EN ROUTE

Starring role for Colas in South Pacific

Directions
SMAC joins the Group

Intersections
with Pierre Riboulet

Information magazine from the Colas Group
number 7 / September 1999
Starting points
The tradition of road building is a wonderfully varied occupation that can be much more complex than it first appears. However, as it can be experienced from day to day with no restrictions other than meeting deadlines and living an outdoor life, it has always had an appeal to the young and the not-so-young alike.

So, what draws them to this authentic and formative profession, in which both the result and the potential of the individual are judged? Certainly such characteristics as collective creation, design and production.

Today, the field of skills involved in road building is very wide, ranging from the simplest tasks to those requiring the most sophisticated technology. There is a place for everyone.

The stereotype image of the rustic laborer repairing roads with pickaxe and shovel is long outdated. The image today is that of an industry in which research plays an ever greater part. Thanks to the discovery of new processes, the impetus of innovation and the phenomenal power of calculation now available to us through information technology, road building has become a high added value industry.

But Colas also needs to be on the cutting edge in other fields, and to back up its site team with technicians, lawyers, tax experts, financiers, human resource specialists and business people. If these teams work together and take on board the fact that the whole is greater than the sum of the parts, and if they remain humble, they will be unbeatable.

Then Colas will continue along the path of growth, never losing sight of its respect for the environment, ethics and openness.
LATITUDE/LONGITUDE
From Madagascar to Morocco and from Belgium to Benin... snapshots of Colas expertise around the world

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- Barracks rehabilitated in the heart of Lyon
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Indicators
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ITINERARIES
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**FRANCE**

**Sacer Pau keeps quiet with Miniphone**
A first in the Pyrénées-Atlantiques department, located in the southwest of France, a Miniphone site has been completed on the urban stretch of the town of Mazères-Lezons, located on highway 37. Thanks to the high-performance noise-reducing qualities of this asphalt mix, rolling noise from traffic has been reduced by five decibels. This result has been calculated by taking a series of intermittent readings with a soundmeter located within a zone that is representative of the entire stretch of highway. The readings lasted for a duration of five minutes, renewed every quarter of an hour. A reduction in noise levels of 5 decibels is the equivalent of a 68% reduction in traffic.

**Wegebo is working on the Brussels-Cologne railroad**
Wegebo (Screg Belgium) is constructing a 4.8 km section of TGV high-speed passenger train railroad between Brussels and Cologne, near Waremme, in the Liège province. This 210 million French franc contract was won jointly by Wegebo and Bouygues Belgium, pooling their skills, with Wegebo carrying out excavation work, pavement and pipeworks and Bouygues Belgium and Norpac, the structural elements. The poor load-bearing structure of the soil required the use of a special fill technique, involving special lightweight blocks made of compressed plastic bottles, assembled using thermal compression. This highly efficient process also contributes to the recycling of plastic waste. The excavation work on the railroad platform and its structural components began in 1998. Finishing work and other ancillary road works will be completed during 1999.
Reunion Island hosts a successful bridge launch

Financed entirely by the Reunion regional government, the contract for the bypass of Bras-Panon, on the east coast of Reunion Island, involves the construction of two special bridges, A5 and A6. The bridges are similar architecturally (both have two bridge decks) and have been built using the "launched bridge" technique. The bridge deck is totally prefabricated on the banks, simultaneously with foundation work performed in the river (deep foundations and piles). Once the piles are in place, the bridge deck - 5,000 metric tons of pre-stressed concrete, 150 meters long and 1.6 meters thick - is then launched across the river with the help of jacks until it is positioned. This technique is particularly suitable for use in tropical locations such as Reunion Island, where river levels may rise sharply in a few minutes.

This 66 million French franc contract is a partnership venture and one of the largest ever performed by GTOI, the Colas Indian Ocean subsidiary. Nearly 60 people have worked for 22 months laying 12,000 m³ of concrete and 370 km of pre-stressed cables. Along with work on the bridges, GTOI teams completed the foundation layer of the entire operation in March 1999 - some 45,000 m³ of back-fill and 85,000 metric tons of untreated gravel for an amount of 18 million French francs. Today, GTOI is working flat out to complete the 130,000 metric tons of asphalt pavement as well as the contracted ancillary equipment, before the bypass can open in December 1999.
Sintra is helping recycle the asphalt jungle

Anxious to keep abreast of the latest innovations and recycling techniques, Sintra, the Colas Group’s Canadian subsidiary, has created a new pavement process that incorporates crushed asphalt shingles.

The asphalt shingle has come about as the result of a partnership. On the one hand, a company which produces asphalt shingle in the form of strip slates, a type of roofing which is very common in North America. It scraps some 3% of its production to landfill, as not meeting quality standards. On the other hand, Sintra, an environmentally conscious company, which saw in the waste an interesting source of material that would be compatible with bitumen asphalt production. The shingle is made up of around 15% cellulose fiber, 55% aggregates and high-performance filler and 30% semi-oxidized bitumen. If 10% of very finely crushed shingle is added to the asphalt mix, the bitumen content can be lowered by about 2%. Moreover, the semi-oxidized bitumen and fiber mix content actually improves anti-rutting performance. Successful experimental use of the new asphalt on various urban, motorway and industrial projects last year meant further development of the new asphalt in 1999. In fact, Sintra has now set up a crushing plant with the capability to recycle the 25,000 metric tons of shingle waste available annually in Quebec.
Spac steps on the gas across the Vexin plateau

During the first half of 1999 the Spac Pipeline division laid the first two sections of a major gas artery across the Vexin plateau in southern Normandy for Gaz de France Transport, a division of the French power utility. Natural gas originating in the North Sea fields will be carried under high pressure in the 900 mm diameter steel pipeline, from the underground storage depot at Gournay-sur-Aronde to the new compression station at Moussy. A Spac subsidiary, SEC 2L Mions, took the pipeline across ten major roads (including the A16 motorway) and six railway lines, using the thrust-boring technique. Crossing the Thérain valley, a marsh-land located near Beauvais, required lowering of the water table and ballasting of the pipeline with concrete riders prefabricated by Segec Génie Civil, a Spac subsidiary. Despite appalling weather conditions, the pipeline was laid at an average speed of one kilometer per day, in 13.5 meter length tube sections, weighing in at between three and a half and five metric tons. A total of eight thousand sections were laid.

An expressway between Cotonou and Porto-Novo

With the approach of the rainy season, the 20,000 daily users of the road that links Cotonou, the capital of Benin, to Porto-Novo, its major business center, start to get concerned. The 27-kilometer stretch of road, already saturated, becomes almost impassable during June and July. As a result, the decision was taken to build a four-lane expressway (2x2) to decongest access to Cotonou, the gateway to neighboring Nigeria. Within the infrastructure program, Colas Benin was adjudicated a 14-kilometer stretch. With the exception of the transfer of main networks, the office has sole charge of the entire site. This includes 620,000 m$^2$ of clearing, 500,000 m$^3$ of excavations, 340,000 metric tons of graded recombined aggregate and 55,000 metric tons of asphalt mix. The contract also calls for 25,000 m$^3$ of concrete for the curbs, gutters, barriers and box-culverts, nearly 27,000 meters of metal guard rail, street lamps for six roundabouts and the construction of a tollgate. The site required two crushing plants to be installed at the quarry face, 160 km from the jobsite, as well as setting up of concrete and mixing plants and a prefabrication area. Over 400 people are at work, with hand-over scheduled for the end of 2000.
Colas sets a runway record at Nador airport

As part of the project to open up the northern provinces of Morocco, the Moroccan airports authority, ONDA, contracted to a grouping of companies with GTR at their head, for 150 million French francs of construction work on the new international airport, 20 km from the town of Nador. The project included a 3,000 meter runway, long enough to land a Boeing 747, two airplane parks and access roads. In five months, GTR has mobilized nearly 150 people, carried out 450,000 m³ of excavation, opened up two quarries (300,000 metric tons of rock crushed) and applied 60,000 metric tons of asphalt mix in order to hand over the site on time! The first plane arrived from Frankfurt and touched down, right on schedule, on July 1. The runway has been open to traffic ever since and work is continuing with the construction of the airport building and laying of the mains networks. All of the work will be completed during 2000.

A giant step for the Øresund Strait

From Copenhagen to Malmö is one giant step for mankind, and for Scandinavians as well. The Øresund Strait may only be 16 km across, but until now both Danes and Swedes have had to take the ferry-boat. The new link, with its bridges and tunnel, as of next year will be helping trade between the two countries flourish.

The second great European undersea project after the Channel Tunnel, the Øresund Strait project has nonetheless required 8 years of preliminary studies. A total of €2.9 billion will be allocated to one of the largest European jobsites ever.

Cars and trains will travel through 4 km of tunnels, 8 km of bridges and across an artificial island built in shallow waters to avoid the construction of a cable suspension bridge. This was considered necessary because the height of the suspension bridge could constitute a risk for planes from the nearby runways of Copenhagen airport. The 55,000 metric tons of asphalt mix applied on the four-lane (2x2) highway of the road link come from the Koete site, south of Copenhagen.

The team, consisting of some twenty people, followed a training program in safety before work commenced on the tunnel and the artificial island. Trucks and cars used on the site are all fitted with catalytic exhaust converters to lower the risk of tailpipe gas pollution. Major work was scheduled to start at the beginning of September, and it will finish at the start of April. The new Copenhagen-Malmö road is scheduled to open in July 2000.
Screg Ouest and Colas Centre-Ouest are back on the rails

The Nantes tramway network continues to expand, with the extension of the first line to the west, in the direction of the Atlantis zone, and the creation of a third line, bringing the tram to the north-western part of the city. After having completed the Grenoble and Montpellier tramway construction contracts, Screg's Nantes branch has now been adjudicated sizeable tranches of the Nantes network. Screg Ouest is the principal contractor for a section of Line 3 and is also heading a grouping that is laying cobbled and paved surfaces and applying Metalflex tram surfacing. Work began in November 1998.

Currently, three quarters of the preparatory work on the tramway platforms has been carried out (excavation, multi-tube casings, illuminated signs), and 25% of the tram lines have been laid. Surfacing has been started. Work is now concentrated on the street fitting and furniture, with completion targeted for the end of May 2000.

However, Screg Ouest is not alone on this site. As it happens, Colas Centre-Ouest (the Rezé profit center) is co-contracting the infrastructure work on section 2 of Line 3. Work includes excavation, laying of multi-tube casings, minor civil engineering work, drainage, pavement thickness design and all the furniture, curbs, paving and finishing work.

This type of contract has required finely-honed organization by both subsidiaries in order to be adaptable in the face of frequent modifications to projects. It also necessitated a highly-developed feel for integrated working with the main networks and rail track contractors. The site has also required the presence of a number of totally unflappable and courteous individuals to explain things to the local residents in an attempt to placate them.
Simon Contractors is producing sand for American railroads

Sand is a plentiful industrial waste product in the state of Nebraska. Scottsbluff, a division of Simon Contractors, is transforming it into a substitute raw material. Last year, Scottsbluff finalized an agreement with the second largest railroad operator in the United States, Burlington Northern Santa Fe railroad, which uses sand for improving the adherence of locomotive wheels on the tracks and, consequently, makes braking more efficient.

Started in January 1998, negotiations came to a conclusion in March 1999 and the first load of processed sand left the Scottsbluff quarry for the BNSF depot. Today, Simon Contractors is designated as the only supplier of sand to BNSF for western Nebraska and eastern Wyoming (a land area roughly the size of Germany).

With the aim of meeting the increasing demand from BNSF, Simon Contractors has undertaken to construct a major production facility. The present infrastructures have been reconfigured to perform 10-micron screening of the sand at the rate of 70 metric tons per hour. To ensure a total seal, a filter system consisting of a centrifuge and a hydraulic air-scrubber have been installed at the outlet. There is also a new fan which should eliminate all particles that pass the 80-micron screen.

With this new production tool, the Scottsbluff plant, which already produces between 15,000 and 20,000 metric tons of asphalt mix per year, should rapidly develop its sand production. The material can also be sold locally for use in sand-blasting equipment and as green dressing on golf courses.
Wasco talent to serve Lippo Karawaci

Lippo Karawaci is a zone of fast-developing property 50 km from Jakarta. It already enjoys an excellent reputation. In the near future it will no doubt become a satellite city of the capital, featuring a shopping center, a hotel, an international school, office blocks, a hospital, a golf course, and other upmarket conveniences. Wasco put in the winning tender for the roadways of this prestige project. The company is to build several layers of pavement course, including the asphalt wearing course. The job site opened in January this year. Unfortunately, this coincided with the height of the rainy season. Not only were weather conditions difficult, but the soil raised problems, too. The Wasco teams battled bravely against the elements, but at times work could be brought to a stop for as much as three days because the road base course was still wet. For the first two months the job lagged behind schedule. But as soon as the rains were over, Wasco’s teams caught up, working relentlessly to finish the first phase of the project before its March deadline. Results were more than satisfactory, and Wasco soon found orders coming in for layers of asphalt mix and wearing courses on other jobsites in the area.

At present there are two complete trains of road-building equipment operating full-time at Lippo Karawaci. Lippo Karawaci itself is hardly recognizable. All roadways have now been laid out and surfaced. Work on the buildings themselves no longer raises problems of access to the sites. Today, after a decade of operations in Indonesia, Wasco is involved in a broad variety of surfacing jobs, providing slurry seal, cement concrete and hot mix to jobsites ranging from road maintenance jobs to construction of airports and toll highways.

Big projects for Colas Est

At Strasbourg, Colas is involved in ambitious projects for the city and its surroundings. Among these is the Human Rights building, a new streetcar line, and a by-pass highway to the south. The European Community is putting up the innovative Human Rights building. Colas holds an 11 million French franc contract to build roads and main services and only materials of the highest quality are being used. Street furniture will be high-tech. The new 12 km Line B of the municipal streetcar network will link Hoenheim in the north to Elsau in the southwest via the Esplanade university area. Colas Strasbourg and Schubel TP are to do 27 million francs’ worth of work on it. They will put in a sanitation system and lay asphalt mixes. Existing road materials will be recycled. Users will certainly appreciate this ambitious public works program, which will enhance the entire line. All local Colas expertise is being mobilized to deliver the site by Fall 2000. Lastly, in the course of the year 2000 a 4.5 km southern by-pass road is to link the RN 83 main road to the new bridge over the Rhine. This will give the Strasbourg conurbation a new international link, and also open up the southern harbor area. Screg Est is involved in the construction.
Colas is a big cheese in Beaufort

For the past two years, the town of Beaufort in the French Alps has proceeded with major infrastructure spending to improve its through road. The locally produced Beaufort cheese, considered by gourmets to be a vital ingredient in alpine-style cheese fondue, brings more and more visitors to the town on a cheese quest. The town also wished to showcase the quality of its urban planning and the way it fits beautifully into the surrounding mountainside of Savoie. Accordingly, the Colas Rhône-Alpes Albertville office has refurbished the town center using paving slabs and cobbles in granite and lucerne and has applied "old rose"-colored Colclair. A high-quality site worthy of an office that received ISO 9002 certification earlier this year.

Colgrill M innovation in Amiens

Within the framework of an Innovation Charter, in June Colas Nord Picardie proceeded with the treatment of cracks and impact reinforcement of the northeastern section of the Amiens bypass, using a new process, Colgrill M (as in metallic). The operation consists of planing down the existing asphalt by 9 cm, unrolling a metallic grill over it, leveling it with a rubber-tired roller and doweling it to the base. Prior to application of Colmat 0/6, an emulsion tack coat was applied to ensure the cohesion of the whole. 5,800 metric tons of Colbase 0/14 were then applied over an 8 cm thickness and 2,400 metric tons of Ruflex TM. Thanks to Colgrill, 30,000 m² were treated in this manner. This pilot jobsite lasted eight days and two nights.
Colas Madagascar builds shipping access in Comoros

At Mohéli, in the Indian Ocean, the third-largest island in the Federal Islamic Republic of the Comoros, Colas is building a breakwater to provide regular berthing for local shipping. The breakwater will enable dhows and landing craft to berth at will, instead of having to wait for the right tide to beach, as has hitherto been the case. A 70-meter wall is being built at the foot of the coral reef. It is composed of hollow prefabricated reinforced-concrete blocks filled with pozolanic material, piled up and crowned on its perimeter to ensure cohesion. Ranging in weight from 12 to 20 metric tons, the blocks will be topped with a concrete slab to carry traffic. The structure will be stable enough to withstand waves more than 6 meters high.

The contract is worth 27 million French francs. This covers the construction of a jetty which will cross the lagoon for 400 meters to give access to the harbor wall, the construction and layout of a 600 m² central median reservation on which the harbor facilities and equipment (sheds, harbormaster’s office, etc.) will be built, and the construction of a road linking the median to the main road.

The logistics have been worked out in Madagascar. Equipment and materials are being sailed from Madagascar to the Comoros in Colas’ vessel Kinga. Work is done from a pontoon specially designed and built by Colas Madagascar: a complete floating construction plant, equipped with a gantry to move the blocks, a genset, and compressors. It is manned 12 hours per day by a crew of 20. Thanks to its 4 winches driven by electric and internal combustion motors, divers are able to lower the massive blocks into place with extraordinary precision. More than 200 people will be working on this project, which will take 15 months to complete.
Starring role for Colas in South Pacific

With a contract to construct a freeway to the east of Nouméa, the New Caledonia subsidiary has strengthened its position in the South Pacific. We take a trip over the French territory from south to north, and visit a few outlying islands.
"I'm really delighted that at last there is interest in what is going on in the New Caledonia Territory," states Alain Devillers. It is five a.m., and just as he has every morning for the past 20 years, Alain opens the doors of the Colas Group Nouméa subsidiary, starts up the air-conditioning and looks through the day's news. Alain is not the only person to be so frank, nor is he the only one to speak up. Both Georges Doudoude, the warehouse manager, and Jean-Luc Chenu, who is in charge of plant and equipment, echo his feelings. A fair number of the men who form part of the current team are also the custodians of its past.

Back in 1979 when the company known as SNRP - the Société Nouvelle René Prandy as it was named after its owner - was set up, they were already on the payroll. One drove a truck, another ran a grader, and all of them were vital elements in the Caledonian network, known since 1990 as Colas. With a major contract to perform work on the East Freeway, the company has taken on a new dimension. The contract is not only a boost for business that benefits both the men and the company, it is also a boon for the people who live along the Mont-Doré – Nouméa axis.

The construction of the two-lane Freeway that bypasses the urban zone by the coast is intended to link the eastern outskirts of the capital with the southern province. Using some clever financial expertise (see box) based on a system of concessions, Colas and contractor Jean Lefebvre have joined forces for this project. Over 5.5 kilometers in
length, the Eastern Freeway is built partly over-land and partly over the sea. The stretch built over water consists of a kilometer-and-a-half long causeway protected by rip-rap on the side facing land. "This was the most specialized part of the work," emphasizes Didier Fiat, the manager of the operation. "We had to advance according to a rigidly defined series of phases, with progress dictated by the results of the analyses by the local public works laboratory. Any deviation from the schedule for the embankment construction operations could have resulted in bumping."

**KEEPING ABOVE WATER**

The work consisted of a number of filling-in phases, which began with a nailing operation using broken rip-rap to perforate the silt, then back-filling up to a depth of between four and six meters using blast furnace slag, a steel-industry by-product from the processing of nickel. "Blast furnace slag is an ideal material in more than one way," explains Frédéric Vigouroux. "Slag is free industrial waste, with the specific characteristic that it hardens in water. In all we have planned that over 200,000 m³ of foundation materials will be laid on this causeway stretch, most of which will come from the excavation work on the overland section of the road." As well as the causeway section, the jobsite also includes the construction of four structures that will allow cross traffic to flow and drainage of the waters of the lagoon, along with a Shell service station, two interchanges and also the refurbishment of an entire drainage network. As the new infrastructure is a toll road (100 Pacific francs, equivalent to 5.50 French francs, per trip), it will also have a tollgate, currently under construction.

When the work is finished, the road, scheduled to open to traffic during the first quarter of 2000, will allow 20,000 users a day to travel the 5.5 km distance in just a few minutes, shaving an hour off their daily journey. In the future, the road may well be widened to 2x2 lanes to take account of an increase in traffic. What is more, the project forms part of a vast road program, already under study, to extend the Eastern free-
The concession

The FRF 138 million cost of the project was long an obstacle to its construction. The infrastructure has finally seen the light of day thanks to clever financial packaging. To achieve this, two companies were set up: VDE Express, the concessionary company to which the southern province granted a concession to build and operate the structure for 35 years, and Invest Routes, a company formed between Colas and Jean Lefebvre, which holds almost all VDE Express shares.

Invest Routes finances the equity of the concessionary company, mainly through a loan negotiated with a local banking consortium. After five years, SAV Express, a subsidiary of the southern province, will purchase all VDE Express shares, so enabling it to repay the loan.

In addition to the causeway, the contract involves the construction of two interchanges.

Way as far as its west-bound equivalent, the western freeway and make connections with the Nouméa roads via a series of vast roundabouts.

Although the island of Grande Terre has a total area of 19,000 square kilometers, over half of the population – some 130,000 inhabitants – are concentrated in the Grand-Nouméa urban area. Consequently, a familiar local sight at rush hour is lines of cars all gathering at the approach to the city center. In addition, the town, built on a hilly peninsula that juts into the lagoon, consists of many promontories and coves, which considerably lengthen transportation time.

All of the employees in the subsidiary are proud to be taking part in such a major contract. "Keeping a large part of our plant in one place makes it easier to manage and repair, when necessary," explains Jean-Luc Chenu, who is in charge of plant and equipment. Kapisiri, the grader driver, agrees: "When we work on a huge jobsite we have more space and the risks are lower." Georges, the ware-
house manager, is among the many who are happy to see the Group logo emblazoned on one of the “sites of the decade”. “Today,” he says, “our company has proved, thanks to this jobsite, that it is capable of working on other types of contract. This is a terrific boost for the image of Colas in the Pacific.”

**HEADING UP NORTH**

However, New Caledonia is a land of contrasts and some of the employees who are from the northern part of the territory, are not attempting to conceal their wish to try to conquer northern markets. “Big jobsites are fine, but after a few months we miss the quiet of the bush,” says one of them. Fortunately, Jean-Claude Presti, the new profit center manager, has refrained from putting all his eggs into one basket. He is not prepared to stop at being part of a flagship contract and has...
The Freeway contract meant an upturn in business for the Group's subsidiary.

The son of a man who worked down the nickel mines, Alain dreamed of driving bulldozers from the time he was just a kid. Just as soon as he had completed his service in the Armed Forces over in France, he came back to New Caledonia and bought himself a grader. Rapidly, customers beat a path to his door and word of his skills spread. "I had the reputation of being the best driver in the Pacific," he laughs, with no hint of vanity.

In 1979, when René Prandy decided to set up the Société Nouvelle René Prandy, Alain, along with a number of his compatriots, agreed to give it a go, but only on one condition: "I insisted on taking my own grader with me into the company because I wanted to be sure I would continue to drive equipment."

Not surprisingly, after a number of years, Alain's technical expertise and determination got him promoted to the rank of site foreman, and then to site supervisor. Now aged 56, this born-and-bred Caledonian is one of the pillars of the company. He has perfect knowledge of the territory, its tribal leaders, its customs, its government and, in addition, how to drive and operate site equipment and apply products. A few rare occasions have obliged him to wear something more formal than his usual apparel of shorts and Hawaiian shirt, but there have not been many of them!

Up early, even on weekends, lazing around is not for Alain. As soon as he gets home on Saturday, he leaves the world of public works behind to help his wife with their property in the bush. In less than five years he has transformed several acres of scrub into a haven of peace, covered with fruit plantations and flowers that would be the envy of any botanical garden!
started to increase his contacts in the northern province, which is in strong need of development. "The rise of Caledonia in the next few years is connected to the development of northern infrastructures," he asserts. Nickel constitutes the island's source of mineral wealth and after having undergone considerable fluctuation over the last few years, its price now seems once again headed upwards, and a rise in price means a rise in investment.

Local official and traditional leaders from the province are full of ideas and projects that Jean-Claude is anxious to take part in and contribute his expertise. Already, the Caledonian subsidiary has set up a mobile plant in the north of the island, a tool that is vital if it is to respond to offers to tender with competitive prices. In the same way, wooden guard-rails have recently been tested on one of the northern transversal highways. This paves the way for a business requiring local raw materials and labor, which may well find outlets on this very environmentally conscious territory.

**KEEPING THE IDEAS COMING**

Jean-Claude, assisted by Jean-Luc, who is from the town of Voh, has therefore been busy making as many contacts as possible with local decision-makers, tribal heads, business people, government officials, etc. Some of these contacts extend beyond the northern province, because beyond Grande Terre and the Loyalty Islands, Colas New Caledonia is extremely interested in what is taking place on Wallis and Futuna, the Fiji islands and the Vanuatu archipelago.

In other words, outlets exist and the new team is not short of ideas for developing the company's image and its business. Colas New Caledonia may be the subsidiary of an international group but it is also a local construction company that is looking to expand its markets.
The Vatry Europort, the last monumental site of the century

Emerging in an area concentrating 75% of European GDP is the continent's first tri-modal platform: the Vatry Europort in northeastern France. This huge project is being completed in just twenty months.

On the map, the strategic position of the future Europort is clear. Vatry lies a mere two hours from Paris, three from Luxembourg, and four from Brussels. In the heart of a region close to numerous major European road junctions, it is also within easy reach of existing urban airports (14 airports in 7 countries, now handling 6 million metric tons of freight). It is a directly served by a network of main roads, and French Railways' Eastern high-speed track will soon pass through. A better location would be difficult to imagine. On the terrain, the sheer size of the 20 month-old site confirms this somewhat abstract impression. Originally a NATO base, the Vatry site was built in the 1950s, and has been disused for many years. It is now being brought back to life by the determination of local government: the Marne ✅

The Vatry site, which was formerly a NATO base, owes its existence to the tenacity of investors.


departmental authorities have invested a billion French francs in the venture.

Their initial idea was to create jobs. And jobs have indeed been created. The first industries to move on to the site have already provided more than 100 jobs, with a further 200 expected as soon as the site opens up.

A SPECTACULAR JOBSITE

The Vatry Europort covers an overall area of 8,500 hectares. To the north, an area has been set aside for commercial activities; in the southern part there will be an airport. The vast project has involved a lot of earthmoving and the construction of basic infrastructures. A control tower and airport buildings have been put up, and aerial navigation equipment installed. A freeway serves the commercial area: a 2.5-kilometer two-way boulevard, with four traffic circles. It has been designed to withstand intensive heavy truck traffic. A drainage and sanitation system has been laid out. It complies rigorously with stringent French legislation on water. Three sealed-off ponds lead into four seepage basins to catch rainwater; all surface water is run through hydrocarbon separators to ensure that pollution of all types is properly eliminated. The waste water-treatment system is based on lagooning technology, and is composed of three sealed ponds. The sewer drainage system alone has involved moving no less than 500,000 cubic meters of earth. Work has also included putting in 20 km of sheaths to carry low voltage power and telecommunication cables, and laying 30 km of piping in PVC, concrete and cast iron.

But the most spectacular part of the site is the airport. The original runway dates back to 1956, and about 1,800 meters have been retained. The runway has been extended and is now 4 km long. The only other runway of this size in use in France is that at Paris-Charles de Gaulle. "The shoulders have been surfaced with the same asphalt concrete as the runway, to prevent the planes' jet engines from blasting up chips," explains site supervisor Pascal Sibileau. "To build the pavement and the shoulders we
have recycled materials that are already on the site. The foundation of the runway is composed of materials from Vatry itself, such as the gravel known as ‘graveluche’, which we have coated with hydraulic binders. In the same way the foundation of the shoulders has been built with 0/40 grade materials produced by crushing concrete from the taxi ways and access roads of the former installations.”

**SHARING RESOURCES**

On the terrain, Screg Est has led the consortium operating under the three main Europort contracts: one for the commercial area, another for the flexible and rigid pavements (through Wegebo, a Belgian subsidiary of Screg), and a third for a number of additional jobs. The overall operation is worth 180 million French francs. As for equipment, the Group has used its usual technical plant, with flawless synergy between subsidiaries: the 1,000 metric tons per hour cement plant has been provided by Screg Grands Travaux, two TSM 25 Senior hot mix plants by Screg Est and Colas Est, a concrete mixing plant by Wegebo, and a slip form machine by BRS. “The runway has been built with two 7.5 meter long finishers, served by two Franex extractors, so that strips 15 meters wide could be laid,” recounts plant supervisor Michel Bouvier. “It took us a day to lay a 4 km strip 15 meters wide. For three days we had to lay 9,000 metric tons per day, then we took an extra day for the shoulders. So we completed the wearing course of the runway in four days.”
A few days before the end of work on the Vatry site, Jean-François Drouillot looked back: "It was the first time in the eight years I've been on this sort of job that they asked us to make asphalt mix so early on in the year. We were starting up at the end of January, so we had to deal with humidity, and to heat our materials more." This slowed down work somewhat (from 450 tons per hour under more favorable conditions to 300). Apart from this, as far as Jean-François was concerned, Vatry was just a job like any other. On the site, the Colas and Screg coating plant foremen worked together without a hitch. "Every morning we would share out the daily amount of asphalt mix between our teams," he explained. "Between 3,500 and 4,000 metric tons: if one of us had ordered too much asphalt, the other put it in his tank. And vice versa." Jean-François, now in his thirties, joined Colas at the age of twenty-two, with an industrial maintenance technical school certificate in his pocket. He had already been involved in building such major highways in France as the A 5, A 6, A 39, etc. On weekends he takes his mind off his work by mowing his lawn and trimming his hedges.
BIGGER TEAMS

Despite bad weather throughout the job, deadlines never proved a problem. The only difficulty encountered was in following up the topographical surveys: a bigger team of surveyors had to be taken on. “Given the sheer size of the project – compared with a normal jobsite it is gigantic – everything is multiplied by four or five, even the number of errors,” admits site manager Bernard Thomassey. “To my knowledge, Vatry is the biggest multi-disciplinary job currently under way in France.”

A total of 150 people were mobilized for the project. It was handed over in Summer 1999. The economic life of the Marne Department, which has prior to now been rather traditional (textile manufacture, metallurgy, automobile and aircraft equipment manufacturing) will be revolutionized. When a logistical hub of this order opens up, a range of new activities comes into being: transit agents, logisticians, forwarding agents, freight agents, stock pickers, etc. Not to speak of activities specifically linked to international trade, such as customs services, upkeep, maintenance. When the first plane takes off, this part of Europe will become even more attractive. The site will be officially inaugurated on December 21, 1999. Operation will start a week or two later, in January 2000.

PORTRAIT

Michel Bouvier, Screg asphalt mix plant supervisor – and motor racing aficionado

At the age of 51, plant supervisor Michel Bouvier reckons that in the course of his career he must have handled some two million metric tons of asphalt mix. It was thirty years ago that he went into civil engineering. He worked on the Nantua tunnel and the Channel tunnel. He is used to cooperating with other teams. “It depends on exactly who I’m dealing with,” Michel confides knowingly. “What the two of us have to do is to get the job done, and get it done it as well as possible. Jean-François Drouillot, who was running the Colas coating plant, and I got along really well. Neither of us ever kept to himself. Every morning we would get together to work out what to do. We swapped tips and advice. Any time that either of us had a problem with equipment or materials the other would lend him whatever he needed. We worked together hand in hand.” So explaining much of the success of the site! The biggest enthusiasm in Michel’s life – apart from his work – is for motor sport. For ten years he raced in motocross. Today, however, he no longer rides, but watches Grand Prix races on TV whenever he gets the chance.
Colas Environnement et Recyclage cleans 15,000 tons of soil

At Amponville, a few kilometers outside Fontainebleau, Colas Environnement et Recyclage (CER) is cleaning up an old site used to dump drums of chlorophenols. The contract is the first of its kind for the subsidiary and a showcase for Novartis, the customer. Sanitation, quality, safety and communications all make this a flagship jobsite.

In the words of one of the local inhabitants, “The plum liqueur we brewed in 1963 has a lingering odor of phenol.” Indeed, that was the year that a company called La Quinoléine contracted to a haulage company to remove 700 drums of chlorophenols. However, the haulage company simply dumped the load at the first convenient stop-off, in a part of the Amponville quarry. Soon, some of the drums split open and the stench of chlorine started to spread for more than five kilometers around. At the same time, phenol-laden rainwater runoff entered the water table and contaminated the drinking-water pumping fields of a neighboring village. Word was out and the alert was sounded.

AN EXEMPLARY CONTRACT
Some years later Ciba, now a subsidiary of the Novartis group, acquired the company with which the chlorinated waste originated. Novartis decided that it would act out of principle. “There was no question of tarnishing our image as a world-class life sciences corporation, we needed to take action and shoulder the consequences of the past,” explains Jean-Frédéric Faurant, Project Manager for Novartis Agro. In order to make certain that this was the case, Novartis, a worldwide pharmaceuticals and agribusiness products giant, wished for the remedial action on the contaminated soil to be an exemplary jobsite, using innovative procedures. "For reasons of reliability, the techniques used are tried and trusted, rather than innovative. However the jobsite is unique in that is has such a concentration of leading-edge methods," emphasizes Colas Environnement et Recyclage head Henri Molleron. It was only after several months of a preparatory phase of in-depth studies and diagnostics, in particular to determine the nature of the soil, that work on the site, to be performed in its entirety by Colas Environnement et Recyclage, could actually begin.

A CONCRETE PIT, THIRTY METERS DEEP
Detailed study of the subsoil showed that earths and sands were contaminated down to a depth of 25 meters. Spie-Fondations was sub-contracted the construction of the concrete shoring with a mortar using the →
excavated materials themselves. Once this operation had been carried out, the contaminated soil was contained inside a cylinder 20 meters in diameter and 30 meters in depth, or the size of a ten story building. The concrete wall is regularly inspected to check stability.

**CLEANING 15,000 METRIC TONS OF SOIL**

At the bottom of the pit, the driver of the backhoe is sitting inside his sealed cab. The soil is dug out with the backhoe and placed in a bucket elevator which carries it by conveyor belt to the desorption unit. The unit heats the contaminated soil to a temperature of 350°C and then cools it with the process water. The soil is then left on the ground to await the results of analysis.

When the results are satisfactory, showing that the soil contains less than 100 grams of phenol per metric ton processed (0.01%) the soil is removed and stockpiled at the other end of the site, to await replacement in the pit when work on the site is completed. If the analysis is unsatisfactory the soil is returned to start the process over again. "When the process is running normally, we achieve something in the region of 27 to 40 grams per metric ton," says, with great satisfaction, Laurent Gebel de Gebhardt, who is in charge of the decontamination plant and controls. Simultaneously, a

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**PORTRAIT**

**Augusto Fernández, backhoe operator**

After first passing a stringent health-check, Augusto came to work on the Ampounville site. His assignment consists of operating the backhoe at the bottom of the pit excavating the contaminated soil. "It felt pretty strange working at the bottom of a hole, at first, but I soon got used to it," he says, unperturbed. Although, unfortunately the only view from his cab is of a concrete wall Augusto remains cheerful on the job. Hoisted up to the surface every two hours, he smiles up at the sky and enjoys his well-earned break. Secure in the knowledge that his working conditions meet tough safety standards he states confidently, "I couldn't wish for better!"

Another bonus on this job are the transceivers fitted in his cab, a system that avoids much unnecessary maneuvering. From his point of view, "it is a very special jobsite, but an interesting one. It makes a big change from laying mains services. I've learned a lot of things here in just a few months, in the areas of safety and technique." Like his colleague Ali, Augusto is also working on a major jobsite for the first time. "We are in permanent, direct contact with the site managers so we are very involved in the progress of the site," says Augusto, who is fully aware that, for once, working down a hole has put him in the spotlight!
combustion chamber incinerates the polluting agents at 1000°C for a period of two seconds and eliminates the residual gases. The “smoke” that arises from the desorption unit, in fact, is nothing more than steam. So that neighboring residents are not inconvenienced by the strong odors produced from handling the soil and the drums, a 1,600 m² airtight tent has been erected over the entire excavation area.

**CONTINUOUS MONITORING OF AIR**

Obviously, all possible precautions have been taken to protect the operators working on the site. Every 15 minutes, a computerized analysis measures the air levels of carbon monoxide, oxygen and chlorophenols from the pit and the tent floor.

If a level goes over the threshold limit, an audible and visible alarm is set off and

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The operatives wear state-of-the-art protective equipment consisting of a sealed helmet with wrap-around visor and coveralls.
the tent evacuated. The same thing occurs if exterior wind speed attains 90 kph.

In addition, the operatives are also fitted with state-of-the-art equipment consisting of sealed coveralls and a helmet with panoramic visor linked to a powered life-line delivering filtered air. Two radio transceivers inserted into the helmet allow the men to talk to each other.

All of the equipment working under the tent structure is fitted with catalytic converters or external exhausts. Smiles Gilles Renoux: "We sometimes have better quality air in here than they get on the streets of Paris!"

Gilles is in charge of all the site administration work and is a key man on the jobsite. "From my desk," he explains, "I can check the wind speed, rainfall, visitors coming and going, perform all of the paperwork and keep in touch with all of the suppliers. This is not the typical job of a site administrator, but this type of major site also gives me a chance to get closer to the field." At nightfall, Gilles leaves his bank of screens and an outside security company takes over remote monitoring of the site, aided by the site night watchman, video cameras and infra-red security beams.

HIGH-QUALITY FACILITIES

A few meters outside of the tent is a full complement of locker-rooms and showers,

PORTRAIT

Ali Moktari, desorption unit operator

Standing behind his control panel, Ali Moktari oversees the running of the plant – burner temperature, filter pressure, washing unit flow, etc. Working over the radio with the loader operator outside the tent, he gives highly detailed instructions about the quality of the treated soil. Following a week of specialized training, site supervisor Ali, from Colas Ile-de-France-Normandie’s Chaunnes-en-Brie branch, took over operation of the desorption unit. "It’s a new experience, very interesting and enriching, but totally different from what I usually do," says Ali, who is more accustomed to supervising main services jobsites. "On this site, everything is so minutely regimented that I feel as if I have swapped my journeyman status for a job as a bureaucrat!" As a result, he needs to give his legs a good stretch every evening when he emerges from the tent. Fully conscious of the weight of his responsibilities as unit operator, he also keeps them in proportion. As he says, "on a big site like this one, we are not lacking in supervisors!" A wry way of expressing the fact that on his usual supervisor assignments he has a great deal more autonomy. What will he do next? Ali is not sure, but being strongly motivated, he would like other opportunities for enriching work experience, so that he can accumulate expertise and move up within the Group.
so that every morning and evening, all those working on the site can wash from head to toe in comfort and have a complete change of work clothes. Needless to say, all the cleaning bills for the work clothes are picked up by the company.

So that the most efficient possible use is made of all of the installations, work is carried out round the clock in three shifts of six. The site operates continuously from Monday afternoon to Saturday morning. Monday morning is spent on plant maintenance.

QUALITY, SAFETY, COMMUNICATION

All of the installations are certified and inspected by independent organizations. “We were able to set up a total safety plan, thanks to a customer who listens and was receptive to all of our requirements. It took up a lot of time, but it was time very well spent,” says Henri Molleron.

Independence and openness are the watchwords. The jobsite is also open (by appointment) to the neighboring inhabitants who may, if they wish, take a guided tour of the installation. As Jean-Frédéric Faurant likes to tell people, “Here, we say what we do, and we do what we say.”

On hand-over, in the autumn of 1999, this huge contract will have taken over two years from the first excavation work to the soil cleanup and landscaping of the site. The entire contract represents a total cost of 55 million French francs, around 200,000 million Francs the square meter – a figure that gives pause for reflection. However, according to Henri Molleron, president of CER, although this type of jobsite is still somewhat experimental today, it will become commonplace in the years to come.
Creating new products, honing new methods, responding to new markets, organizing people, breaking new ground... What's changing at Colas around the world.

“Imagine a silent road”: a campaign that has gone with a bang

This spring a new campaign was launched to promote noise-free surfacing, with radio commercials and advertisements in virtually all French regional dailies. The aim was to raise public awareness of the fact that road surfaces exist which can cut down traffic noise appreciably. At the same time, stress was laid on the Group's very real contribution to the battle against noise. Colas is sincerely interested in the well-being of road users and residents.

"Imagine a silent road..." "Must we really put up with road noise?" The advertising message takes the form of a press article, providing simple technical information on the effectiveness of noise-free surfacing. Colas' regional subsidiaries, each identified by a signature and a local-rate phone number, are given pride of place, to strengthen neighborhood bonding between the Group establishments, users, local residents, and local authorities. Ten stations with nation-wide audiences broadcast the Colas radio commercial.

The decision to re-launch the promotion campaign was taken on the strength of a survey made by the CSA polling institute for Colas' communication and marketing department. Sample groups of road users who live near major routes were interviewed. The poll brought out a number of trends. Tests are expected to give credibility to the concept of noise-free surfaces, and to confirm that in fact noise levels can be cut down. It is felt that the public should be kept informed of the Group's scientific research into ways of enhancing user comfort, and that local authorities should be helped to explain what infrastructure spending is needed to reduce noise.

The results of the campaign have been measured in terms of audience reaction. However, it is sales which will really show how effective the campaign has been. In France by the end of June, the area already laid with noise-free surfacing, together with the area for which surfacing was on order, came to more than 1,240,000 m². To judge by the number of Colsoft sites in the United Kingdom and Microville sites in Belgium, these same trends are now also showing up in international business.
CREATION

An emulsion plant in Lebanon

Colas Lebanon is a company formed by Colas SA with Lebanese partners. Located in the industrial zone of Nahr El Mott, near Beirut, it operates an road emulsion production plant with capacity of 5 metric tons/hour. These emulsions are used for the following applications:
- tack coats;
- single and double surface dressings;
- cold micro asphalt (slurry seal);
- cold asphalt for storage.

The plant started up operations on January 15, 1999.

MODERNIZATION

The road to the future begins with Barrett

With the aim of preparing for a better future and taking greater advantage of a buoyant market, US subsidiary Barrett Paving Materials Inc. has boosted the capacity of its asphalt concrete production line at Ann Arbor, Michigan. The current plant (300 metric tons/hour of asphalt concrete) has been replaced by a state-of-the-art triple hopper installation, with capacity of 600 metric tons/hour, making the site the largest asphalt production unit in the Colas Group. It was decided to transform the plant because of the high level of demand over a very limited period of application. Another decisive factor was the opportunity to reduce the plant's impact on the environment, both in terms of pollution and of noise.

The project was launched in November 1998, with building approval granted in March of this year. The installation was completed early in May, the work principally having been carried out by employees of Barrett. Production got under way on May 19, 1999, with daily and weekly production records broken as soon as June. This substantial investment is undoubtedly set to strengthen Barrett's position in this highly strategic zone.
Prevention pays dividends

People are becoming more safety-conscious in the Colas Group. The personalized measures taken in all the Group subsidiaries in France and abroad have turned out to be effective, and safety standards are clearly improving. In France in 1998, no fewer than 86 entities reported that they had had no accident entailing sick leave. In 1991 only one had achieved this feat.

The Health-Safety-Environment France trophy
For the second year running, Colas Nord Picardie has won the HSE France trophy, awarded to the subsidiary with the best safety index (frequency of accidents multiplied by degree of gravity). This year Colas Nord Picardie scored 2.12 (against 3.52 last year). The average for France is 17.64 (against 23.36 in 1997, on a comparable accounting basis).

Better results than average for our sector

Road Safety trophy
With 42 accidents entailing liability for a fleet of 376 vehicles, Sreg Nord Picardie won the 1998 Group Road Safety trophy. The trophy was handed over to the Chief Executive of the company on June 15, as part of the tenth anniversary celebrations of ADASAR, the association for the development of safety measures in the Greater Dunkirk area. Yves Bonduelle, a member of the governmental Traffic and Road Safety Directorate, was present at the ceremony. The trophy represents a Moebius circle, named after its inventor, the German mathematician and astronomer Ferdinand August Moebius, which is a single-sided surface obtained by twisting a ribbon and joining its ends. A competition for the trophy is to be held every year. We trust that the 1999 results will reflect still further real progress in the Group as a whole.

International safety policy
The Group’s HSE committee held its first meeting in Denmark. The meeting was attended by the officers in charge of safety in Colas’ French subsidiaries and some of its other subsidiaries. The delegates made a survey of work in progress. Concluding the talks, Hervé Garnier stressed the benefit which the Group as a whole derives from its international subsidiaries: “Sharing expertise between all the people involved in our safety network brings us a virtually inexhaustible supply of new ideas. This is a formidable source of progress. It leads to emulation within the Group and constantly stimulates it.”

WINNERS OF THE SAFETY TROPHY FRANCE
- Socoman Procatra (Sreg Est)
- Carrière Neveux (Colas Ile-de-France Normandie)
- Lorient (Sacer Atlantique)
- Châtelherault (Colas Centre-Ouest)
- Dunkirk (Sreg Nord Picardie)
- Vannes (Sacer Atlantique)
**United States**

**Sully-Miller wins Safety Achievement Award**

The Sully-Miller Contracting Company, a Colas subsidiary in California, has been awarded the highly prestigious Albert H. Atwood Safety Achievement Award. The Southern California Contractors Association (SCCA) makes the award every year, recognizing a company or a person for exceptional performance in the fields of health and safety. Jack Blakely, the current SCCA chairperson, handed the prize to Randy Franklin, Safety and Risks Manager at Sully-Miller, who accepted it on behalf of all the employees of the company. In recent years, Sully-Miller's low accident rate earned it the Safety Excellence Award for three years in a row. Today the company is being rewarded for the further progress it has recorded in the province of health and safety.

**Canada**

**Terus wins first international safety trophy**

Last May, at a special meeting of management held at Grande Prairie in the western Canadian province of Alberta, Terus was selected for the first award of the international safety trophy. The trophy rewarded the performance recorded by the Colas subsidiary during the year 1998, when it reported zero accidents. Wayne Patterson, Chief Executive of Terus, and David Wiebe, safety manager, accepted the trophy on behalf of all the employees of the western Canadian company. During summer the trophy, a crystal sculpture in the form of a woodpecker, will make brief calls at all the company's operational sites in western Canada, before returning to Paris later in the year.

**Achievements**

- **Somaro**: safety training for all managers
- **Spac**: HSE committee set up
- **SES**: volunteer firemen in an industrial plant
- **Sacer Paris Nord-Est**: light adjustable trench boxes for use in urban job sites
- **Barrett Paving**: appointment of regional safety officers
- **Screg Belgium**: VCA (Safety) certification of Wegebo, Euromac and Leuwen Asfalt
- **Colas Danmark**: environmental management system, including health and safety, certified in November 1998
The ‘Compagnons de la Route’ at Ouarzazate on June 4, 5, and 6, 1999

On June 4, 5, and 6, the ‘Compagnons de la Route’ held their first convention, at Ouarzazate, gateway to the Moroccan desert. By bringing together Colas’ Losanges d’Or, Sacer’s Top Niveaux, Scrg’s Rubans Verts and Smac’s Compagnons de l’Arche, Group Chief Executive Alain Dupont, was paying tribute to professionals who have proved their deep attachment to their trade.

All in all, 600 Compagnons attended the gathering. In the company of chief executives and human resources managers, they spent three exhilarating days in the south of the High Atlas range. Five planes, from Paris, Lyon, Marseille, and Bordeaux, landed at Ouarzazate airport on the morning of June 4. The excited Compagnons moved into the four hotels that had been booked for them. The afternoon was devoted to sunbathing beside the swimming pool and visiting the Taourit kasbah and souks, and after that to the opening session of the convention in the Ouarzazate Conference Hall.

Christian Laplace, Vice President of the Order, addressed the meeting, explaining how much it meant to him to be a ‘Compagnon de la Route’. Group human resources director Hervé Garnier reminded the audience of the fundamental values to which the Order is attached. Philippe Decarnin, manager of Colas Morocco, described the activities of Colas in Morocco. Then Michel Chappat, head of Research and Development, spoke about the new technologies and products being developed by

ROUTES number 7
group subsidiaries. Finally, Alain Dupont stressed the specific characteristics of the Colas Group, whose power lies in its burgeoning human resources. What does it mean to be a Compagnon de la Route? “To be a Compagnon means that the chief executive of the subsidiary to which you belong actually knows you personally. It also means that every person in your work environment also knows you, acknowledges your human value, and realizes that you will enable the Group to progress still further.” And roads? “Roads facilitate person-to-person communication, and enhance opportunities for life and freedom. Roads means that one can come and go freely. They give one the freedom to start up, to converse, and also to discover... Roads are a basic need: Man needs roads just as he needs food and water.”

The evening ended with dinner, accompanied by traditional Moroccan music and dancers.

On the road: into the Moroccan desert
The next day 140 off-road vehicles left Ouarzazate, driving along the Draa valley to the Agdz kasbah, set in superb palm groves. From here the caravan took a stone-strewn track into the wilds. Against the majestic background of the Atlas Mountains, a succession of palm groves and adobe villages formed a series of unforgettable sights. Then came the silent immensity of the desert.

Finally, at nightfall, the Compagnons reached their bivouac: 150 tents set up in the middle of the desert, lit only by the wavering glow of kerosene lamps. And so to bed? Well, not exactly. Throughout the night, yelling cavalry charged through the camp firing antique guns, dancing girls swirled to music, camels swayed out into the starry night, hard bargains were driven at the souk, and chests and arms tattooed in henna for good luck...

At dawn, after little sleep, but a substantial breakfast, the caravan moved on to the dunes of the El Yaoudi erg, before taking the road to Ouarzazate airport. Lack of sleep, sandstorms and heat did not affect the Compagnons’ high spirits. They would take home kaleidoscopic memories, images of a multitude of meetings and discoveries. Three days of high adventure that none of them will forget.
In the United States... Delta, Reeves and IA, Colas Inc. subsidiaries, have recently acquired three businesses: Clinton Construction, in Missouri, Knox River, in Georgia, and West Penn Asphalt, in Pennsylvania. In line with the Group’s international development strategy, these operations will generate revenues of roughly 60 million US dollars for a complete year, the companies producing 1.4 million metric tons of aggregates, 800,000 metric tons of asphalt and 125,000 m³ of readymix concrete. The Colas Group is now active in 23 states in the US. It expects to record revenues of more than US$ 1 billion in North America in 1999.

... In France, the Colas Group has finalized the purchase of five rock quarries from the Lafarge group, in Lorraine and Franche-Comté, in eastern France. The operation strengthens its positions in road building materials and in aggregates. The sites’ annual production totals 2.5 million metric tons, and their reserves are assessed at 53 million metric tons, the equivalent of 20 years of operation. Three of the quarries supply top-grade igneous aggregates used for ballast on the TGV high-speed railroad and for road maintenance. Strategically, the Group’s desire to develop in the road materials and aggregates sectors is becoming increasingly important on an international level.
DIARY DATES

The French Mayors' Fair
From November 23 to 25, at the Porte de Versailles exhibition center in Paris. Sacer will be taking part.

Construction industry film festival
October 13 and 14. Colas, Sacer and Screg will present films, particularly one showing projects carried out by various Group subsidiaries with emulsion.

CONVENTION

180 workshop foremen to meet at the Futuroscope
A congress for 180 workshop foremen from Colas, Screg, Sacer, Somaro, Spac and Smac will be held at the Futuroscope in Poitiers, central France, on October 15. Four topics are on the agenda: safety, information technology, the environment and the development of synergy in the Group.

TECHNIQUE

Ouvrard renovates pipelines without digging trenches
In Eragny-sur-Oise, in the northern outskirts of Paris, a 700 meter-long pipeline of 300 mm diameter has been renovated by Ouvrard, a subsidiary of Sacer Paris Nord Est. The project was carried out in fourteen days, as opposed to the two or three months needed with a traditional process.

First performed late in 1997, the technique of renovating pipeworks without trenches is increasingly being used in urban zones. Being able to perform underground works without digging up the road surface both reduces inconvenience to local residents and enables projects to be completed more rapidly. After a TV camera has been run through the length of the pipe in a diagnostic phase, all the preparatory operations are performed by a multifunctional robot. A flexible sheath is then inserted into the pipe with a winch. It is inflated with compressed air to fit the walls of the pipe, then hardened by polymerization thanks to an automated train of UV lamps. After this operation, a milling robot restores the lateral connections. Once another TV camera has performed a final verification, the pipe is ready to go into service.

Developed by Ouvrard in conjunction with a German company, this process has already been used in a number of towns in the Paris region and in the North and West of France. In the context of new water legislation, the process should be in demand, both in France and in other countries.

CONGRESS

Colas attends the World Road Congress in Kuala Lumpur
Early next month, Colas will be present at the 21st World Road Congress. This major industry event, which is being held in Kuala Lumpur from October 3 to 9, will offer an opportunity for SES, Somaro, Spac and SIR to demonstrate the scope of their activities in a large Colas booth, and to present the Group’s know-how on international markets. The congress is organized by PIARC (the World Road Association), which is the world’s oldest association in the roads and road building sector. Founded in 1909, the PIARC boasts 93 governments and 2,000 other organizations from over 129 countries among its members. They all share the objective of promoting international cooperation and encouraging the elaboration of road transport policy.
Barracks rehabilitated in the heart of Lyon

Before: aging, run-down barracks

The site is about the size of a large hospital. But instead of patients, military trucks come to it for attention. The La Mouche barracks are a kind of vast garage for the maintenance of military vehicles: trucks, buses, armored vehicles and other mobile equipment belonging to the Lyon command. Located in the southeastern part of the city, near the Gerland stadium, the site consists of workshops, a command post, storage areas and hangars, spread over an area of more than 180,000 m². Over 300 people work there.

Built in the 1880s, the barracks have since served a number of different purposes without ever really being developed. As the years rolled by, the site took on a derelict air. It ended up standing out in sharp contrast to the surrounding urban area, which has now been modernized and redeveloped. It was no longer functional: the roads giving access to the buildings were no longer suited to their purpose. To get from one facility to another, which could be several hundred yards away, vehicles had to lurch along wandering dirt tracks – when there were any tracks at all!
A major job site for Sacer Sud-Est's Lyon office

In 1997, the French Ministry of Defense awarded the Sacer office in Lyon a contract to construct 25,000 m² of roads, a substantial volume of work. The jobsite opened in 1998 with a surprise: “When excavation started, we came on a network of tunnels and underground chambers,” recounts Perig Desquesnes, head of the engineering department at the Lyon office. “They must have been used as shelters during World War II. There was almost a whole little town down there, lying hidden under the ground... We had to demolish a lot of it, of course, and drain it, replacing unsound parts with new materials.” But the story does not end there. Under the backfill, the team also had to dismantle an entire rail network which had been used to transport arms, equipment and ammunition. They then built roads properly suited to heavy vehicles, put in parking lots, storage areas and a 1,000-meter streetlight network, and at the same time laid out almost 10,000 m² of gardens, a multipurpose sports field and a parade ground which entailed the construction of a 470 m² supporting wall to be covered in vegetation.

All in all the job took eight months to complete. Today, the renovated La Mouche barracks are hardly recognizable. They will soon be even less recognizable when the new buildings are put up!

A renovation program that gathered speed in 1998

Realizing that the site required redevelopment, the Defense Ministry launched a renovation program in the mid-1980s. A long-term schedule was adopted in order to spread out the investment required. The objective of the operation was to transform the timeworn, dysfunctional barracks into a bright modern site equipped with the appropriate infrastructures, operating efficiently and offering personnel the best possible working and living conditions.

The program kicked off with the rehabilitation of a number of buildings. In 1998 it picked up speed when a proper traffic network was put in, with functional parking and storage areas. The reception building was renovated, a restaurant was built, and a sports field laid out for the personnel. These facilities were surrounded by a series of gardens. In the space of a few months, the La Mouche barracks were swept from the 19th century into the 21st. As trucks moved smoothly along roads surfaced with the latest asphalt mixes, serving all points of the site, its rutted dirt roads now seemed to belong to the remote past. As an integral part of the economic and social environment of France's third-largest city, the barracks are due to become a showcase of the French Army.
Getting to know SMAC

The Bibliothèque de France, the Zénith at Toulouse, the refurbishment of the roofs of the Dassault plant and tomorrow, the Cœur Défense program – the number of major contracts that SMAC has performed continues to grow. A company more than a hundred years young which has just joined the Colas Group.
Back in 1884, Gaston Alexandre, owner of an asphalt rock mine, set up the Société Civile des Mines de Bitumen et d’Asphalte. He convinced the prestigious Ponts et Chaussées civil engineering institute that mastic asphalt was suitable for paving roads, sidewalks and ports. Over the years, the company, now called SMAC (Société des Mines et Asphalte du Centre), diversified, particularly with the acquisition of Ferem, and became specialized in waterproofing, insulation, covering, acoustic treatment, urban road building, etc. SMAC became a subsidiary of Scree in 1958, then of the Bouygues Group in 1986. SMAC joined the Colas Group at the start of this year. French market leader, SMAC is now a finishing contractor and includes several companies which are specialists on local markets. Although major prestige contracts give the company a marvelous showcase, the core business of SMAC consists of a multitude of secondary, local and often unremarkable sites carried out by small teams. As the company’s managers say, “You only get to hear about whether a building is waterproof, when it isn’t!”

In 1998, the 40 profit centers that SMAC has in France carried out 12,000 contracts, of which 5,300 were for less than 20,000 French francs. In all, 10,000 contracts were for amounts of under 200,000 French francs.

**No technical equivalent**

At the heart of SMAC’s business lies mastic asphalt (see box). The company produces annually nearly 100,000 metric tons of mastic asphalt from 13 plants in the major French geographical regions. The low production of these facilities is explained by the drop in the use of waterproofing materials made from mastic asphalt in favor of new technology membranes, either bituminous or synthetic. But mastic asphalt has no technical equivalent. Waterproofing carried out with mastic asphalt can last as long as 30 years, as compared with 15 years for a traditional industrial process. Mastic asphalt can be used to cover any type of concrete base (parking lot, flat roof, structures and most types of ground), and is used in road-building applications.

Given its high temperature — between 200°C and 400°C — it is a product that is easy to apply, both for maintenance work and first application, on condition that the boundaries of the job are defined precisely and the necessary quantities calculated correctly. Because mastic asphalt is liquid, it will find its way into all of the interstices of the base it is applied to, sealing off all leaks.

One to three hours after it has been laid, it is possible to open the stretch that
Mastic asphalt through the ages

Mastic asphalt is limestone or siliceous rock impregnated with natural bitumen. This is the same substance that was extracted from the Dead Sea in antiquity, giving it the name of Lake Asphaltite. The builders of ancient Egypt, like those who constructed Babylon and Assyria, already made use of "Judean bitumen" for grouting paving and terraces. In the first part of the 19th century, Paris received its first mastic asphalt sidewalks. The material had so many advantages – it was noise-reducing, waterproof, stable, acid-proof, hard-wearing and easy to apply – that it rapidly took over in all the major cities of Europe. In the 20th century it has been used to waterproof structures like the Carrousel bridge in Paris and covers the platforms of the city's Metro system, along with that of Marseille. Unlike asphalt mix, mastic asphalt can be transported by truck over long distances.

> has been covered to traffic. Although the product is hardly new, it still has a long future ahead of it. "Mastic asphalt application sites can be enormous or just a few square meters in area," explains Christian Gérardin, head of the La Rochelle sector. "We know how to work in a very craftsman-like manner, making up just a few tons of mastic asphalt ourselves in an old mixer to waterproof the deck of the tugboats over a weekend or to line the cold chamber of a fruit grower. But we also know how to take part on a vast jobsite performing repair work on engineering structures."

New materials

The company, which was originally focused on waterproofing, has expanded its core business, following the acquisition of Ferem, a company specialized in industrial construction work. Constructing industrial premises, cladding facades, demolishing roofs and erecting metal pan roofs today all form part of the expertise of SMAC Acieroid. These new business lines require input from in-house engineering offices working upstream on each contract to calculate all the components that will be required. Each component is custom-prefabricated and assembled on site. "It's hard in this business to keep track of all the other trades, partic-
ularly the construction and timberwork contractors,” says Jean-Yves Leneindre, head of the Angoulême profit center.

**Local community**

“Although the Group’s road construction companies require large-scale industrial facilities or a fleet of heavy plant and site vehicles, SMAC doesn’t,” states Robert Lefèvre, who was appointed chief executive of SMAC early this year. “Our business consists basically of applying products and membranes manufactured by our subsidiary Axter (see box). But SMAC also sells added value, expertise and ideas.” Each of the forty profit centers located throughout the whole of France constitutes a small entity all by itself. The customer portfolios are developed according to the aspirations and contacts of the manager of each agency. The manager is in fact the head of a small independent business whose time is spent in contact with customers. “Even more than in the roads industry, people play an absolutely decisive role,” emphasizes Lefèvre.

An example of this is in Bordeaux, where, after carrying out numerous small repair and maintenance contracts for a Dassault aviation plant, the local profit center recently won the contract to coordinate the refurbishment of all the roofs of the plant. “We suggested appropriate technical solutions, but before we did that, we earned the trust of the customer by being there when he had a problem,” explains Michel Ducrocq, head of the waterproofing sector. This is confirmed by Jacques Rubio, human resources manager in the West, Southwest Region: “The commercial angle and being on the spot are the key factors—I’d say they are a permanent challenge. We sometimes have to stay in the same town for years in order to set up a proper contact network. For this reason, when we recruit, we insist on the notion of customer service as much as the need for technical competence.”

The other side of the coin to this sales policy is having to combine keeping sales personnel locally based while providing opportunities for career advancement.

**Strong competition**

The role of sales teams is even more vital given the state of the competition, which is both strong and not easily discernible. In the administrative Department of the Alpes-Maritimes, there are over 80 waterproofing companies vying with each other for contracts. In the city of Bordeaux, there are forty of them. You could say that to become a waterproofing contractor, all you need is a bottle of gas and a blowtorch. So each com-
pany must differentiate itself and make the most of its assets or else propose innovative solutions, to be out front in the race for contracts. "In the Bordeaux region, we are in competition with self-employed craftsmen as much as with major contractors. This shows just how important being close to the customer really is," emphasizes Michel Ducrocq.

"In Angoulême, we differentiate ourselves by seeking out complex contracts which require strong involvement of our engineering office," says Jean-Yves Leneindre. In La Rochelle, according to Christian Gérardin, his opposite number, it is customer service that is in the forefront: "We must be able to respond to all customers in the quickest possible turnaround time. This gives us a competitive edge." In the Paris area, where some hundred competing companies are all joined in commercial battle, Christophe Bessonnat, head of the Rubéod subsidiary, emphasizes the necessity of proposing alternative technical solutions as the way to meet customer needs. In Lorraine, Alain Massironi, manager of SMAC Lorraine, is anxious to create customer loyalty. He says: "I attach enormous importance to keeping to our word once it is given. I teach all my employees not to commit themselves on any jobs they do not completely master. If a customer entrusts his work to SMAC, it is because he is guaranteed of its successful completion."

Whether the work involves waterproofing, cladding or roof raising, it is the expertise of the craftsmen, the care taken with the execution of the job and, in addition, SMAC'S impressive references which give the company an edge over the competition. "Most of our craftsmen have been with us for ten to fifteen years," says Jean-Yves Leneindre. "A good operator must not only understand the intentions of the architect, but have good taste, strongly developed professionalism and a liking for doing a

A FLAGSHIP SITE

Toulouse at the Zénith

Floor-space of 11,000 square meters, an under-ceiling height of 25 meters, a steel frame weighing in at 1,000 metric tons and maximum capacity of 9,000 seats are all to be found in the Zénith concert venue in Toulouse, which opened to the public this spring. The SMAC Toulouse steel frame division handled over the magnificent building on schedule, after 10 months of work. By the end of the jobsite, 43 people were working on it in two eight-hour shifts, some of them drafted in from other South West profit centers. The work was carried out under optimum conditions of safety and quality, 12,000 aluminum panels, each one unique and all numbered, were placed on the exterior facade and roof of the structure, which is more than 100 meters in length. The teams worked 25 meters up in the air on elevator cradles to install seven-meter long aluminum cassette weighing 40 kg. In addition to the external work, the steel frame division also applied the exterior acoustic covering. This major project was supervised by a civil engineer in charge of quality control and procedure. The jobsite is destined to become a model of its kind for projects in the future.
good job, to ensure that the result is in line with the architect’s intentions.” The company’s customers definitely appreciate the skill of the craftsmen and the quality of the finish since for working on new structures, detail is vital.

Training schemes
The company has the same fine reputation for its waterproofing work. To achieve this, at Orcement, in the Paris area, SMAC has spearheaded the creation of an official CAP French skill qualification, together with a basic BP qualification, in waterproofing. It has also set up a mastic asphalt skills qualification to train young craftsmen by means of an alternate education scheme run by the AFPA, an adult training organization, at Veigné in the Touraine area. Both of these training schemes put the emphasis on the importance of job site preparation, involving investigating the site itself, knowing the materials, the risks involved in the waterproofing professions, etc.

“Training and the multi-skilled profile of our craftsmen is an advantage, which our competitors envy,” points out Alain Areddy, head of the steelwork center in Toulouse. Christian Gérardin is strongly in favor of on-the-job training by more experienced workers:

“Thanks to this type of transfer of know-how, trainee craftsmen very rapidly become committed to the efficient running not only of jobsites, but of the company as well.”

Risks of the business
It may be this level of training and commitment that has enabled the La Rochelle work center to recently celebrate its fourth straight year without a workplace accident. In terms of safety, profit center managers all admit there is a lot of work to do. Since his arrival at the head of SMAC, Robert Lefèvre has been working hard to raise accident prevention awareness among profit center managers. “We sub-contract a great deal and often work with

Considerable safety equipment is installed before the start of each jobsite.
other trades where people do not have our level of awareness," explains Christophe Bessonat. To avoid these risks, fine mesh nets are erected as protection. "There's no problem when we set up our safety equipment, but quite often another trade comes along and moves the equipment for some reason," says Alain Aressy, whose profit center has just completed work on the Zénith concert venue in Toulouse.

In terms of safety, little steps make a difference. "My men are responsible for the work they perform and every day we talk about safety problems," confirms Christian Gérardin. The greatest risks on maintenance jobs concern fire. "No matter how hard we try to find out, we often cannot get information on the composition of the existing materials. It is unfortunately very easy to start a fire with a blowtorch," warns Michel.

**KEY INFORMATION**

- **4 domains:**
  - structural waterproofing
  - urban roads, mastic asphalt
  - roofing, cladding
  - building waterproofing
- **1998 revenues:**
  - 2 billion French francs
- **3 geographical regions**
- **40 profit centers**
- **2,050 employees**
- **13 mastic asphalt plants**

**SUBSIDIARIES**

**Axter, the industrial division of SMAC**

**Waterproofing business**

Axter, a subsidiary of SMAC, manufactures and markets products for roofing contractors, including waterproofing membranes and skylights. Axter exports 40% of its production to roughly fifty countries in Europe, Africa, the Middle East and the Far East. "That represents more than 2,000 trucks and containers a year," notes Peter Fleischmann, head of Axter's waterproofing department. In 1998, 24 million m² of bituminous membranes, or 75,000 metric tons, were produced at the company's two plants, located in southern Normandy and the North of France. "SMAC is our largest French customer, but we also sell to contractors, materials wholesalers and do-it-yourself super-markets." As well as manufacturing waterproofing products, Axter also runs a training center for applying them. Axter has high expectations of its closer dealings with Colas. "Our businesses are similar, and synergies should form in industrial production, research and international marketing," reflects Fleischmann. Confident in the outcome of their future cooperation, the subsidiary's export managers have already made contact with their counterparts at Colas.

**Skylights business**

Skydôme, a subsidiary of Axter, makes and markets industrial skylights and fume vent systems for smoke evacuation in a fire. Its production unit, in the North of France, manufactures 35,000 items per year. Its customer base includes waterproofing and roofing contractors (45%), material wholesalers (30%) and fire protection specialists (25%). The company exports 10% of its production, to the Iberian peninsula and Belgium. The nature of Skydôme's business should see it developing industrial synergies with other industrial companies in the Colas Group, such as SES and Porte, which make use of similar raw materials. Essemès, another subsidiary of Axter, installs and maintains smoke extraction equipment.

Axter's 3 plants and 300 employees supply SMAC with products it uses for industrial roofing.
Ducrocq. He works ceaselessly to increase his teams' safety awareness and steps up preparations before each jobsite. For the refurbishment of the Dassault plant roofs, blow-torches were replaced by powerful 4000 W "hair-dryers" generating enough heat to melt PVC so workshops could continue to operate under the roofs being repaired.

**Decentralization policy**

As is the case for other Group companies, SMAC has to respond to its private and public sector customers with the least possible delay. To be even more responsive in the face of competition, the subsidiary has affirmed its decentralization policy by adopting a corporate organization in three major regional area divisions. Profit center managers have reacted favorably to this greater commitment at local level. "Regional organization means improved running of each profit center in terms of contracts, teams and administration," notes Alain Massironi. At the commercial level synergies will arise with other Colas Group subsidiaries to boost existing local trade, increase market share and manufacture certain waterproofing products. For the time being, the profit center managers are discovering Colas culture, which is close to the field. They hope the Group will bring them a new sense of challenge, and maybe help them with international expansion.
What exactly is ISO?
ISO labels are international standards. Very stringent rules attest to the internal quality of working methods employed by companies throughout the world, in every sector of industry.

**ISO 9001 and 9002:** the 9002 standard covers 19 aspects of the company's operations, and deals with production. ISO 9001 contains a supplementary clause covering the quality of design.

**ISO 14001:** a standard which imposes that none of the company's activities causes any harm to the environment.
or ISO 14001 – 178 Colas entities around the world
One is a site manager at Sreg Grands Travaux, another is a rake operative at CLGB Routes, a third manages the Colas branch office in Bucharest, Romania, yet another is an excavator operator at Sacer Atlantique… Every day, all of these people give it all they’ve got to make Colas succeed.
Inventive mechanics in the workshop and on site

Michel Bordier, workshop foreman, SPAC

A sedentary life? No such thing for Michel Bordier! For the thirty years he’s been working for SPAC, first as a mechanic, then as site foreman, and finally as workshop foreman, he has never stopped moving about the subterranean France of pipelines. Before each job site opens, he girds his team of greasers, mechanics, and welders to get the equipment ready. When the site moves into its active phase of laying piping, Michel is always on the go, moving back and forth between one problem and the next. Finally, when the pipeline has been laid, he takes his teams back to the workshop to refurbish the machines.

It is here that the other part of his job starts. He takes particular pleasure in it. For Michel is a creative mechanic. “We build our own machines. We find used parts, and adapt them to our needs.” To do this, and to keep as close as possible to needs that are real, Michel keeps close to the people who have to use the equipment he builds. “We have to listen to them all the time, and bear every one of their remarks in mind.” The foreman has to take the initiative and motivate his teams. But he must also find as much time as he can to train young recruits: “There’s nothing to beat on-the-job training!” On weekends when he gets home, Michel enjoys the rest. He clears his mind by working in the garden...

Of stones and men

José Beltran, quarry manager, Mayotte

In the South of France, in Gabon, in South America, in Martinique, and now on the Indian Ocean island of Mayotte, José has spent 20 years in the Group’s quarries. “In all these years, I must have crushed about 10,000,000 m³ tons of rock into aggregate, sand, and gravel!” But as one quarry is much the same as another, what José likes best each time he’s sent to a new post is discovering a new society, a new culture, a new mentality. “Each transfer is a new challenge, a fresh start. New methods have to be worked out and adapted to local personnel and bring out the best in everyone.” Heading a quarry means juggling day in, day out not only with rocks, but also with factors such as quality, maintenance, machines, electricity and welding. And also, above all, safety. “When you’ve got two or three tons of explosive under your feet, you find you’re pumping adrenaline pretty often!” Explosives, however, are not the only danger. José teaches his teams that in a quarry there are lots of hazards, and that one has to be careful all the time. All sorts of accidents are possible, and carrying the proper safety equipment is essential if you are to avoid them. José does his job with the passionate commitment of someone who has a true vocation. At 52, a dreamy look still comes into his eyes at the prospect of travel and yet another fresh start. He is still set on hopping a plane to distant rocks and new horizons.
Raking up is hard to do...

**Sébastien Gullotto, rake operative, CLGB Routes**

When the nineteen-year-old Sébastien Gullotto started work as an operative, he did not know that raking was no simple matter. Nor did he realize that three years later he would be handling the rake with discernment and dexterity, just as his elders do. Setting asphalt mix by hand is an art. You have to form a surface that is absolutely even, without bumps or hollows, so that water will flow off it properly. It takes an expert to get this right, to have an eye sufficiently keen to judge exactly the right incline and thickness of mix before the roller compacts it. "On roads there are a lot of square meters to cover, so the finisher machine does this. A sidewalk is different: it has to be set by hand. It takes quite a bit of skill to give the mix just the right slant of about 2%," Sébastien explains. "I set my mix in a single stroke, then I check it with my spirit-level. I’ve learned a lot seeing other people work. Particularly one of my colleagues: he’s 58 and he’s always done this job. I did also take an advanced training course, though." To gain recognition by his peers and by the site foremen as a fully-fledged raking operative, Sébastien will have to develop his expertise still further. He is improving his technique day by day. "It’s better to learn when it’s hot, in summer. The asphalt mix leaves the plant at 160° C and gets to the site at 140° C. This makes it all easier.”

Good advice. It takes about an hour to rake the equivalent of 100 m² of sidewalk. This entails setting something like 10 metric tons of mix.

"On roads there are lots of square meters to cover, so the finisher does this. A sidewalk takes quite a bit of skill..."

Entrepreneur, above all else

**Emmanuel Quesson, manager, Colas Romania**

After a few years working with Scrg in Romania, Emmanuel took over the lead of the Colas branch office in Bucharest, heading a workforce of about 100 people. This made him project manager in the joint venture linking Colas to a local partner to carry out two repair contracts on a hundred kilometers of road. "Our specialty is rehabilitating the road network," he explains. "We broaden the existing roads from 8.5 to 13 meters, we coat them with asphalt mix, and reprofile them. All of this has to be done, as the Romanian roads are not really appropriate for the type of traffic we have today." In this particular market niche, Colas comes up against both local competitors and international rivals, with among them Italian and Austrian companies. There are a lot of jobsites, and work days are a good deal longer than in France. "Here, we have the men at work from 5.30 a.m. to 8 p.m., including Saturdays.” His free time is cut down to virtually nothing. "I get some rest only when I can go home to my family," Emmanuel admits. Nonetheless, exhausting though his work may be, his international vocation grows stronger by the day.
Being a woman and a site manager

Fabienne Bertrand, site manager, Screg Grands Travaux

Fabienne joined the Group 11 years ago, after graduating as a technology engineer. Later, after working in the Nancy laboratory and in the Screg Eastern region, she moved to the Major Contracts division as a site manager. Energetic, keen on sport, and firmly convinced of the value of teamwork, Fabienne had gone into civil engineering so that she would be working more on the site than in the office. She enjoys dealing with people. “For a woman, it’s easier to get messages across informally, not only inside the company, but also outside it, to the customers. On the other hand, you have to give up quite a bit of your private life, because you have to move about so much.”

On the whole, however, gender is less important than being competent and making oneself available, especially in her particular job. “It’s a job that takes a lot of time and a lot of energy. But from one assignment to the next, you build up your experience of job sites, of people, of techniques, and of materials.”

Today, at 36, Fabienne still does not know whether in years to come she will be looking for a more sedentary lifestyle. Of one thing, however, she is quite certain: “I set myself objectives when I joined Screg. I’ve reached all of them! The Group is developing. The project manager’s job is developing, too. As to the future, I’m confident.”

For love of the Rif

Jérôme Bellemin, works engineer, Colas Morocco

Once upon a time (not all that long ago) there was a promising young engineer who had just graduated from a public works engineering school in Paris. Like other budding engineers, he would dream of far-off countries and heroic deeds: straddling the oceans with bridges, piercing mountains with tunnels, capturing entire continents in great networks of roads. His first job took him out to Africa, on the Ivory Coast. Today it has taken him to Morocco, to the romantic region known as the Rif. He is in charge of the job site at Nador airport, perfecting his skills as works engineer with GTR. Nador lies on the shores of the Mediterranean, 150 km west of the Algerian border.

“It’s natural to go to another country when you start out as a civil engineer. Foreign lands give promise of freedom, and also of responsibilities,” he explains. “Apart from the technical side of my job, in which of course I’m deeply interested, the most stimulating side of this sort of work is the organizing: managing one’s workforce, and coping with unfamiliar factors in new countries.” At Nador, for example, the job has exceptionally tight deadlines. Jérôme leads a group of four companies involved in the construction work. The pressure is intense. “We’re at it every single day, except during religious holidays, when the workers go home to celebrate.” Happily, for him too there are sometimes breaks: in September, Jérôme is going to get married. He will forget about Colas and about Morocco, despite all its landscapes and jobsites – for a time.
Handcrafting banks and dikes

José Condé, excavator operator, Pau branch, Sacer Atlantique

Down South in the Pyrenees, according to José Condé, an excavator is known simply as a "shovel". This must be trustworthy information: José has been driving an excavator for 28 years, for Sacer Atlantique. He started "shoveling" the very first day he set foot in a public works site, at the age of 19. "Since then, the equipment has changed quite a bit, especially as far as comfort and efficiency are concerned", he tells us. His big specialty is watercourses. For years he has been building up a reputation as "sculptor" of river and canal banks, laying with expert precision blocks of stone hewn from neighboring quarries. "There are only two of us who can do this sort of thing down here in these parts", he explains, with a hint of pride in his voice. "It can be pretty tricky. You have to choose the exact rock to put into each position, fitting it in with the rocks you've already piled up, almost as if you were using a grade line. I've also built a lot of 'thresholds', as we call them down here in the Pyrenees: the big dikes we put across our 'gaves' (i.e. mountain streams). Each one of them can take up to 60,000 metric tons of rock." Thanks to "shovelers" like José, the environment is preserved, reducing the risk of flooding.

There are only two of us who can sculpt riverbanks down here in these parts.

100% nature: river, game...

Roger Lepointe, site foreman, Colas Est

For five years Roger Lepointe worked as a butcher. When an industrial park began to emerge a few miles from his shop, he could not resist the call. There was promise of work in the wide open spaces. He put away his cleaver, and took a job as laborer. Now, 29 years later, he is site foreman with Colas Est at Reims. His specialty is the maintenance of rivers. "In 1974 the local authorities gave us the job of cleaning out the Vesle River. We have to remove all the mud discharged into it by the rainwater drainage network, and also to see to the woods and trees on its banks. And also, of course, the vegetation in the river itself." It is a lengthy task, but he finds it extremely interesting. He sometimes comes under conflicting pressures from differing interested parties: not just the municipal authorities, but also local residents and environmentalists. Each group wants sincerely to protect the environment, but without losing sight of its own interests. Their views do not necessarily coincide. "But to do this job, you've just got above all to really love nature," Roger confides, undismayed. "Anyway, you're out there in the open five or six months a year." Roger never tires of this. When his job leaves him a few hours of free time he goes out to hunt: a time-honored way of renewing one's strength.
Love of a job well done

Sigit Yuwono, site manager, Wasco, Indonesia

Sigit Yuwono’s career took off in 1976, as soon as he graduated as hydraulic construction engineer from Solo State University. He designed water treatment plant, worked out specifications for reservoirs, and supervised jobsites. He was also involved in the construction of a university auditorium and the design of five ferry terminals and an airport: highly complex engineering assignments. Civil engineering design is his strong point. Until 1996, however, when at the age of 38 he joined Wasco as site manager, he had little experience in road building. Nevertheless he gave a brilliant demonstration of his competence on his very first assignment: work on the container terminal for the harbor of Tanjung Priok, the largest port in Indonesia. Showing talent also as a leader of teams, he carried the 66,000 m² site to completion two full months ahead of time. At Wasco, he is now holding down three jobs: as site manager, general foreman and head of the asphalt mix plant, where his task is to improve output. He has ambitions. “What I’d really like is to take part in a major project, using a lot of equipment. A highway, for example. And to get it done successfully.” Wasco, as he sees it, has great prospects. Though small, the company is flourishing. It is emerging as one of the two main producers of asphalt mix in Indonesia. Thanks to efficient management and high motivation, Wasco has constantly improved its performance, and did so even during the 1998 crisis.

Always available for everybody

Alain Massironi, profit center manager, SMAC Lorraine

Alain Massironi is an engineer. He joined SMAC in 1979 in the Lyon region. A few months later he was sent to Nancy, where he has stayed since. In 1984 he took over management of Tibé Est, a subsidiary which surfaces building exteriors, and later moved to Zillhardt Staub, a waterproofing and industrial roofing company. Subsequently, he was put in charge of the entire Lorraine region. Alain acknowledges that for a long time the construction industry has attracted him. But what he is most interested in is organization. "Responding to challenges, listening to what people have to say, assigning the right tasks to the right people, seeing to it that different personalities fit in with one another to form a team and pull together instead of pulling things apart: that’s what I do every day". From his base in Nancy he regularly visits all four departments in his region. Calling at sites and offices, he pays attention to everyone. Nothing escapes this entrepreneur’s attention. He is always close to operations in the field, close to his customers, and close to his teams. When SMAC became part of Colas, it had no effect on his daily life. “Colas is like SMAC. It’s a group with a similar culture. We’re all people who keep close to the terrain. There’s no reason why it shouldn’t work!”
Jean-Michel Wilmotte, an interior designer for the city
Jean-Michel Wilmotte’s unconventional career has earned him international recognition as an architect. From furniture designing, he moved into interior design, and subsequently into the design of urban space treated as an “interior”. He works in France and other countries.

**During the 1990s you developed the concept of “urban interior design”. What exactly do you mean by this?**

Well, in the first place I think of the city as a home that is shared by its inhabitants. It’s a house in which there is furniture. In every city there’s a concentration of urban furniture, light and vegetation. These form the living quarters of the population just as a house does, except that there is a difference in scale: far more people live there. The streets form the rooms of the house, and the building facades its walls. Squares and crossroads act as thresholds. When one looks at cities like this, one no longer perceives their space as an accumulation of discordant places. Their unity is revealed, and they can be arranged as an interior designer arranges a house, harmonizing the different spaces.

**Since 1996 you have been working on the Orleans streetcar network. Why did you go into urban architecture?**

I started off by designing street furniture. Then mayors and municipal authorities started asking me to look into the layout of squares and city centers. In most cases these were old spaces, often historical monuments. From one thing to the next, I came to deal with larger and larger spaces, until I undertook the urban layout of an entire streetcar line: the first line of the new Orleans network. It’s 18 km long. It passes through very different sorts of spaces, ranging from peri-urban areas to the historic city center. But the Orleans streetcar network is only part of a program aimed at upgrading urban space as a whole, to enhance the overall quality of life in the city. This led us to the problem of traffic. What I’m trying to do is to redistribute space, giving cars a smaller share of it.

**As an urban architect, you would like to give city dwellers a better environment to live in. How do you think road infrastructures should be incorporated into the “urban interior decor”?**

In general, road infrastructures take up too much of the space available in cities. That does not mean that they are completely out of place there, but that we should think again about their place. Today cities are facing a serious noise problem. Admittedly noise is also generated by a lot of other things. Cities have always been noisy. But cars produce more noise than anything else because of the friction of their wheels on the surface of the road. I know that at Colas you are working on these problems, that you have come up with surfaces that absorb noise, and that they are being used. These products will come to play an extremely important part in the well-being of city dwellers. Research in this field should certainly be pursued. Today we are trying to re-appropriate space and to enhance its quality. We are trying, for example, to use less black. There is a whole range of colored asphalt mixes, and of techniques that can bring different light effects to road surfaces, and even make them sparkle. These innovations interest us: they are capable of “ennobling” the product.

**You work not only in France, but also in other countries, such as Portugal. Is French architecture a good export product?**

We have a lot of projects going in Korea, in particular the interior design of the new Seoul airport. It’s remarkable that despite the Asian crisis, the Koreans are still keen to work with Europeans. Ten years ago we also did a lot of work in Japan. The problem we come up against is the investment entailed by projects of this sort. But there’s a lot of foreign demand, and the quality of French architecture is widely recognized. When we work outside France, we go about it the same way as we do in France. We try to use local materials and to adapt to the local culture.
A building reflects the company it houses, says Pierre Riboulet

After designing head offices of Colas subsidiaries, the Laboratory at Magny, and the extension to the Colas head office in Boulogne, just outside Paris, Pierre Riboulet has become, so to speak, the Group's own architect. He considers the development of his art.

After designing the Group's central laboratory, and head offices for Colas Île-de-France Normandie and Colas Centre-Ouest, you are now working on the new laboratory at Magny, and on extensions to Speig and to Echangeur, the Group head office at Boulogne. Do these buildings have any common characteristics?

Yes, they certainly do, despite the fact that they are very different from one another, in shape, and in the sites they occupy. Office buildings are a difficult exercise. The architect has to create places and spaces, which not only have personality, but also enable the people who use them to develop freely. I would like my designs to do this. To my mind, the head offices of Colas Centre-Ouest and Colas Île-de-France Normandie are not just ordinary impersonal buildings. The same will be said, I hope, of Echangeur at Boulogne. In each case, the architect has to grasp the particular nature of the site with which he is dealing, and also that of the people who will be occupying the building. Laboratories, for example, have a scientific side to them: they are workplaces, and they must be designed in such a way as to enable fruitful relationships to be

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set up within them – relationships between the research workers and their working space. This space should be vast and flowing, setting as few constraints as possible. Another example: I always pay close attention to natural lighting and the movement of the sun. It helps to create the feeling that people inside it and outside it will have for a building.

**What are the major features of the new Colas head office?**

It's a difficult site, and it has a long history. The new building has to be continuous with the existing head office (they will be linked by a footbridge), and it has to open out in terraces on to a public park. There will be a 120-seat auditorium, meeting rooms and offices. I'd like the building to be fine-boned, light and transparent, in strong contrast to the massive architecture of the surrounding Point du Jour area. Transparency, to my mind, goes with Colas' image, as it is perceived both from inside and out.

**Would you say that the architecture of the building is the reflection of the image of the company, which occupies it?**

Companies today need to show themselves to the public in the most transparent possible way. This idea is now basic to both architectural and urban composition. The building is a metaphor, standing for the personality of the company. A well-built, durable building, properly maintained, will reflect a similar character in the company occupying it.

**What direction do you think architecture is moving in today?**

Undeniably, there is a trend at present towards concentration, in both companies and capital. In the field of architecture, this concentration of power results in buildings that are getting bigger, taller, and increasingly massive. This can be seen at La Défense. I have my reservations about this trend. These colossal edifices are totally opaque. They seem to embody the very image of secrecy. It's difficult to see how people could ever blossom in an environment of that sort. Then too, these structures assert themselves with such force that they disrupt the urban balance around them. Fortunately, some companies are more reasonable, and their head offices are different. They ask architects to create office buildings that are beautiful, open to the outside world, agreeable, user-friendly, and reasonable in height. Colas is a company of this sort. It is able to put up buildings that go against the prevailing trend. But today there are also hospitals, libraries and museums that have wonderfully different types of space. In the case of public buildings, research into new forms and different spaces is particularly important. Architecture should have a real effect on social life.

**You used to teach at the Ponts et Chaussées engineering school in Paris. What did that experience bring to you?**

It gave me fifteen years of contact with young people: an enriching experience, for both teacher and, I trust, students. I wrote a theoretical course on urban planning. It enabled me to distance myself to some extent from my everyday work as an architect. During my years as a teacher, I was struck by the liveliness and curiosity of my young pupils, by their familiarity with productive methods, but also by their absence of culture. That whole dimension of architecture and art was new to them. But they took it to heart, and eventually produced work of very high quality indeed.

**Academy of Architecture Gold Medalist**

Pierre Riboulet graduated in architecture and also holds a Ph.D. In 1988, while he was Professor at the Ecole Nationale des Ponts et Chaussées in Paris, the French Academy of Architecture awarded him its Gold Medal for his work as a whole. Subsequently he was also awarded the National Prize for Housing. In 1992 he was appointed to the Boards of the French Architectural Institute and the Le Corbusier Foundation. He has designed many buildings, ranging from the Museum of Prehistory on the famous site of Solutré to the Air France head office at Charles de Gaulle airport.
**SAILING**

**Colas Ireland passes the Scrag Challenge**
For the fourteenth Scrag Challenge, held in May this year, a new category was introduced, the Road Builders’ Cup, won by Sarrazy (Colas SO), followed by Devaux (Colas IDF) and Colas Midi-Méditerranée. The best-placed Group company in the overall standings was Spac.

The starting-point for this year’s yacht regatta was the port of Concarneau, on France’s Brittany coast, with some 65 boats and more than 500 crews members taking to the sea. For the first time this year, crews representing Irish, English and Scottish subsidiaries competed in the Challenge.

One man unable to resist the invitation to take part was John Killeen, managing director of Colas Ireland, who is no stranger to international competition, both in business and in leisure, on land and at sea. “I have been sailing for years, and have taken part in many yacht races in Ireland and Scotland,” says Killeen, “but this was the first time we had been invited to participate in the Scrag Challenge. We only just had enough time to prepare.”

With John Killeen at the helm, the yacht Chemoran was manned by seven hardened sailors from different sites in Ireland, who had never sailed together before. “It was a high-level race,” acknowledges Killeen, “but although the competition is the reason we were all there, it was certainly the atmosphere on board that made the event such a rich experience. In sailing, the effort is collective, as opposed to other sports. A regatta is a wonderful opportunity for learning to get to know other people better.”

Friendships were formed with other crews, too, adds Killeen. “The majority of participants were French, because the event was organized by France. But navigational codes are international, and we all understood each other perfectly well. I hope that in the future there will be more nationalities involved, which will make it an even more interesting regatta.”

By strengthening relationships between participants from many countries, I believe this kind of event can help to improve international communication between subsidiaries, which is a major benefit for our business.”

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**GOLF**

**Sintra gets it straight down the middle**
June 12 saw Sintra hold its 19th annual golf tournament in Quebec’s Central Region. This year, the event attracted more than 200 employees and their partners. 190 people played a friendly round of golf, while another group took the opportunity to visit one of the host region’s jobsites. A dinner and dance were a pleasant way to bring the tournament to a close. The tournament plays an important role for Sintra as a unifying event allowing colleagues to mix and mingle in a relaxing environment, moving from venue to venue to enable participants to discover different provinces and so that volunteers to organize it can be recruited from each region.
Acknowledgements

SOPHIE SADELER, SOPHIE BIENFAIT,
TRACEY HOFHEINZ, BRUNO DE LAMERIE,
PATRICK DARME DRU, DOMINIQUE BILLON,
JACK BERTHOLET, ELISABETH LAMBERT,
CLAUDINE FOUCAUT, HÉLÈNE LACHENAL,
SERGE CAVASINO, KARIM HAMDAN,
FRÉDÉRIC ROUSSEL, JEAN VIDAL, PIERRE DORCHIES,
FRANÇOIS CHAIGNON, PHILIPPE BRISSONNEAU,
VINCENT ROUBINET, ANDRÉE DE RIDDER,
RÉMI TOURNIAIRE, JUAN CANALS, PHILIPPE ESNAULT,
THIERRY POIROT, MAURICE QUEHON,
VIRGINIE VAILLANT, MARIE-PIERRE GIVAUDIN,
SABINE STIEVENARD, PERRIG DESQUESSES,
CHRISTOPHE DA POIAN, MICHEL CLOTTIER,
HENNING KAAS, NORMAND BEDARD, DENIS PÉRIER,
SYLVAIN COURTOIS, MICHEL IMBERT.
My visual world is a world of action and pleasure which intrigues viewers and calls on them to enter into my personal vision. Rapid but well-controlled strokes make my colors electric, vibrant. My pictures are just as much bathed in light as in shadow. The world I create is made of electricity, of energy, of shimmering.

Tom Christopher has exhibited at many galleries, including:

Thomas R. Reynolds, San Francisco.


Lee Solar Gallery, Morristown.
Jansen-Perez Gallery, San Antonio.