, situated roughly 50 kilometers from Poznan, provided an ideal opportunity for Rugosoft to be used for the first time in central Europe. The 5.3-kilometer bypass, forming part of Route 15, was built by Strada. The road was intended to ease congestion in Gniezno, which was suffering the nuisance of several thousand vehicles a day of through traffic. Work on the project was launched in September 2004 and lasted more than a year. The new bypass was opened to traffic in November 2005.

For this contract, Strada had suggested applying Rugosoft, a new skid-resistant road surface that greatly reduces road noise. In all, some 65,000 m² were applied. The extreme ease of application of the product, its effectiveness in terms of skid-resistance and its noise-reduction properties mean that Rugosoft has proved to be a popular choice for authorities, road users and local residents.

The Rue de la République, in the center of Rouen, Normandy, has been transformed. In barely four months (as opposed to six initially forecast), Screg Ile-de-France/Normandie totally demolished and rebuilt a 400-meter stretch of roadway including several crossroads, applied asphalt mix across the full width (6.20 meters) and relaid the sidewalks with cobblesstones and slabs.

**Rugosoft** makes its debut in central Europe

**Paving the way in Rouen**

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The space exploration center in French Guyana is buzzing. It is making preparations for the arrival of the Russian Soyuz rocket launcher on the Kourou site, just 10 kilometers away from the Ariane rocket launch pad. An ambitious project, in which the Ribal TP agency took part, working on excavation, roadways and the foundations of buildings, as well as overall drainage of the future launch area. Work began in January 2005 and was completed in March 2006, well in advance of the stipulated date. Ribal TP was involved in the definition and design of the structures. Because excavation was carried out on compressible soil, the construction survey had to be based on the time it would take to consolidate the various bases and the compatibility of this with the overall infrastructure construction schedule. A total of 102 hectares were cleared, drained and landscaped: 250,000 m$^3$ of earth was excavated and 450,000 m$^3$ of back-fill dumped. In addition to the specific nature of the terrain, teams were confronted with frequent flooding of the site during the rainy season. They will have to wait until November 2008 to see the first launch, however!

FRANCE Brush up your English!

A few more months and the Screg Île-de-France/ Normandie’s Montlhéry profit center’s teams will have really made progress… in English! They are currently working on the Air Park de Paris international business park site located at Hauts-de-Wissous, south of Paris, for British property developer Akeler. Neither the project manager, nor the business officer nor the architect speaks a word of French! The teams have not only to brush up their English but also adapt to British standards. In Europe, construction industry norms, product dimensions and techniques still vary from one country to another. The British are unfamiliar with on-site soil stabilization. Another example, the sides of the asphalt section are lined with metal in the UK, whereas flush concrete curbs are laid in France. The contract therefore calls for a particular effort to be made in terms of understanding, adaptability and flexibility.

The first phase of work will be completed in July and the second phase, which involves hotel and office accommodation, will be handed over in January 2007.
It took less than five months to construct the private airfield of oil and gas exploration, development and production company CNRL (Canadian Natural Resources Limited) in the region of Wood Buffalo, north-west of Fort McMurray, Alberta — a performance that was achieved by E Construction and Wapiti Gravel Suppliers Div., both subsidiaries of Works Alberta. Construction of the airfield is part of an $11 billion project involving operation of an oil sands mine pit, but the CNRL teams needed to be able to get to the site easily. Worth over €75 million, the project was carried out entirely by E Construction, from the design phase through to the construction of the terminal, laying the runway (1,800 m long and 45 m wide) and aircraft parking area and installing the lighting system. A few figures demonstrate the scale of the operation: 241,500 metric tons of aggregates were used as well as 28,000 metric tons of asphalt (with a daily output of 3,000 metric tons). The site is located in an isolated forest region, so the teams were housed in a temporary camp set up near the site.
The Alain Prost go-kart circuit in Le Mans was in need of a facelift. The Spay Sacer Atlantique agency was chosen by Skaco, the kart club in western France that operates the circuit, to carry out the work. After some planning of the track, an asphalt surface dressing of the Saceracing type (using Sacerflex modified elastomer binder) was applied. The contract incorporated a certain number of technical requirements: a go-kart track must not have any joints, and must be totally even. Teams worked round-the-clock, at a fast pace, the surfacing being applied with two finishers working side by side. Another specific aspect of the project is that the tight bends of the track meant large-size vehicles could not be used and materials had to be brought in on 15-metric ton trucks. All of these obstacles were easily overcome, and go-kart enthusiasts can now drive on a track truly worthy of the name of the great French motor-racing legend, Alain Prost.

Cofiroute has given its entire motorway network of static and dynamic sign panels a makeover. The Ile-de-France agency of El-Si and Somaro’s Angers office were involved in this ambitious project. El-Si was responsible for dealing with the network’s 120 variable message panels. 90 of these were enlarged at the Pessac plant. Specifications called for the control cabinets as well as the LED cards to be reutilized, but also for new electronic cards to be constructed. The teams then installed the panels inside new structures and hooked up the electric power. Somaro’s Angers office, working in a consortium, was given the contract for the civil engineering work, and constructed 600 concrete structures. On this extremely extensive contract, spread out over the entire Cofiroute network, teams had to contend with a number of difficulties which arose partly from the recuperation of the existing equipment and partly from the traffic. Time between dismantling of equipment and installing new material had to be kept as short as possible to minimize disruption to motorway users.
In more than fifty years of existence Colas’ two subsidiaries in Slovakia, Inžinierske Stavby and Cesty Nitra, have established themselves as key players in the construction of Slovakia’s infrastructures. Let Routes take you to visit their finest achievements.
Clearly, the integration of central European countries in the European Union is reliant on highways. The future Slovakian motorway network will form part of the European transport system. The main section will be the D1 motorway, linking Bratislava, Žilina, Poprad and Košice and reaching to the border with Ukraine. Currently, there is a total of 315 km of motorways operating in Slovakia, and a further 285 km are scheduled to be built by the end of 2010. Once it is finished, the D1 will become part of the E50 trans-European highway, which will cross the continent from France in the west to Ukraine in the east, passing through Germany, the Czech Republic and Slovakia. Colas’ Slovakian subsidiaries, Inžinierske Stavby and Cesty Nitra, are taking an active part in this vital project.

A unique bridge

“I would say we have succeeded in creating a ‘symphony’ of perfect engineering architecture as this piece of work harmonizes with the Váh river and the surrounding hills and mountains,” says Jozef Kolárik proudly. As an engineer at Inžinierske Stavby’s no. 9 unit, he was the site manager of the Ladce-Sverepec section of the D1 motorway, a project worth €54 million. On this 10-kilometer stretch, which crosses demanding mountainous terrain, 39 bridges have sprung up, including the Pružinka Bridge, named after a small river flowing under it – a unique structure in central Europe. 900 meters long, the iron-concrete bridge actually consists of two bridge constructions (one in each direction). It has been in service since December 2005, and was entered in a national construction of the year competition in 2006.

Bypassing “the lowest mountains in the world”

Slovakia has a dense but antiquated road network. Its capacity has been insufficient for a long time. Because of a lack of finance, the National Highway Company prioritizes the most badly damaged sections. Since 1998, a new motorway has been under construction at the foot of the Tatras mountains, which the Slovaks call “the lowest mountains in the world”. Thanks to financial contributions from the European Union, construction of the 25-kilometer section between Mengusovce and Jánovce is now to be speeded up. “At last, freight traffic will be diverted from the High Tatras and the environment will improve for the inhabitants of many towns and villages,” remarks a delighted Pavol Prokopovič, the Slovakian minister of transport, >
post and telecommunications. Working in a consortium with a Swiss company, Inžinierske Stavby will carry out the first part of this section. “The works are scheduled to last 36 months, but we will do our best to finish earlier,” says Jaroslav Jarábek, general manager of Colas for Slovakia. Further east, the company is also starting work on building another section of the D1, this time between Svinia and Prešov, a 7-kilometer stretch that includes ten engineering structures.

Heavy traffic in Košice
Košice qualifies as the “metropolis” of eastern Slovakia. Since last year, its 250,000 inhabitants are no longer forced to endure heavy trucks driving through the city. The new road link between Prešovská and Sečovská came into service in October 2005, but only two-thirds of the project have been completed to date. Construction has been performed by Inžinierske Stavby under difficult conditions. “We had to ensure that traffic kept moving, which was a very delicate operation to perform in the built-up part of the city,” explains site manager Miroslav Čorba. Once the link is finished, however, in-town traffic will be much improved.

The largest construction company in the Košice region, Inžinierske Stavby is also working on the contract for another major project: the construction of a galvanization plant for U.S. Steel Košice. Three hundred people are working on this site, 24 hours a day, even in temperatures of -25°C. “It is a huge building, 360 meters long and 64 meters tall, and will be a terrific reference for us,” says site manager Alojz Koníček. “It is a very complex project, even now, in the final phase. For example, we had to develop a special formula for the concrete because of the underground water table.”

Automobile facilities
In February 2007, the steel producer will turn out the first galvanized steel sheets for the automobile industry, a sector that is expanding rapidly in Slovakia. Indeed, the Group’s Slovakian subsidiaries have played an active part in building a number of facilities for automobile manufacturers.}

> LOCAL LEADER IN CONSTRUCTION
The largest construction company in the Košice region, Inžinierske Stavby is currently working on a galvanization plant.

> BACKGROUND
Inžinierske Stavby, based in Košice, in eastern Slovakia, celebrates its 55th anniversary this year. It became part of the Group in 2004. For more than 25 years it has played a part in the construction of the Slovakian motorway network. Roads and bridges currently make up roughly 70% of its business, the remainder being generated by civil engineering works, building industrial infrastructures and water management amenities. The Group’s second subsidiary in Slovakia is Cesty Nitra, a member of the Group since 2000. It is established in Nitra, at the opposite end of the country. The company has been a specialist road builder for more than half a century. The two companies complement each other very effectively through their mutual cooperation.

> BACKGROUND
Inžinierske Stavby and Cesty Nitra: Two Complementary Companies
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Beyond roads, beyond borders

The European Union is providing funds to finance significant drainage and water infrastructure systems in Slovakia, projects that include the construction and renovation of pipes, wastewater treatment plants, drinking water distribution networks and even flood drains... like those currently being constructed by Inžinierske Stavby in the east of the country.

The company is also involved in projects beyond the borders of Slovakia. In the Czech Republic, it was recently awarded a contract worth €120 million for the construction of an 18-kilometer section of the D47 motorway between Belotín and Hladké Životice.

LEADING PLAYERS

The operations of the Group’s two subsidiaries in Slovakia constitute one-third of the country’s road construction market.

MARIAN HUDÁK

RESEARCH MATTERS MOST

A young research engineer, Marián Hudák has been working in Inžinierske Stavby’s technical research and development department since July 2004. Specialized in asphalts and aggregates, he is fascinated by the new technologies introduced by Colas, such as cold asphalt technologies. “I am very impressed by Colsoft, which incorporates crumb rubber and is capable of reducing traffic noise on the busiest road by between 5 and 7 decibels. That’s wonderful!” For Marián, the integration of Inžinierske Stavby into the Colas Group is extremely positive: “Colas is very highly respected, and our businesses are very close,” he explains. He cannot imagine how a large company can have a future without developing new technologies. He cooperates with specialized departments of the Košice university on road techniques and regularly works with the company’s central testing laboratory. Marián is a highly motivated young man.

MARTIN TÓTH

EVERY DAY IS DIFFERENT

At the age of 28, machine operator Martin Tóth knows all about his job. He has been working for Inžinierske Stavby, at the wheel of his roller, for a year and a half. “Today we are doing the groundsoil, but tomorrow it will be earthworks. It changes all the time! I drive the same machine and work on the same project, but every day is different,” he says enthusiastically. Martin is currently involved in the project of building a gigantic galvanization plant for U.S. Steel Košice. “At the beginning, the building site reminded me of an anthill. I couldn’t imagine how it would be possible to manage such a construction project!”

Martin recently married, and when you ask him what his wife thinks about his long shifts and late arrivals, he shrugs: “She is tolerant. I can work several days without a break, but then I have a few days off. Then we can spend time together. We like to go on bike rides.”
Following Lyon, Marseille, Rennes, Nantes, Tours, Le Mans and Lille, the major cities of eastern France will, in turn, see the arrival of the high-speed train. The new East European High Speed Train Line will mean a trip from Strasbourg to Paris will only take 2 hours 20 minutes, as opposed to four hours currently, and from Strasbourg to Nancy or Metz, only 1½ hours. With new connections, the cities of Rennes and Nantes in Brittany, in western France, will only be 3 hours 50 minutes from the new station in Lorraine, in eastern France.

The project also has a European dimension: the idea is to connect the French rail network to the European rail network in general and the German rail network in particular. This will put Luxembourg only 2½ hours away from Paris, and Zurich 4½ hours away, although it will be 2010 before the bridge between Strasbourg and Karlsruhe can be brought into service. All in all, the map of French and European transport is being redrawn.

Construction of the East European High Speed Train Line will have an impact not only on the growth of rail traffic in eastern France, estimated to be 66% by Réseau Ferré de France (RFF), operator of the French rail lines, but also on the economy of the regions it passes through. “These regions are going to undergo massive change,” says a spokesman from the RFF. “High-speed links have a direct economic impact that will be felt the entire length of the line.” With the construction of three new train stations in the east (in the towns of Bezannes, Trois-Domaines...
capable of producing the ballast suitable for high-speed railway lines. These include the Colas-owned quarries at La Gouraudière and Raon-l’Étape, which supplied the site.

Maximum precision…

Laying high speed train track requires the use of a special technique. 7 km of temporary track is laid, to transport 400-meter lengths of welded rail. A train then brings 42 bars – 1,000 metric tons of rail. The sleepers are then placed along the track at the rate of 1,000 a day, replacing the temporary track. They are aligned perfectly to within 2.1 millimeters, so the rail can be laid. Once this has been completed, a quality supervisor ensures that the rail is leveled off to the exact height of the line. A fifteen-person team supervises the ballasting-leveling process and checks the position of the track at each step.

… and continuous inspection

“Inspection cannot take place at the end of the contract, it has to be constant,” explains Yves Baillon. “Time for technical and quality checks has been included in the schedule to enable inspection of the track characteristics and ensure immediate rectification, based on recordings made continuously by the machines.” The same method is applied to the following stage, laying ballast. Special trains dump out between 4,000 and 5,000 metric tons a day, which are then laid by powerful, accurate ballasting machines. Adjustments are then carried out to obtain the final ballast profile. The tolerance for the ballast profile is of plus or minus 2 centimeters. At the same time that the main track is laid, specialist teams are working on laying 80 switch sets, the position of which has to be adjusted to within a millimeter. Like the track, the switches are ballasted and leveled off. The quality requirements of the contract weigh quite heavily on the minds of Seco-Rail teams. Yves Baillon, who has spent most of his career with the Group’s Road subsidiaries, compares the stringent demands of this job to “airport runway contracts, where you cannot leave the smallest speck of gravel!” As well as the ballast profile and making the track parallel with the catenaries to within 2 centimeters, the demand for quality is continued right through to the final stage of track laying. The rails are cut and stress released via special planishing before the welding teams get down to work. By means of this operation, which

"The stringent demands of this job resemble airport runway contracts."
The weather and safety – two further challenges

A further challenge, specifically related to the climate of eastern France, is the cold. Icy weather can easily throw off the original dates and site schedule, solidify the ballast in the trucks, prevent dumping operations and bring the progress of work to a halt.

Of course, a site that is on such a large scale and so demanding requires complex management of the teams. To be able to muster a workforce of 280 people, temporary and short-term contract personnel were needed. Each new arrival received training in company work methods, particularly in safety practices. “Given the nature of the work performed by the teams and the risks that they run, arising, for instance, from handling bars of steel weighing 24 metric tons, we have to make sure the teams work together and that each individual remains focused all day long in order to reduce incidents involving lack of attention and lower the risk of accidents as much as possible,” says Yves Baillon.

The East European High Speed Train Line is a unique contract; it is extremely worthwhile and makes everyone proud to work on it. Pride, passion and the spirit of winning – in years to come the teams will be able to say, “We built that line!”

 QUALITY ALL ALONG THE LINE
The quality control supervisor checks the position of the track between each leveling phase. A 15-person team supervises the ballasting-leveling process.
Located on the banks of the Rhône river, since 1992 the Cité Internationale of Lyon site has seen the construction of apartment buildings, offices and a convention center, all designed by the Italian architect Renzo Piano. In 2003, Greater Lyon decided to build an extension to the Palais des Congrès convention center large enough to hold international congresses with up to 3,000 participants. Renzo Piano designed the Salle 3000, a 180° amphitheater, with modular seating ranging from 900 to 3,220. An magnificent piece of architecture, it resembles an enormous saucer placed on a pond. Six retractable exterior staircases provide access for the public. When they are retracted, the saucer is closed and inaccessible. Eurofaçade was responsible for the cladding of this extremely unusual structure.

The technical audit
“Because of its very plain lines, it looks like a simple structure, but achieving the level of quality stipulated by the specifications took many hours of engineering work,” explains Gabriel Seradieu, Eurofaçade regional manager. “For this type of project, the real decision-makers are the architects. We work with them on finding technically and financially optimized solutions for the construction of façades.” This proved the occasion for the company to demonstrate the expertise of its engineering office of 16 civil engineers and draughtsmen. The project, worth €6.3 million, was in two contracts and involved...

On June 1st, President Chirac inaugurated the Salle 3000 amphitheater at the Cité Internationale venue in Lyon. The cladding of the structure was carried out by Eurofaçade, a specialist top-range application subsidiary of Smac. A subsidiary whose expertise is highly prized by architects.

Eurofaçade – a specialist in top-range façades
three projects: cladding the shell with aluminum sheets, roofing and acoustic cladding, cladding of the building facades in terracotta tiles. Work began in July 2004. In the spring of 2006, the mission of the Eurofaçade’s Salle 3000 “dream team” – comprising Tarik Amrani, site supervisor and cornerstone of the team, Joseph Carbonelli, project manager and Carole Balloue, chief civil engineer – was finally accomplished.

Tests, prototypes, and logistics

On site, work on cladding the shell required five operators. “It was high-precision manual work, but it was a bit like a huge Meccano set because all the sheets were prefabricated,” says Tarik Amrani. Upstream, 4,300 hours of engineering work were necessary to define the technical characteristics of the 8,527 sheets, calculate their length (which differed depending on their location) and design a system of stainless-steel fastenings. Prototype panels were then made and sent to Renzo Piano for approval.

Wind-tunnel tests were then conducted to assess how the sheets vibrated, how strong they were and how to fasten them together at the right angle with some 11 different positions to reflect light from the sky and the water in the pond. One-third of the sheets were already in place when Renzo Piano asked for them all to be taken down again. He wasn’t satisfied with the angles that had been chosen. “We spent a long time putting them up and taking down again; we had to coordinate with the other teams in order to comply with the architect’s wishes,” says the site supervisor.

The site was also tight in terms of storage and logistics because of its location, packed between the river, the railway line and the road network. Among other things, it was necessary to orchestrate 60 trucks which brought in the thousands of sheets being manufactured by Eurofaçade as the work advanced.

Acoustic requirements

Another requirement on a project located in a noisy environment was the acoustic level. It had been requested that noise reduction systems cut up to 52 dB. Once again upstream work in the engineering offices was vital. Built with the Surfa® system, the roof is made up of 5,000 trapezoid panels, laid over 5,300 square meters. “Before closing it off we always bring in the Veritas technical audit office,” notes Tarik Amrani. In January 2006 the audit office raised the bar still higher when it asked if the roof would be strong enough to resist 30 centimeters of frozen snow. It was up to Eurofaçade to demonstrate that it would. With the help of the Smac technical department, a campaign of workshop testing took place in order to confirm the hypotheses and calculations on the resistance strength of the roof. “We used systems that are so innovative that there are no references for them. Discussion was down to tolerances of one-quarter of a tenth of a millimeter,” explains Gabriel Seradieu.

From the Zénith in Dijon...

Salle 3000 is not the only recent structure that Eurofaçade can be proud of. It also worked on the Dijon Zénith concert hall, designed by architects Chaix and Morel. On this contract, which was finished within six months, adjustments and finishing work were carried out next and required a 64-meter truck crane. On this contract, which was finished within six months, safety was a constant concern because of the large amount of work carried out at height. The Dijon Zénith opened with its first concert in October 2005.

> KEY FIGURES
- 5 training centers:
  - Vaulx-en-Velin
  - Pierrelatte
  - Vitréoles
  - Reunion Island
  - Anneyez (74)
- 27 skilled workers
- 4 supervisors
- 84 employees, including:
  - 28 managers
- 31 supervisors
- 27 skilled workers
- > BUSINESSES:
  - waterproofing, roofing, cladding: 53% of sales
  - façades, wood works, walls, curtain walls: 40%
  - renovation: 7%
- > CLIENTS:
  - public sector: 37%
  - private sector: 63%

> WORKFORCE:
- 84 employees, including:
  - 28 managers
  - 4 supervisors
  - 27 skilled workers
  - 31 supervisors

> ROUTES No. 19 – July 2006

TARIK AMRANI
CLOSE TO THE CUSTOMER

Tarik Amrani, site supervisor, has taken part in all the meetings held (three times a week) with the owner of Salle 3000. He is the repository of the site memory. “The hardest thing is juggling all the different teams – electricians installing wiring, workers installing air conditioning with ducts, teams erecting wallboard, and so on.” Tarik has had his fair share of stress and problems to manage (including the organization of the site picnic in March, attended by 300 people!). But his technical skills have impressed everybody, as well as his consistency and reliability, and he rapidly became the person the owner would most readily seek out. “It has made me proud” admits Tarik modestly. He has 18 people under his supervision, including four young people he has sponsored and who were subsequently hired by Eurofaçade. A member of the order of Compagnons de l’Arche, Tarik took his sponsoring duties extremely seriously. He himself started work at the age of 19 in a Smac workshop, with a basic electrician’s qualification; nine years later he went on his first sites as a fully qualified skilled worker. “You improve with each new contract,” he explains, “on Salle 3000 like all the others. And you get to work with different architects all the time.” He will be site supervisor again on the Confluence Museum project.
PROSPECTS

A FLAGSHIP CONTRACT: THE CONFLUENCE MUSEUM

A project originating with the Rhône Département, the Confluence Museum, dedicated to the theme of "science and society", will be built at the confluence of the Rhône and Saône rivers in Lyon. The architects, the Austrian firm Coop Himmelblau, wanted the construction to be a striking and meaningful piece of architecture. Known as the "crystal cloud", the Confluence Museum will look like a kind of deconstructed intergalactic vessel. "A body in levitation with the garden of the confluence flowing below," the "cloud" will feature a roof, walls and an underside, all bearing a metallic skin. The €15.3 million contract for the cladding has been awarded to Eurofaçade.

Although construction work got underway on June 8, Eurofaçade's involvement on-site is not scheduled until September 2007. The technical studies are well under way. Special software has been developed to determine the number and size of painted aluminum panels that will envelop the structure. Key parameters include acoustics and the transition with the "crystal". Eurofaçade has already detached a team of eight engineers to the site to determine procedures and operating methods. The Confluence Museum, which promises to be the most spectacular contemporary architectural creation in Lyon, will provide Eurofaçade with a superb calling card.

… to a multiplex cinema in Reunion Island

Another recent contract carried out by Eurofaçade, under altogether different skies, was the roofing and waterproofing of a fourteen-screen multiplex cinema in Sainte-Marie de la Réunion. Work lasted from February through September 2005. For the company, which has been established on the island since September 2004, this was its first Reunion Island contract. The team was able to put to test the efficiency of its methods when working thousands of kilometers away from home. This "test-bed project" made it possible to refine techniques and organization to match local requirements to availability of material on the spot, transportation time between the island and mainland France (6 weeks), cost of local labor and working with the local climate. "If we have omitted to import any material this causes delays and the situation can rapidly become catastrophic," explains Sébastien Perrot, head of the agency. To judge by the success of the Sainte-Marie job-site, Eurofaçade kept the risks under control.

Following on from the contract, the company won another multiplex construction contract, this time for an eighteen-screen project, followed by yet other jobs. "Today, we have twelve contracts underway on Reunion Island," says Gabriel Seradieu.

THE DIJON ZENITH: A PROJECT THAT HIT THE HEIGHTS…

Raising the Zénith sign, a giant metal element 40 meters tall, into place was a “high point” of the Dijon Zénith project.
A 32-year-old engineer, Xavier combines a rigorous technical mind with a taste for exotic foreign travel. He managed to combine these two enthusiasms three years ago when he became head of the central laboratory of Antananarivo, Madagascar. “We design concrete and asphalt, as well as conducting specific tests on aggregates and soils,” he explains. “The site laboratories carry out quality controls and ensure work is executed correctly.” He is not short of work! The President of the Malagasy Republic has launched a major program of road works. The aim is to build or renovate 15,000 km of roads in 10 years. As a result, Colas has made massive investments in developing its laboratories, including the purchase of new equipment, building extensions, personnel training and ISO 9001 certification. “We’re using techniques that are new for Madagascar, such as cold micro asphalt,” explains Xavier. In less than four years, the island has already acquired 800 km of new roads and over 3,000 km have been refurbished. As Xavier says, “We’re taking part in the development of Madagascar. Here, projects are country-wide. And there are still many roads to be built and natural wonders to discover.”
Health is a full-time job

ISABELLE RAKOTOARISOA
MEDICAL OFFICER
 MADAGASCAR

“Dr Isabelle” has been caring for the health of Colas Madagascar’s 4,000 employees for eight years. An active member of the Madagascar Association of Women Doctors, she gives routine vaccinations, treats “bumps and bruises”, but is also battling against malaria, cholera and HIV/AIDS.

“In 2000 I started to visit sites,” she explains. “On one, I found 80% of the workers suffering from malaria and some of the cases were very serious. Effective treatment had to be introduced very quickly.” Dr Isabelle has carried out regular site inspections since then.

“I also do a lot of preventive medicine, working in partnership with the government and the International Labor Organization,” she adds. “The work involves distribution of impregnated mosquito nets, water purification tablets, training in basic hygiene and raising awareness of sexually transmitted diseases.” In 2002, she extended her information campaigns to people living close to the sites. Since 2005, each employee has been given a health record card. “There’s been a lot of progress,” says Dr Isabelle. Today, her actions receive support and are continued by five other Colas medical officers and six outside doctors hired by the company.

They still have a major task in terms of healthcare and preventive medicine, but the motivation and energy of Dr Isabelle and her team know no limits.

Follow your star…

JOSEPH FREMONDIÈRE
PROFIT CENTER HEAD
FRANCE

At the age of 15, Joseph Frèmondière, with just a technical high school diploma, started work in a surveyor’s office. Could he have dreamed that one day he would be the head of a Colas profit center of almost 100 people? Probably not.

“I wanted to continue my studies, but as the oldest of seven children I had to start work young so I could bring money home,” he explains. However, Joseph went to night school at the same time and after national service in the armed forces, decided to study topography and mapmaking in a community college. He graduated a year later. “I then wrote to 30 engineering and public works companies to find a job. Colas offered me a post as a geometric surveyor in Châtellerault.” Ten years later, in 1982, Joseph left Colas for Cofiroute. He was to return in 1989 as a construction manager for the A10 motorway project. He became site supervisor in 1991 and then head of the Châtellerault profit center. “I was a bit apprehensive at first, I was worried that I wouldn’t cope, but everything went very well. You have to believe in yourself; get out there and know how to grasp opportunities. For example, if I hadn’t met a civil engineer during my national service who encouraged me to go back to school, I wouldn’t be here today. And now my greatest reward is to see a young person who I have trained get promoted and pursue a brilliant career at Colas.”
**Jean-Claude Ebane**

**Site Supervisor**

**Gabon**

Jean-Claude Ebane has recently been assigned to Gamba, in the southwest of Gabon, to work at the headquarters of the Shell petroleum company. *“Shell is currently working on a project for cleansing land polluted by oil. I have to provide sample surfaces to test the efficiency of different processes,” says Jean-Claude.*

Age 40 and a native of Gabon, he graduated from the Ecole de Technologie Supérieure engineering school in Montreal and the Ecole Spéciale des Travaux Publics. He joined Colas in 1998. “To begin with, I was involved in quality management, and then I became a site supervisor. The work is highly varied and never routine. At Oyem, in the north of Gabon, I was in charge of a 20-person team. Here in Gamba I’m part of the team of Colas employees that has been seconded to Shell.”

**Aldona Mizgalska**

**Laboratory Manager**

**Poland**

Aldona Mizgalska chose somewhat by chance to study public works at the Poznań technical high school. When she graduated she started work in a public works company while going to night school to become an engineer. In 1987, she was put in charge of the laboratory. Her company, which had in the meantime changed its name to Strada, joined the Colas Group in 1997. Aldona then became acquainted with the products and techniques used by Colas. She worked with them so that she would be able to promote their use on Polish roads. This helped make Strada the pioneer of very thin asphalt concrete overlays in Poland.

“Joining the European Union was a very important moment for all Poles and, of course, for the road network, which now has to be made compliant with European standards,” says Aldona. She is enthusiastic about meeting the challenge, and knows how to fire her teams with the same enthusiasm whether they are inside the laboratory or on-site. She is fully at ease in what remains a male-dominated universe. In her view, women “contribute order, precision and gentleness, all of which are important qualities.”

Currently, Aldona is involved in a project that is very important to her, the introduction of the plant-based binder, Vegecol, on the Polish market. No doubt her determination will pay off!

*“Our challenge is complying with European norms”*

*“The more complex the contract, the more I like it!”*
For Eugen Sarbu, the end of the Bucharest-Constantza motorway contract marks the beginning of a new career. This asphalt plant manager has just been made asphalt mix production manager for Colas in Romania. At the age of 48, Eugen has now been assigned the task of managing two asphalt plants.

“After completing my technical studies, I worked for fifteen years in a Romanian public works company before joining Screg Romania back in 1995,” Eugen explains. “Already familiar with site management and being in charge of a team — until now he has been heading a team of two operators and three workers — Eugen Sarbu now has no choice but to get to grips with computers and information technology to prepare for his new job. He has had to temporarily abandon his fishing rod for mouse and keyboard in his spare time because even a man of his experience sometimes has to find the time to master new technology!

The environment is my priority

FABIENNE MALVEAULT  
ENVIRONMENT COORDINATOR  
FRANCE

Checking that asphalt mix plants are compliant with regulations and implementing corrective action when they are not are the two major tasks that Fabienne Malveault performs in her job. At the age of 26, she has strong expertise in her subject. On her résumé is a technical environmental degree from Strasbourg, a masters degree in environmental science and technology from Rouen and a postgraduate diploma in quality, safety and environment from Dijon. “I have been working in the Industrial Production Department of Sacer Paris Nord-Est for the last three years,” Fabienne explains. “My job consists of visiting all the plants in the Île-de-France and Franche-Comté regions. It is a fascinating and highly varied job which means that I’m constantly learning and helping to share good practice, taking it from one site to another.” Fabienne is also in charge of putting together the necessary paperwork to send to the local branch of the Industry, Research and Environment authorities. “Everything from filing notices to applications for permits,” she says. Another of her jobs is monitoring compliance with ISO 14001 on asphalt mix plants and quarries. “I regularly take part in the inter-subsidiary ISO 14001 audits that are coordinated by the Group Environment department,” adds Fabienne. How does she see her future? “In the environment!” comes the answer.

“I will have new responsibilities…”

EUGEN SARBU  
ASPHALT MIX PRODUCTION MANAGER  
ROMANIA

For Eugen Sarbu, the end of the Bucharest-Constantza motorway contract marks the beginning of a new career. This asphalt plant manager has just been made asphalt mix production manager for Colas in Romania. At the age of 48, Eugen has now been assigned the task of managing two asphalt plants.

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“A new challenge every day”

JOHN DALLIMORE
BRANCH MANAGER
SOUTH AFRICA

John Dallimore, 56, has spent his entire career as part of the Group. “I have Colas in my blood!” he laughs. “I followed in my father’s footsteps. He originally opened the Colas office in Kenya in 1956. He used to take me along with him on jobsites.” John joined Colas East Africa in 1968 and first of all worked on the big Nairobi-Mombasa road contract. He then had a number of jobs – construction technician, laboratory technician, salesman. Today, he is the manager of the bitumen and modified bitumen emulsion plant in Durban and heads a team of 28 people. The plant works mainly with public works contractors but also with government departments and regional and local authorities. “Every day is different,” he says. “The thing I like most about my job is that there is always a new challenge. A customer can ring you up in the evening to ask you to deliver at five o’clock the next morning!” Competition is fierce and business is often done under conditions that are becoming increasingly tough. To deal with the stress, John goes to work out at least five times a week and as often as possible indulges in his two favorite pastimes, which are golf – “In South Africa we have the finest courses in the world,” he says – and deep sea fishing, with his latest haul an 80-kilo black marlin!

“Good working conditions for my team”

JANA GEJDOSOVA
SALES MANAGER
SLOVAKIA

Jana Gejdošová, sales manager at center number 9 at Slovakian subsidiary Inžinierske Stavby, is a woman of her times who knows what she wants. “To do my job successfully, I have to know about tendering, forecasts, project supervision, marketing and everything else arising out of it!” But far from being intimidated by all this she is totally in her element and appreciates the diversity of her tasks. Recently, Jana was asked to make a presentation to the Slovakian committee of the International Concrete Federation about a particularly interesting contract, the Pružinka Bridge, built as part of the D1 Ladce-Sverepec motorway contract, which involves a large number of structures. In addition, she is currently taking part along with her Colas Hungária colleagues in the preparation of tenders for the construction of motorway bridges. For Jana her main concern is that the members of her team have good working conditions. “This includes a number of things,” she reflects. “There has to be real motivation, high-quality tools, flexible working hours and strong involvement of young people in the structure of the company.”
Jean Lalo, technical and purchasing manager of Somaro, sums up the company’s business: “Through our products we contribute to improving safety and providing road user information in all weather. We “dress” the road, supplying the “make-up” to match the right “outfit” for each occasion. We do what you see and what makes it possible to see, in all weather conditions.” In fact, Somaro supplies and markets all types of products used to guide users on roads and in streets: safety equipment, signals, road paints, traffic regulation lighting equipment – what is generally known as the road environment. Of course, Somaro’s areas of business are a natural follow-on from those of Colas.

Established in 1958, the original Somaro company has gradually evolved into a group in its own right. It currently consists of some fifteen brands and companies entirely involved in the road and urban improvement sector. The group is organized in three major business areas: safety equipment, road markings and maintenance and services. With eight production facilities, the company exports to approximately 20 countries and has a workforce of over 1,600.

Speed, efficiency and performance

Within Somaro, the road marking activity involves specialist companies Vialis, Prosign, AFM and Fourlon and production units Indasco, Prosign and Veluvine. The road marking business has a workforce of nearly 600 people and constitutes more than 30% of the French road marking products market. “To a certain extent, the business can be compared to that of Colas road subsidiaries”, explains Jean Lalo. “As with road construction, we design and apply ‘asphalt mix’ and ‘surface dressings’. In our industry, the tiny glass beads which reflect the light of the headlights play the role of aggregates, and that of the paints, which bond the glass beads on the roadway, can be assimilated to binders.” Of the 30,000 metric tons of road marking products used every year in France, paints – water- or solvent-based – represent in excess of two-thirds, heat-application or thermoplastic products over 20%, dual component cold-application products 10% and prefabricated strips, 2%.

The main characteristic of the business is the speed of execution. The teams can apply products very fast, at a speed of 3 kph in urban conditions and 15 to 20 kph on open highways, the aim being to...
disrupt traffic as little as possible. In light of this, research and development is focused on the idea of developing products at the cutting edge of performance in terms of drying speed, durability, skid-resistance and retro-reflection performance, with a constant eye on the issue of environmental protection. “We have to manufacture products that are suitable for all weathers, fully visible under the worst possible meteorological conditions, at night, in heavy rain or fog,” emphasizes Joseph Maho, head of R&D at Prosign. “In the research and testing laboratories as well as at all production sites the quest for performance is a priority. A white line on a road is never something neutral. Upstream, at all levels of design, production, application or responsibility there is always expertise, a professional team. Our job consists of ‘writing’ the Highway Code onto the road to ensure better safety for drivers.”

Commitment and responsibility
“Somaro is a private-sector company that provides a public service,” adds president Christophe Mitridati. “Our customers are the French Departmental and city authorities, and the government through the local branches of the Public Works Directorate. The very high level of quality of our products is part of the scope of our responsibility. It is the same for contracts with a guaranteed result that we are currently developing, which deliver guarantees on the length of product service life, the...”

PAINTING IS AN ART
Road marking is something of an art... including the art of applying marking products as rapidly as possible – 3 kph in urban conditions and 15 to 20 kph on the open road.
In addition to the efforts and investments made for the eco-design of the road marking products which it manufactures and markets, Prosign is keen to strengthen the productivity of its materials. The company manufactures, maintains and markets innovative equipment for road marking: tracers, hand-held machines, marking trucks, etc. Avenues of research in these areas today focus on the multiplexing of machines, their automation, remote camera guidance during the application of the products on the road and data transmission between the equipment and the profit centers. “Mark, guide, protect”: faithful to its motto, Prosign is strongly aware of the responsibility involved in its business.

Similarly involved in road safety for many years, APM has for many years promoted “calm driving” and marketed prefabricated marking strips for permanent or temporary application for store signs, logos and school playgrounds, along with safety products (speed bumps, lane separators and markers) and road surface dressings designed to make accident-prone zones safer (bus corridors and bus stops, cycle tracks, pedestrian zones, rest areas, walkways and parking lots).

What sets Somaro’s road marking business apart is the great diversity of its products and expertise of its workforce, specialized in driver information and road safety.

monitoring of products in situ and their technical characteristics in terms of skid resistance, visibility and whiteness. Responsibility also takes the form of an environmental commitment: 28 of the road marking products designed on our sites – hot surface dressings using renewable resources and water-based paints and surface dressing – have been granted the seal of environmental approval from the French Board of Standards. Prosign and Indasco have received ISO 9001 and ISO 14001 certification and have been awarded numerous prizes, along with the first French ISO 14025 Eco-profile label product – for Prosign’s water-based paint, Typhon.

PRODUCTION
• 8 production sites
• Annual paint production:
  - Prosign and Indasco: 7,500 metric tons
  - Veluvine (Netherlands): 3,000 metric tons
• Annual paint and cold surface dressing production:
  - 3,500 metric tons at the Breda (Netherlands), Noyon (Paris region) and Rouen (Normandy) sites
• Annual thermoplastic production: 14,000 metric tons on the Breda (Netherlands) and Brétigny-sur-Orge (Paris region) sites
• Annual production of prefabricated strips: 30,000 m² on the Brétigny-sur-Orge site
Refurbishing networks on sensitive sites: a technique in itself

The sleeving technique
Initially, the principle is the same — penetrating the ground by sinking a borehole. Following this, techniques vary. Sacer Sud-Est and Screg Ile-de-France/Normandie use sleeving. Having inspected the network by remote camera and cleaned out the pipeworks by planing them, sleeving operations can begin. A polyester sleeve is introduced into the pipe and adheres to its sides. "The sleeve will harden under ultraviolet light," explains Alain Testud. At Screg Ile-de-France/Normandie, sleeving is done by a reversion technique and polymerization of the resin carried out with water heated to 90° C. "Like this, the pipe is repaired with a very strong sleeve that gives it a new structure," explains Jean-Romain Poulain.

Pipe cracking
Another highly innovative technique in rehabilitation of networks without excavation work is that of cracking. Colas Rhône-Alpes has been using this for two years. "Ditches are dug about 100 m apart from each other," explains Geoffroy Lécureur, head of the Grenoble profit center. "Bars are then introduced into the ditches and pushed into the pipes that need repair. The bars pull along the cutting tool that then splits the old tube as it moves further down the pipe. An expander cone comes behind this to make the channel wider and lay the new pipe."

Both sleeving and cracking are high-performance techniques that combine quality, safety, technical expertise and environmental benefits.
Sloan Construction Company Inc. is operating a new hot-mix asphalt plant located near Columbia, South Carolina. With a production rate of 400 metric tons/hour and programmable logic controllers (PLCs), this high-tech installation will enable substantial savings. Although energy costs are rising fast, the new plant will minimize the cost of drying aggregates, and at the same time make it possible to increase the percentage of recycled asphalt pavement (RAP) in the mix design. “It’s black gold that we have to make full use of,” explains plant manager Sherman Goodwin.

All the binder pipes and valves have thermal insulation. In addition the bitumen is recovered and then pre-heated using the exhaust of the heating system before being transferred to it. To minimize electricity consumption, the fan of the dust extractor and that of the Phoenix heater have been fitted with variable-speed motors running on AC power. This has considerably reduced the amount of electrical power that is required and has also reduced noise. In addition, Sloan Construction Company Inc. has set preventive maintenance targets – after all, in asphalt production as in all else, prevention is better than cure!

Sloan Construction’s new plant will make savings

Spac and Smac develop synergies

Every day, it seems as though new synergies emerge within the Colas Group. The partnership that has developed between the Spac profit center in Arras and a number of Smac companies is a good example of this. In addition to many contracts carried out for the Smac Axter plant at Courchelettes (walkways, metal platforms and maintenance work), the Arras profit center always endeavors to include Smac agencies in its bids.

The two brands have already carried out a number of contracts together, such as the Rhodia plant in Ribécourt, where Smac had the contract for the cladding, or the Sanofi plant at Vitry-sur-Seine, involving a complete change of the roof on a production facility. “We have a great deal to gain from working together,” emphasizes Raymond Kupczak, manager of Spac’s Arras profit center. “The fact of bidding together in a joint tender makes it possible to deliver the strength of a Group to the customer, and it makes a big difference to our credibility. We have every interest in making the most of the complementarity of our business areas for our customers.”

Spac has installed a metal platform at the Axter plant in Courchelettes which provides access to the top part of the bitumen silos.

Sloan Construction Company Inc’s new asphalt plant replaces a unit that dated back to 1962.
**ACQUISITIONS**

**Terry Industries**, a newcomer at Barrett Paving

Barrett Paving, an American subsidiary of Colas, has expanded with the acquisition of Terry Industries in the Mid West, an operation that should give rise to some highly positive technical contacts. Terry Industries is now able to offer special products developed by the Group such as the Fibredec and Colnet processes, while Barrett Paving will benefit from the new subsidiary’s microsurfacing expertise – a road surface refurbishment technique that is in ever-increasing demand from the Federal Highways Administration. Another of Terry Industries’ business areas is waterproof surfacing for the foundations of buildings, manufactured under the House Guard brand name and marketed throughout the United States. Emulsion used for this process is made in Alma, Michigan, one of Terry’s two production sites, the second being in Hamilton, Ohio. With a total asphalt storage capacity of 110,000 metric tons, the two sites each produce 20,000 metric tons of emulsion and 10,000 metric tons of polymer modified asphalt per year. Located in Hamilton, which is also the home of the company headquarters, the Terry Industries R&D laboratory, certified for both emulsion and asphalt, will now work together with the various American subsidiaries to strengthen Colas’ leadership on these specialized markets.

**Colas Asia** makes a move into South Korea

Colas Asia recently concluded a joint venture agreement with the South Korean company Insung Co. Ltd. The agreement has given rise to a new joint subsidiary, Isco Industry Co. Ltd. Originally established in 1960, Insung, leader in the manufacture of steel drums and sales of bituminous products in Korea, actively contributes to the economic development of its country. Active throughout the entire nation, it has three steel drum production facilities and has operations in the areas of emulsions, asphalt mix, aggregates, road construction and recycling, and also has an R&D department.

Insung is a good example of a company with complete mastery of an industrial chain. It was therefore only natural for Colas to associate itself with a group that has similar and complementary activities to its own. Insung will bring its market knowledge to the partnership, and Colas its expertise. Isco should get off to a rapid start during the third quarter, with a quarry opening some 200 km south of Seoul. This should soon be followed by other businesses, including the manufacture of bituminous products. It is hoped that improving diplomatic relations between North and South Korea and the prospect of reunification or open borders will mean good future prospects for Isco.
n order to improve the safety of site personnel, Jean-Luc Poissenot, operations manager at Sacer Paris-Nord-Est, decided to organize a safety day at Vesoul on March 10. The topic of road safety was chosen to illustrate the more general problem of vigilance. The aim was to convince the three hundred people who took part of the need to modify their individual behavior, both at work and in their private lives, for greater safety.

A full morning

The program was opened by Thierry Caussemille, president of Sacer Paris-Nord-Est, with a summary of the 2005 safety record and the accident prevention plan for 2006. Alain Joyandet, mayor of Vesoul, and Joël Phillard, head of the Public Works Directorate of Haute-Saône, then presented their targets in terms of road safety. Then, to a stunned audience, an accident was simulated onstage by actors, followed by a role-play exercise in which the personnel took part.

Practical workshops

Workshops were organized, too. One of these involved driving under the influence of alcohol, and relied on a variety of teaching materials, such as reflex testers, vision-impairment glasses and informational CD-ROMs. In another workshop, a representative of the local police demonstrated the different forms of police control, including radar and electronic alcohol testing, while Highway Code rules such as safety distances were also explained by the traffic patrol officers on the same stand. Another subject was safe driving. A workshop headed by the public relations manager of the Peugeot plant at Vesoul included a theoretical section and practical driving on a track, working with swerves, steering a slalom course and skid techniques. Another major topic was safety in the use of equipment. An equipment rental company took part, explaining good practice: wearing safety belts, reading safety stickers, wearing personal protection equipment, safety when towing, etc. Lastly, there was a workshop on the rules of good driving, organized by members of the company, the aim of which was to clearly state a certain number of basic principles of safe driving – checking the condition of a vehicle, being comfortable when driving, being in good physical condition.

A duty of personal vigilance

At the day’s end, Thierry Caussemille, supported by profit center heads from the region, reiterated the importance that the Group attaches to this basic value of safety, both at work and on the road. “Each employee has a duty of personal vigilance, not only in his or her professional life, but also at a personal level,” he concluded.
On course for safety...

Colas signed up to the European Road Safety Charter in 2005, pledging to extend its accident prevention policy to all its European subsidiaries. Its target for 2008 was a 25% drop in accidents involving third parties throughout the entire European zone, with some 60 companies in 15 countries. Measures that had already been tried and tested in France and certain companies in Belgium, Poland, Switzerland, the UK and the Indian Ocean were progressively rolled out in other countries, and in each country a steering committee and road safety programs were put in place. These actions should start to bear fruit.

In France, the Group’s efforts since 1997 to achieve progress with regard to road safety have produced a constant improvement in the results obtained. In eight years, accident frequency has fallen by 33%, even though the number of fleet vehicles has risen by 64%. The level of performance achieved by the French subsidiaries shows that people’s attitudes have indeed changed: today road safety has become an integral part of corporate culture. With 500 employee road safety coordinators working on the ground every day to raise team awareness and 18,700 employees having received Scope safe driver training, Colas has spared no effort!

A winning partnership with Assia El Hannouni

With inner of four gold medals (100 m, 200 m, 400 m and 800 m) at the Athens 2004 Paralympic Games, French athlete Assia El Hannouni has an exceptional track record. Born in Dijon in 1981, Assia is visually impaired and has a progressive condition. Since 2003 she has been running with a guide and she has learned to overcome her disability through athletics. Her perseverance has been amply rewarded: she picked up a number of medals in the 2002 and 2003 athletics World Championships before her great success in the 2004 Paralympics.

Colas recently concluded a partnership contract with Assia. The Group has agreed to support her so she can devote herself full-time to athletics training as well as her studies in communications. Colas will therefore be present as her official sponsor during the upcoming meets she is preparing for—the French Championships, international meetings and the World Championships in the Netherlands next fall. Under the terms of her partnership with Colas, Assia has been invited to take part in events organized within the company that showcase values shared by both the Group and the athlete—the thrill of a challenge, a liking for effort, determination and simplicity.
HUMAN RESOURCES

asser Hadjelaoui is a machine operator and key player at the Colas Est profit center in Pfastatt. Hired after a succession of odd jobs and temporary work, his successful professional and social integration is a perfect example of what the Group is seeking to achieve in providing job opportunities for young people from deprived urban areas. “This is the kind of thing we need to do over and over to meet our recruitment needs,” comments Hervé Garnier, the Group’s Human Resources manager. “Initiatives are underway at local level thanks to the commitment of our teams.” The example of Nasser Hadjelaoui has proved “that we can broaden our recruitment drive to include young people from tough inner-city zones,” remarks Jean-Marc Couplet, head of HR at Colas Est.

“We have provided a framework for work contracts including vocational training.” These thirteen-month work experience contracts lead to a technical diploma in public works. And there is a further reward for those who make it through the program: they are hired with regular full-time contracts.

Training and hiring

Somaro’s IDF/Nord-Picardie profit center has decided to operate along similar lines. “Every year, we recruit roughly ten novice candidates, and we offer them contracts through a temporary employment company, combining work for us with a program of vocational training,” explains Karl Kervargant, sector manager at the L’Ile-Saint-Denis office. “They are able to follow a variety of training schemes related to our business, and can even qualify for a truck driver’s license. The young people achieve a success rate of around 50%.”

In Nantes, Sacer Atlantique has belonged to an employers’ group for work integration and training for 11 years. “In their tendering specification, public contracting authorities stipulate that we must employ underprivileged people,” points out Jean Sechet, head of the Nantes office, “so we ensure that we permanently have three young people on training schemes on our books.” Selected by the employers’ group, they are trained either in pipeworks or in road works.

Screg Sud-Est has devised a system for taking on and training young apprentices. “To cope with the lack of qualified labor, we have had to broaden our field of action,” says Frédéric Zydaczewski, manager of the Echirolles profit center. With the national employment agency, a temporary employment company, a partner specialized in work integration and a training organization, Screg Sud-Est chooses candidates, tests them as temporary workers for a month, then offers them a ten-month combined work and training package. “The first two years of this initiative have seen 70% of the young people hired with full-time contracts after the training,” reports Frédéric Zydaczewski.

Work opportunity programs for young people

The Group has developed a number of programs to train young people from inner-city zones, like Nasser Hadjelaoui...
IN THE PICTURE

QUARRY DAYS 2006

An event in Dayton, Ohio: the seventh Quarry Days meeting was held in February...

... attended by 70 employees of Colas North America. The program included a visit to subsidiary Barrett Paving Materials and a dinner at the Aviation Museum at the Wright-Patterson Air Force Base.

THE SACER SUD-EST CONVENTION

450 people gathered for the Sacer Sud-Est Convention, organized in Camargue. Topics on the agenda included safety, recruitment, health and a presentation of each profit center’s highlights.

SACER SUD-EST COMPETITION: “PEOPLE WITH A PASSION”

On the occasion of its convention in February, Sacer Sud-Est selected ten of its employees as winners of an in-house competition on the theme of “people with a passion.”
AN AWARD FOR SINTRA INC.
The Group’s Quebec subsidiary, Sintra Inc., has been awarded the Construction Industry Training Fund’s prize for 2004-2005 by the Quebec Association of Road Builders and Civil Engineering for its achievements in employee training.

BARRETT MIDMICHIGAN ARE THE KINGS OF RAP
In 2005, the Barrett MidMichigan profit center in the United States used 350,000 metric tons of RAP (Recycled Asphalt Pavement). This recycled asphalt represented 35% of its total asphalt production, a record for the region. Barrett hailed this performance by presenting the teams the James E. Weeks RAP Award.

COLAS SUD-OUEST CONVENTION
“Keep making progress” was the main message of the Convention organized by Colas Sud-Ouest in January.

AN ACCOLADE FOR SOMARO
The Essonne Chamber of Commerce and Industry presented an environment prize to Somaro for the quality of its waste management. The award was accepted by Jean Lalo, technical and purchasing manager of Somaro.
KOFI ANNAN VISITS A COLAS SITE IN MADAGASCAR
Invited by the President of Madagascar to visit the Queen’s Palace, which Colas Madagascar is restoring, Kofi Annan, Secretary-General of the United Nations, was impressed by the scale of the project, the sophistication of the techniques and the professionalism of the local workers taking on this challenge.

THE “MARATHON DES SABLES”
Five members of the Group competed in this mythical endurance race in the South Moroccan Sahara. Event organizer Patrick Bauer presented them with a special environment award.
Left to right: Benoît Louault (GTOI La Réunion), Patrick Guénolé (Colas Sud-Ouest), Patrick Rivaud, Patrick Nawadi (GTR Marrakech), Lionel Petit (Sreg Sud-Est) and Jean-Pascal Fouquet (GTOI La Réunion).

ROAD SAFETY TROPHY
Alain Decourchelle and Bernard Sala accepted the Road Safety Challenge trophy on behalf of Colas Est from Alain Dupont. Looking on is risk manager Dominique Birraux.
HUMAN RESOURCES MANAGERS AND DOCTORS MEET…
In April, the first meeting for company medical officers and HR managers of subsidiaries in the Paris region was organized at the head office.

ONE DAY, I’LL BUILD ROADS WITH COLAS
This spring, the Group’s human resources department launched a new recruitment campaign throughout mainland France. Some 30,000 copies of the poster were displayed in all towns with over 800 inhabitants.

IN THE PICTURE

AT THE FORUM IN CASABLANCA
Four Colas subsidiaries in Morocco (GTR, LRM, Urbis Signalétique and Colas Emulsions) took part in the 2006 building and construction industry forum. The event was held this year in Casablanca.

GOING, GOING, GONE!
Colas took an active part in the first auction of civil engineering equipment organized in France at Gaillon in Normandy, by the Canadian company, Ritchie Bros. Over one hundred lots were sold to companies from more than 40 countries.

IN THE PICTURE

IN THE PICTURE
THE CONVENTION OF COMPAGNONS DE LA ROUTE

In June, the Compagnons de la Route congregated in Erfoud, in eastern Morocco, for their second convention.

More than 700 of them made the journey to share this unique experience together…

…but on camel-back!

...to explore the Todra Gorge region of the desert in SUVs…
Pavel Prokopovič: “Bringing the Slovakian network into the European transport space”

We talk to Pavel Prokopovič, Minister of Transport, Posts and Telecommunications, about the current state of Slovakian transport policies.

The modernization of the country’s road network, particularly with the construction of the D1 motorway that will link Bratislava to Košice, is a key factor in the economic development of Slovakia. What are the main policies of the road program?

Pavel Prokopovič: The transport policy of the Slovak government forms part of the European transport master plan. We are committed to the renovation and development of our transport infrastructures in line with the definition of the European multimodal corridors IV, V and VI. Our main objectives are therefore the development of the road and motorway network, and the renovation of the rail network. Concerning road infrastructure, we have built 30 km of motorway, 22 km of expressway and 19 km of access roads over the period 2003 to 2006, a total of 71 km of roads. Currently, 103 km of roads are under construction. The key D1 motorway project is scheduled for completion by the end of 2010.

Finance comes from a number of sources: public, private, European funding and motorway tolls. To be able to benefit from both structural funding and cohesion funding we had to set up a coordinating committee in the ministry that covered all the technical, financial and administrative aspects. The cohesion funding was for an amount of €344 million to help fund our transport infrastructure projects and regional funding represented €243 million.

PPP (Public-Private Partnership) contracts are currently being envisaged by the Slovakian government as a way of financing and building new sections of motorway. Do these projects constitute an opportunity for construction companies?

P.P.: The Ministry of Transport is actually looking at PPP projects as a way of advancing the motorway construction program. A tendering process will be launched shortly for the construction and operation of a 30-km section of the D1 motorway between Lietavská Lučka and Turany. This will be a build, manage, operate, maintain concessionary contract, probably for duration of 25 years. If the PPP contract method is chosen, the State will pay the concessionary company a fixed annual royalty for the entire period of operation.

The Slovakian government is once again investing in the rail network, with lines being refurbished in the west of the country. What are your principal objectives in this area?

P.P.: Our priority is to improve the quality of the national and regional rail network to create an efficient transport system that is interoperable with international corridors and to limit the negative impact of transport on the environment. With funding from the European Regional Development Fund, we will be able to carry out a certain number of rail projects, such as electrification of the Zvolen-Banská Bystrica line and refurbishment of the Poprad-Tatry and Prešov train stations.

Meanwhile, we are also pursuing renovation work on the multimodal rail network. 52 km of electrified line have been refurbished, for a total amount of around €100 million. The renovation of the Bratislava-Rača-Trnava line will mean that trains can run at speeds of 160 kph.

The privatization of airports in Slovakia is attracting a lot of attention. What are you hoping for from this move?

P.P.: By opening up and regulating the civil aviation market, the government is hoping to achieve the specific objective of revitalizing the air transport sector and making this mode of transport available to all Slovaks. For the year 2002, the six main airports in the country had registered 550,000 passengers. For 2005, this number had tripled. Given the increasing number of passengers, and subsequent improvement in profits, it was decided to privatize the airports of Bratislava and Košice, giving the new independent airport authorities the freedom to develop commercial activities. The process was completed at the start of 2006. The profit made out of the privatization has gone beyond the most optimistic forecasts.

For the smaller airports, such as those of Poprad, Žilina, Sliac and Priešťany, the Ministry of Transport has decided to transfer the majority shareholding of the new airport authority companies to the regions and the towns, retaining its veto through a 34% stake until 2010. Until this point, the State will contribute to financing any deficits that may arise from low-volume activity.

It is certain that the opening of the Slovakian air transport market was facilitated both by our entry into the European Union, and an increase in our purchasing power. The government has also contributed to the development of air transport through subsidizing reductions and tax incentives. This favorable environment has brought about the emergence of the first low cost airline operator in central Europe. The number of jobs in the sector has also increased sharply. As for passenger planes registered in Slovakia, their number has increased from 24 to 47 over the period 2002-2005.

If we can briefly return to the subject of roads, specialists and users are currently strongly favoring cement concrete road surfaces. Would you say that this is just a passing fashion or a basic trend?

P.P.: The Ministry of Transport, and particularly the State motorway operator, approves of the use of this type of surface and is highly favorable to this alternative for new motorway projects, particularly in sections where cement concrete surfaces are necessary, such as tunnels.
Daniel Levigoureux: “Nothing distracts the eye”

What does recognition of your work by the Colas Foundation mean to you?
A foundation of this nature, which is recognized in the art world, is something that is unique. That it has awarded me this distinction I find particularly flattering. I like the idea that my painting reaches out to meet others, that it will be going on a journey throughout the Colas Group companies. Painting has to come out of the world of specialists, it is something that is for everyone.

On your canvases, the horizon is a long way away. Land, sky and seascapes, they’re all about space...
Whether it is the plains of the Beauce farmlands, or the beaches of the North Sea coast, huge areas devoid of obstacles, it is vast space that attracts me. Where there is immensity, nothing distracts the eye. To see clearly and reproduce a vision on canvas, you need distance. The line of the field is horizontal, the lines of houses in the distance are vertical. This is reality, seen between these lines and colors, contrasting or blending in with the landscape that they themselves have created. There are also sometimes images of reality, such as a road that goes down to the sea, crosses the field, dives into the town, as if it were going further, looking for something.

What are you seeking to express through your canvases?
Far from philosophy, my canvases reflect reality. Less is more: the fewer things there are, the more one sees. Solitude and simplicity are not melancholy, they are essential. I work very hard on the colors, which I use to give nuance to a landscape. Because reality should come as a surprise. Because being alive means being surprised every day.

Born in 1945, Daniel Levigoureux is a painter of space and light. He uses pastel color fields in which occasional splashes of bright, vivid hues contrast sharply to paint landscapes whose strength is in their perspective, their only sign of a human presence. Based near the town of Dieppe, he drives around France in a truck specially fitted with large windows so he can “see from afar – the only thing I care about doing.” Inspired by his favorite painters Fra Angelico, Saenredam (a 17th-century Dutch painter), Mondrian and Giacometti, his brushstroke can sometimes sketch faster than the eye can perceive.
Laurent Audoye,
Jean-Jacques Labruyère,
Alain Broussard, Patricia Gerold,
Gérard Rinaldi, Frédéric Roussel,
Pascal Boes, Yves Baillon,
Bibiana Popovcova, Bruno Laffaire,
Gini Fargue, Karim Hamdan,
Kinga Stefaniak, Philippe Leloup,
Michel Roure, Stéphanie Minnebois,
Paige Nelson, Serge Mayssonave,
Emmanuel Scheer, Rémi Tournaire,
Yves Mortel, Delphine Haraux,
Gabriel Seradieu, Christophe Mitridati,
Jean-Romain Poulain, Alain Testud,
Geoffroy Leecureur, Tracey Hofheinz.
En route

Slovakia
Colas in the heart of Europe