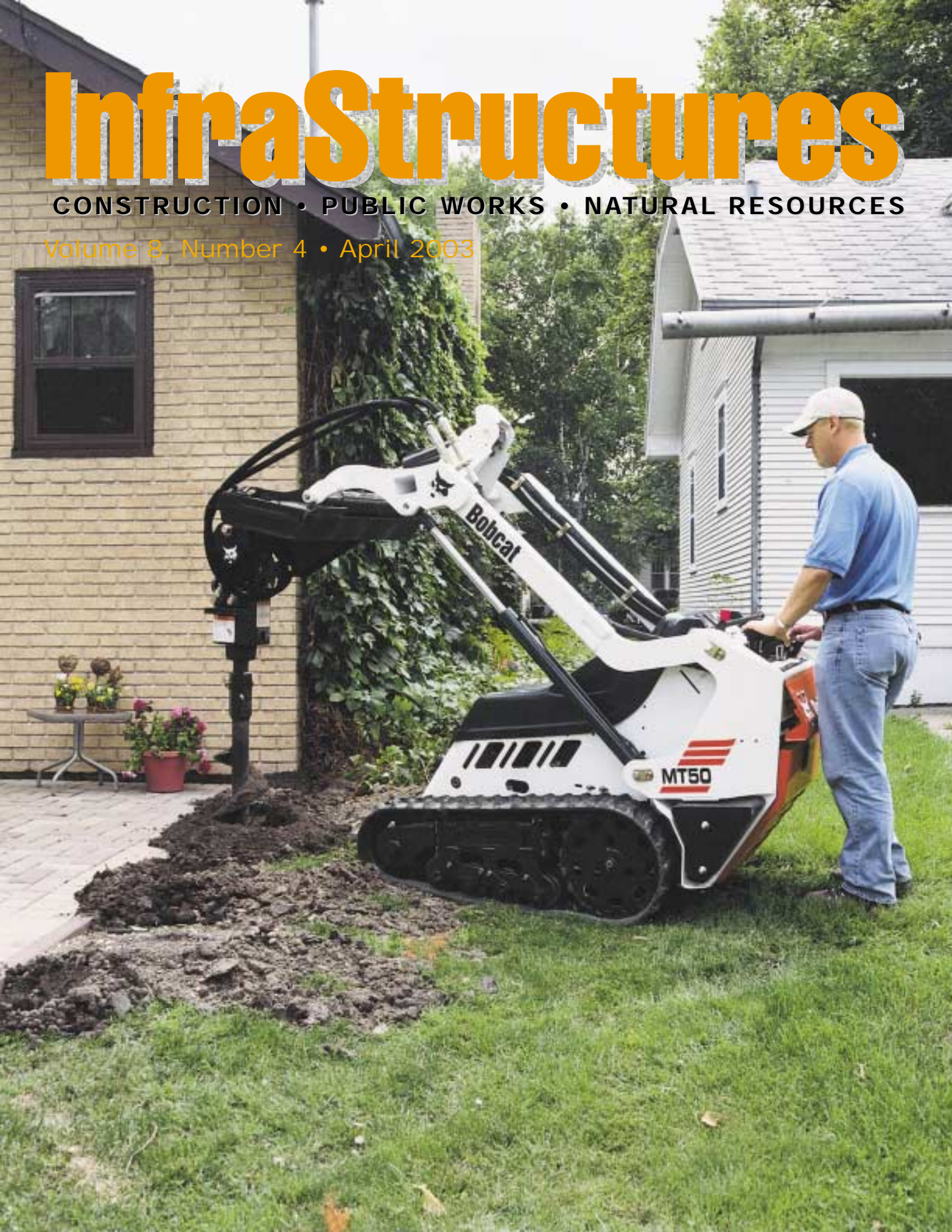


InfraStructures

CONSTRUCTION • PUBLIC WORKS • NATURAL RESOURCES

Volume 8, Number 4 • April 2003





LONDON



- Quality -
- Integrity -
- Service -
- Innovation -

The Professional's Choice

1-800-713-0150

Volume 8 Number 4
April 2003

ÉDITOR / PUBLISHER
Jean-François Villard

ADVERTISING
MONTREAL
André Charlebois

QUEBEC City
Gilbert Marquis
(418) 651-1176

TELEPHONE
(514) 233-1295
(514) 598-5752

FAX
(514) 528-9932

POSTAL ADDRESS
PO Box 366 Station Delorimier
Montreal (Quebec) H2H 2N7

STREET ADDRESS
4330 St-Hubert
Montreal (Quebec) H2J 2W7

E-MAIL
editor@infrastructures.com

INTERNET
www.infrastructures.com

This electronic version of InfraStructures is made available for the sole purpose of giving our English speaking readers a taste of the original printed version of the magazine.

We will try to publish as much of the editorial content of the printed version as it is possible given the technical limitations.

Welcome to InfraStructures

Until recently, InfraStructures has been read mainly by French speaking users of heavy machinery.

Over the last seven years, InfraStructures has become a leader in its field. First by becoming the only magazine covering all aspects of the industry published in French in Canada. Then by being the first to publish all its editorial content on the web, and also by being the only construction magazine, published in French, having a significant readership outside the Province of Quebec.

For many years, we have received requests for an English version of InfraStructures. Technical limitations, and the lack of advertising revenue have prevented us from publishing such a magazine in print. Now, with the extent of the use of Internet by professionals, we feel that the time has come for a portable digital file (.pdf) version of InfraStructures in English.

While the content of the English version differs slightly from the original, most of the important news will be published in English. In the near future, more and more of the content of the original will be translated into English.

With over 500 visitors per day on average, spending over 13 minutes per visit, the website of InfraStructures is one of the most important sites of this kind. More than two thirds of the visitors come from outside Canada. With the English version of the magazine available on the web, visitors from outside will find it easier to enjoy the magazine.

Hoping to hear your comments,



 (514) 387-6466 1-800-461-1979 Accessoire Outillage Limitée www.aolamtl.com	SALES & RENTALS Air Compressors from 100 to 1800 CFM Integrated Drills 	 
--	--	--

Cover page :

InfraStructures readers are used to see heavy machinery on the front cover. This time, we show a new kind of equipment that is used in a growing number of applications where space is limited, prohibiting the use of conventional machinery.

In the News...

Verge Care and Roadside Maintenance at Intermat 2003

Intermat 2003 will take place from 13th to 17th May 2003 in Paris Nord Villepinte, Exhibition Centre, and the road sector will be the central theme.

Besides the traditional road building exhibitors, new companies will enrich the Fair's coverage,

specifically in the field of road maintenance, as these actors required an important forum in 2003.

Intermat 2003 will accommodate for the first time in the heart of hall 4, an area representing verge care and roadside maintenance. This area will bring together 13 companies presenting their equipment dedicated to maintenance of the road network whilst offering best security for users.

Furthermore, this area will illustrate the close cooperation between manufacturers of equipment and of carriers, which will co-steer this area.

Winter road maintenance, Arvel, Acométis, Assaloni, Europe Service, Mercedes-Benz, Sico Métal, Snowtec et Villeton will present their equipment and materials conceived for clearing roads (mobile spreaders, brine stations, snowploughs, v-type snowploughs, snowblowers, etc) with a growing desire to meet user requirements for control, measuring and ergonomics.

On-board electronics, which have contributed towards major technical progress in handling snow, will be largely represented.

Roadside maintenance, equipment (mowing and brush cutting) will be exhibited by Norem, Rousseau, S.M.A., and fitted on tractors of Reform Werke France, Renault Agriculture, and Valtra Tracteurs France, also present for the first time.

This area will be the showcase for French know-how, widely renowned in the field of roadside maintenance.

France is indeed the leading European market in this sector, due to planners' constant aesthetic research in view of enhancing the quality of landscape. Departmental councils in particular, consider their roadways and roadsides as a true communication vector, and the upcoming decentralization will certainly accentuate this phenomenon.

This favourable context has enabled French technical leadership to emerge, and manufacturers have become the driving force behind technical development, particularly for European standardization with for example the TC337 standard.

Lastly, dedicating an area to these sectors is also an opportunity to highlight a relatively little-known profession exposed to the risks inherent to working on roads, and to present possible career opportunities to the younger Interimat visitors.

Source: Interimat

Aecon to Build US \$25 Million Casino in Washington State

Aecon Group Inc. announced that its Buildings division in Washington State has been awarded a US \$24.8 million contract by the Suquamish Tribe's Port Madison Enterprises to build their permanent casino and parking garage.

The 93,600 sq. ft. Clearwater Casino will replace the tribe's temporary casino facility in Suquamish, Washington, also built by Aecon in 1995.

The permanent casino will have between 600-750 gaming machines, 2 bars, 2 food service areas and a bingo and conference center. Designed by Bergman, Walls & Associates, Ltd.,

A New Bobcat on the Prowl



Bobcat.

MATTHEWS

Equipment Ltd

New Bobcat «Backhoe»

5 models available
from **\$29,000**

Financing available
from **0%**

Act now, reserve your 2003 model...

(514) **354-8891**
(888)

9300 Edison St Montreal QC H1J 1T1



Wheel Loaders, Track Loaders, Hydraulic Excavators, Telescopic Lift Trucks
Attachments for all makes and models

the casino and 268,000 sq. ft. parking garage are due for completion in July 2003.

«The Clearwater Casino is the latest of several casino projects carried out by Aecon Buildings Inc. in the Northwestern United States,» said John M. Beck, Chairman and CEO, Aecon Group Inc. «These contracts are indicative of Aecon's expertise in the construction of entertainment infrastructure. They also reinforce the ongoing relationship Aecon has established with Native American businesses to help meet their construction and infrastructure development needs.»

Based in Lynnwood, Washington, Aecon Buildings Inc. is a wholly-owned subsidiary of Aecon Group Inc. of Toronto, serving the Western United States as a part of Aecon's Buildings division.

Aecon Group Inc. is Canada's largest publicly traded construction and infrastructure development company. Aecon and its subsidiaries provide services to private and public sector clients throughout Canada and internationally.

Source: Aecon Group Inc.

Alouette Has Signed a Carbon Supply Agreement with SGL Carbon Group

Aluminerie Alouette Inc. has signed a three-year carbon supply agreement with the SGL Carbon Group in Germany for US\$18,500,000. Under the terms of the Agreement, Aluminerie Alouette and SGL Carbon Group will cooperate in efforts to develop improved carbon products for the aluminum industry through the end of 2005.

Mr. Michel Gagnon, Alouette's Vice-President of Finance, said: «The SGL Carbon Group has invested significant resources to strengthen the supplier relationship with Alouette. We look forward to continued efforts to develop improved carbon products utilizing Alouette's internationally recognized operational expertise.»

Aluminerie Alouette is a consortium made up of Alcan (40%), Austria Metall (20%), Marubeni (6.67%), Norsk Hydro (20%) and Quebec's Société générale de financement (13.33%). Aluminerie Alouette launched a \$1.4 billion expansion project which will enable it to annually produce 550,000 tonnes as soon as 2006.

Source: Aluminerie Alouette Inc.

American Forklift Scales Announces the Debut of an Onboard Scale for Forklifts and Wheel Loaders

Accurate Weighing Systems, Inc. introduced «Weigh-On-The-Way» a low-cost, general purpose onboard scale and weighing system which can improve forklift operating efficiency. The new onboard-scale will be marketed by American Forklift Scales, a wholly-owned division of

Accurate Weighing Systems, Inc.

«Electronic onboard vehicle scales for forklifts typically have often been difficult to install or confusing for a driver to operate,» said Robert Bushong, President of Accurate Weighing Systems, Inc. «The «Weigh-On-The-Way» scale and weighing system makes warehouse and loading weighing functions easy, reliable and inexpensive.»

The AccuLoad onboard-scales offer the benefits of reduced operating costs and more efficient

operations by providing a means to quickly and efficiently load to capacity, yet avoid overloads, fines and delays.

AccuLoad Onboard-Scales incorporate solid-state load sensors to detect the weight on the loading arms of lift trucks or forks of forklifts. The weight information is converted and processed by a microcomputer for the use of the driver/operator or transmission to the fleet management center.

American Forklift Scales' Onboard-Weighing Systems improve the total management picture

YANMAR

Hydraulic Quick Coupler

- ¥ Attachment Changes Made Easily From The Cab
- ¥ Fits Most Manufacturers Attachments



True Zero Tail Swing with ViO Series



VICTAS ViO Crawler Technology Advanced Stability

The offset track system offers more stability without increasing track width



We Beat The Competition With

- ¥ True Zero Tail Swing
- ¥ Hydraulic Quick Coupler
- ¥ Patented Off-Set Track Design
- ¥ Super Comfort Cab

Super Mini B08-3



Variable Undercarriage



ViO15 ViO20 ViO27 ViO35 ViO40 ViO50 ViO75



YANMAR

YANMAR

CONSTRUCTION EQUIPMENT DEPT.
951 Corporate Grove Drive
Buffalo Grove IL 60089-4508, U.S.A.
TEL: 847/541-1900 FAX: 847/541-2161
WEBSITE: www.yanmar.com

YANMAR-YOUR BEST PARTNER FOR THE FUTURE

for warehouse, loading and hauling operations. Loaded cargo weight information can significantly aid warehouse and fleet to optimize performance, improve operating efficiency and to eliminate or reduce fines and fees related to over and under-weight haulers.

In addition to cargo weight, AccuLoad Fleet Management Systems can provide time and temperature monitoring, log, shock, motion, time of travel, current location and environment and other information, critical for the security or condition of

valuable, perishable or time-dependent goods.

Accurate Weighing Systems, Inc., established in 1971, has been providing innovative electronic onboard vehicle scales and weighing systems since 1979. Prior to forming Accurate Weighing Systems, Mr. Bushong headed national sales for Toledo Scales.

Accurate Weighing Systems, Inc. is an authorized integrator of electronic scales, weighing systems and fleet management systems by Transcell Technology, Loadman (Creative Microsystems),

Trans-Data Associates and MARAT Company.

Source: Accurate Weighing Systems, Inc.

Cummins Releases Diesel Exhaust Brake for 2003 Dodge Ram Heavy Duty

Cummins Inc. has announced the release of its diesel exhaust brake for the 2003 Dodge Ram Heavy Duty truck with the new Cummins Turbo Diesel engine.

The new Jacobs Exhaust Brake® represents the third generation of turbo-mounted exhaust brakes designed specifically for the Cummins-powered Dodge Ram pick-up truck.

The Jacobs Exhaust Brake transforms horsepower into vehicle braking power through a valve inserted into the exhaust system. When activated, this valve controls the exhaust gas flow and increases backpressure in the engine, slowing the vehicle to maintain better control, especially when towing heavy loads downhill. Significant reduction in vehicle brake wear can also be realized with regular use of the Jacobs Exhaust Brake.

Cummins and Jacobs Vehicle Systems, manufacturer of the legendary Jake Brake® family of products, have jointly engineered the Jacobs Exhaust Brake. Since it is the only exhaust brake to endure rigorous engine and vehicle system durability tests to the satisfaction of both Cummins and Dodge, it has earned the sole endorsement as the genuine Mopar® exhaust brake. It is the only exhaust brake approved by Cummins for use on the Cummins Turbo Diesel engine.

Cummins offers many new features for the 2003 model year. First, the Jacobs Exhaust Brake kit includes an exclusive, easy-to-use fingertip control power switch that mounts direct to the six-speed gear shift lever. This switch provides for «eyes-on-the-road» safety and driver convenience.

Additionally, a new heavy-duty, belt-driven vacuum pump is included in the Jacobs Exhaust Brake kit. It easily mounts on the new Cummins Turbo Diesel engine, without any permanent modifications. Also, for 2003, more peak retarding horsepower is now available, when compared to previous Cummins 24-valve engine exhaust brakes.

The Jacobs Exhaust Brake has been carefully designed by Cummins to provide years of maximum retarding horsepower for the Cummins Turbo Diesel without damage. It will not risk either the engine or power train warranty when properly installed on Dodge Rams with manual transmissions.

The 2003 Jacobs Exhaust Brake is backed by a 3-year/100,000-mile (160,935 km) warranty on the exhaust brake assembly and a 3-year/36,000-

Mario Roussel Phone : (613) 737-3963
 Toll Free : 1-877-737-3963
 Cell : (613) 794-4476
 Fax : (613) 737-3908



EASTROCK INC.

3389 Hawthorne St. Ottawa ON K1G 4G2

Rental Return Who Will Be First ?

1998 Furukawa HCR9-ES
 5900 hours, perfect condition
 with winch
FINANCING AVAILABLE
RENTAL WITH BUY BACK POSSIBLE







11 Models Available
 Strike force from 200 lb ft. to 11 000 lb ft.
FOR EXCAVATORS FROM 1500 LBS TO 160 000 LBS

ALL MODELS AVAILABLE FOR DELIVERY... ASK US FOR A DEMONSTRATION!

MONTREAL: (514) 648-6667	OTTAWA: (613) 737-3963	TOLL FREE: 1-877-737-3963
------------------------------------	----------------------------------	-------------------------------------




mile (57,935 km) warranty on other installation kit components. Warranty service is available at any of the nearly 3,000 Dodge dealer or 180 Cummins distributor locations throughout North America.

The Jacobs Exhaust Brake is available for purchase and installation at your local Dodge dealership or at any Cummins distributor location in the United States or Canada.

Source: Cummins Inc.

Largest Biodiesel Plant in the U.S. Now Being Assembled in California

Green Star Products, Inc. announced that the largest biodiesel plant in the US is now being assembled in Bakersfield, California. The production capacity of this plant is expected to be 35 million gallons per year at full production. This is significant when considering that the entire U.S. production of biodiesel in 2002 was only 15 million gallons.

GSPI has a 35% ownership position in American Bio-Fuels, LLC (ABF), the company that is building the plant through a joint venture.

The Bakersfield plant incorporates ABF's proprietary modular reactor/separator, which was tested and operated at the ABF's Adelanto facility (in Southern California) in early 2002. The reactor/separator modules can be quickly installed in increments of 2.5 million gallons per year in response to expanding market demands.

The rest of the biodiesel plant does not lend itself to modularization. The rules of economies of scale indicate that a much lower cost can be achieved if this part of the plant is built to maximum planned capacity. ABF, with the assistance of outside consultant engineers, has designed this section of the plant to be integrated into the continuous flow process.

The ABF continuous flow process design also reduces plant footprint; lowers maintenance and operations costs; minimizes capital construction costs; and shortens time to complete construction. All of these factors significantly lower the overall cost for producing ASTM grade biodiesel. The Bakersfield plant will be capable of producing biodiesel in the Second Quarter of 2003.

Biodiesel is a cleaner burning alternative diesel fuel made from renewable and recyclable resources. It is non-toxic, biodegradable and essentially free of sulfur and carcinogenic benzene.

Green Star Products, Inc. is organized as a holding company with major ownership positions in a set of subsidiary companies now commercializing advanced automotive and energy technology products.

Source: Green Star Products, Inc.

Volvo Trucks Complements Offering in North America with New 465-HP Engine

Volvo Trucks North America has launched a new 465-hp engine for the North American market that meets EPA02 environmental standards. Volvo is the only company in the North American market now able to offer a complete range of engines with the same power output levels it offered before the new, more stringent emission requirements took effect.

Volvo's new VN series has been favorably

received by customers and trade press since the launch in August 2002. The new engine is the most powerful in the series of engines Volvo has developed to meet the EPA02 requirements that took effect on October 1, 2002. With a power output of 465 horsepower, the engine is intended primarily for customers that drive heavy transports over long distances.

Source: Volvo



**MANUFACTURER
SNOW REMOVAL
EQUIPMENT
& ATTACHMENTS FOR
HEAVY MACHINERY**

INTERNET:
www.edfitd.com

E-MAIL :
info@edfitd.com

**BUCKET
FOR LOADERS
& EXCAVATORS**

**QUICK-ATTACH
FOR LOADERS
& EXCAVATORS**

**MATERIAL HANDLING
FORKS
FOR LOADER**

EDF

1-888-649-3331
(514) 866-6859
(514) 649-9461
Fax: (514) 649-1874

1735 Lavoisier St. Sainte-Julie Qc J3E 1Y6

CALL US !
Toll Free **1-888-649-EDF 1**

CSXT orders 75 BELTPACK® Systems

CANAC Inc. announced that CSX Transportation Inc. (CSXT) has ordered and will take delivery of 75 BELTPACK® locomotive remote control systems during the coming year.

Commenting on the purchase, Mike Cantrell, senior vice president-advanced operations technologies, CSXT, said, «We are pleased with the addition of the CANAC BELTPACK® remote control technology. Remote control technology continues to be a key factor in improving the safety of our yard and industrial service as well as making our operations more efficient.»

Frank Trotter, President and CEO of CANAC, added, «BELTPACK® remote control technology has been adopted in significant numbers on every North American Class I railroad. We are extremely

pleased to have CSXT choose the proven safety, reliability and operational benefits of our BELTPACK® technology.»

The state-of-the-art BELTPACK(R) system uses an advanced onboard computer programmed with the industry's best train handling practices. This «Brain in the Train™» is one of the keys to BELTPACK®'s superior contribution to the safety and efficiency of rail yard operations. With more than 4 million hours of yard service on Class I railroads across North America, data from actual operations demonstrate that BELTPACK® has made yard switching operations more than twice as safe for railroad workers compared to traditional manual operations.

With more than 500 systems already in use on Class I railroads, BELTPACK® is the premier prod-

uct in CANAC's portfolio of remote control systems for railroads and industry, all produced at the company's ISO-certified facility in Pittsburgh, PA. Founded in 1971, CANAC provides knowledge-based products and services to freight and passenger railroads, industries operating their own railroads, investors and governments throughout the U.S., Canada and Mexico.

Source: Canac Inc.

Cummins Westport enters Egyptian market

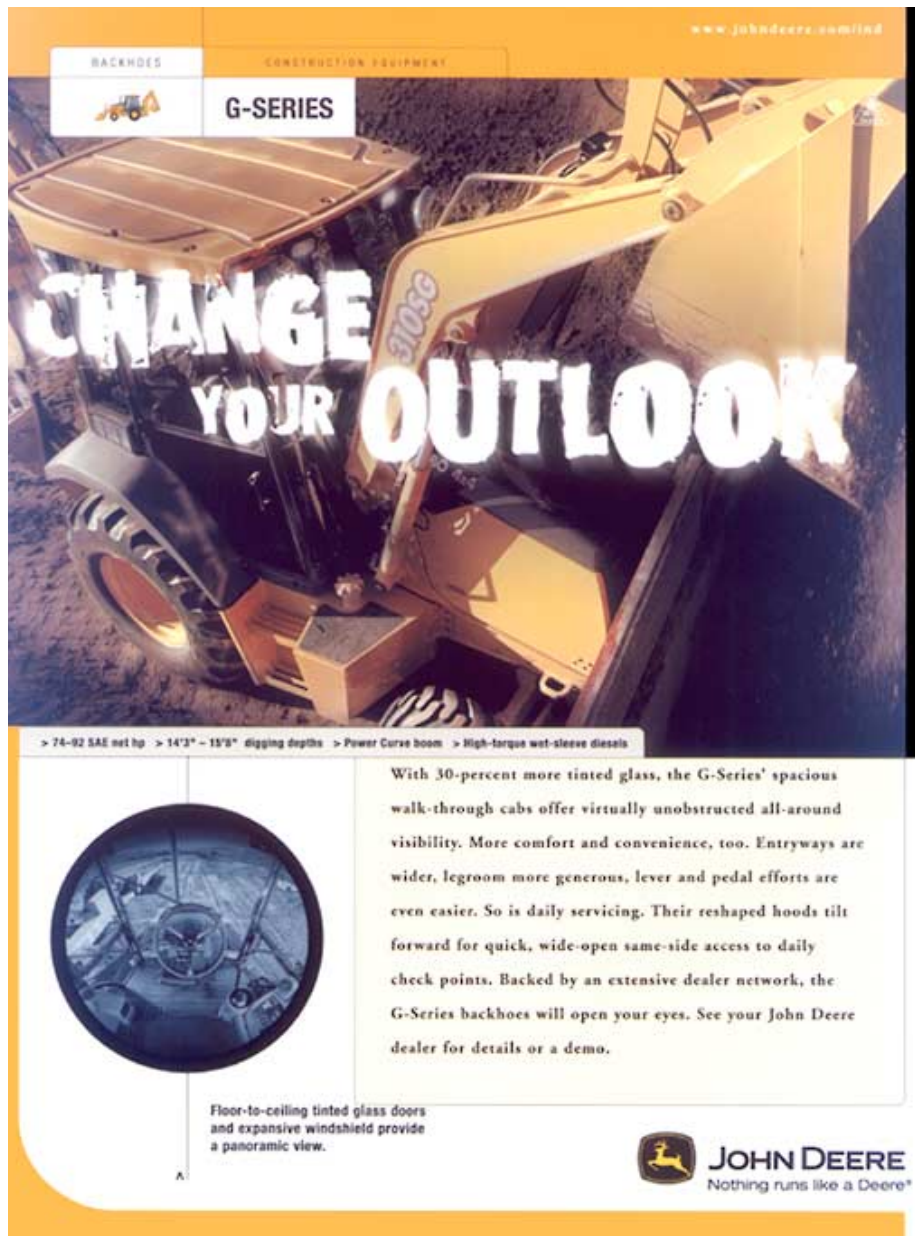
Cummins Westport Inc., a joint venture of Cummins Inc. and Westport Innovations Inc., announced that it has entered the Egyptian market with Egyptian Automotive Company, the leading bus manufacturer in Egypt.

The market entry begins with a display of the low-emissions B Gas Plus natural engine in a 40-foot Egyptian Automotive transit bus at the Cairo International Fair in Egypt from March 19 to March 28, 2003. The fair, the largest in the Middle East, will provide important exposure for this new, advanced Cummins Westport 5.9-liter natural gas engine in a region with strong future potential. The bus and engine, which were ordered by Cairo Transit Authority, will go into service in Cairo after the fair. The Cummins distributor responsible for the order is Egyptian International Motors of Cairo.

«With natural gas reserves more than double its petroleum reserves, Egypt is eager to reduce its reliance on diesel and to move to natural gas," said Greg Young, Cummins Westport General Manager for Europe, Middle East, and Africa. "The presence of this bus in Cairo and its subsequent use with Cairo Transit will be a high-profile showcase for the B Gas Plus engine in the Middle East. Once in operation, we are confident the engine will prove itself capable of handling Egypt's extreme operating conditions and we look forward to expanding our business in this area.»

Cairo, a city of approximately 16 million people, has significant air quality issues. The United States government, through USAID, funds the Cairo Air Improvement Project (CAIP), which monitors air quality and funds air quality improvement projects. One of CAIP's key initiatives is encourage Cairo's two largest transit agencies, Cairo Transit Authority and the Greater Cairo Bus Company, to switch from older diesel fueled buses to new low-emissions buses. Cummins Westport natural gas engines are significantly cleaner than the 3,500 diesel buses operated by these two transit fleets.

Source: Cummins Westport Inc.



BACKHOES CONSTRUCTION EQUIPMENT www.johndeere.com/ind

G-SERIES

CHANGE YOUR OUTLOOK

74-92 SAE net hp > 14'3" - 15'8" digging depths > Power Curve boom > High-torque wet-sleeve diesels

With 30-percent more tinted glass, the G-Series' spacious walk-through cabs offer virtually unobstructed all-around visibility. More comfort and convenience, too. Entryways are wider, legroom more generous, lever and pedal efforts are even easier. So is daily servicing. Their reshaped hoods tilt forward for quick, wide-open same-side access to daily check points. Backed by an extensive dealer network, the G-Series backhoes will open your eyes. See your John Deere dealer for details or a demo.

Floor-to-ceiling tinted glass doors and expansive windshield provide a panoramic view.

JOHN DEERE
Nothing runs like a Deere®

Roxboro Excavation Believes in Allison Transmission

Roxboro Excavation Inc. is particularly visible during winter in Montreal when its fleet of baby blue trucks are at work removing the snow all across the region. This family business, started by Jean-Guy Théoret in 1972 with no more than a loader-backhoe and a dump truck, is now in the hands of his five sons. With more than 200 employees, Roxboro Excavation specializes in asphalt paving, excavating and snow removal. Its fleet has grown since the days of the first loader-backhoe! Today, Roxboro Excavation owns a fleet of over 100 heavy duty trucks, about 40 of which with Allison automatic transmissions, as well as over 200 pickup trucks and construction machines.

The trucks equipped with Allison transmissions are mostly Mack MR and RD dump trucks. The most recent acquisitions are eight Volvo VHD used as tractors during summer and converted in snow trucks during winter. The versatility of these units must be underlined because, with a small Volvo 12 litre (385 hp) engine, coupled to an Allison HD4560 automatic transmission, they are rated at 120 000 pounds GCW while maintaining

the component cost to a reasonable amount.

It was with the unit Number 124, a 1984 International with an MT653 automatic transmission, bought used, that Roxboro Excavation has started its good relations with Allison. The company was looking for a means to reduce its maintenance expenditures and enhance the reliability of its trucks used in snow removal applications. Results have been up to the expectations and the lower costs of maintenance have compensated for the higher acquisition costs of the Allison transmission.

Rapidly, other advantages have been noticed. Roxboro Excavation is at the forefront in the use of technology for calculating its operating costs. This gives them a great control on their costs and allows them to offer their services at very competitive rates while insuring a good profitability.

During snow removal operations, hauling the snow to the dump site, it has been proven that two trucks using an Allison HD4560 automatic transmission are able to do the same work as



three similar trucks with a manual transmission. In those extreme conditions, the benefits of an Allison transmission are evident. This, without even taking into consideration the better working conditions for the drivers. For them, Allison automatic transmissions are a major advantage that makes them more efficient and versatile in their work with a reduction in the level of stress and fatigue.

Source: Allison Transmission

A New Trail King for Bricon Transport



Remorque Lewis, the Trail King dealer for Montreal region, has just delivered a second Trail King float to Bricon Transport, a company specialized in the haulage of construction equipment and other heavy loads, based in St-Bruno, south of Montreal.

Bricon Transport is active all around the Provinces of Quebec, Ontario and the Maritimes.

With more and more demanding norms and regulations in the transportation industry, Bricon Transport is proud to put its expertise to profit with the technology of Trail King.

Their new lighter and better performing float gives the opportunity of hauling higher loads legally, even in the Spring season.

With its fleet of diversified and versatile equipment and, naturally, its team of experienced and dynamic personnel, Bricon Transport is renowned for giving its customers full satisfaction.

The professionals from Bricon Transport will be happy to serve your needs and solve your transportation problems, anytime, anywhere.

Source: Bricon Transport,

Jean-Philippe Brissette, (450) 461-3310 extension 1

A man in a suit and glasses is holding a large, dark, cylindrical demolition tool over his shoulder. The background is a light blue sky with stylized white clouds. The text is arranged in a vertical column on the right side of the image.

We manufacture demolition tools for:

**TRAMAC
ALLIED
STANLEY
N.P.K.
RAMMER
FURUKAWA
TELEDYNE
OKADA
MELROE-BOBCAT**

GéoRocFor
ACCESSOIRES INC.

(819) 569-4207

www.georocfor.com
geo.roc.for@sympatico.ca

165 Joseph-Robertson, Sherbrooke, QC J1L 2W7

Open House at Mabo Western Star, A Joint Demonstration of Allison and Eaton Transmissions

The Abitibi region is certainly the birthplace of many innovations! Last summer, Mabo Western Star, the dealer for Val d'Or and Abitibi region invited his customers to compare two similar Western Star model 4900 trucks, one with an Allison HD4560 automatic transmission and the other with a semi-automatic Eaton AutoShift® transmission.

The reputation of Western Star trucks in heavy duty applications is well established. The market share of Allison automatic transmissions in extreme application is growing steadily. This kind of demonstration serves to dismiss that kind of underlying myths about automatic transmissions.

For this comparison, the engine with the six speed Allison HD4560 transmission was a 12.7 litre Series 60 Detroit Diesel rated at 500 hp and 1450 lb ft of torque while the engine with the 18 speed Eaton AutoShift was the new 14 litre Detroit Diesel rated at 500 hp and 1850 lb ft.

A test route of over 5 km has permitted to demonstrate that the truck equipped with the Allison transmission had exceptional capabilities in on/off-road applications and surprising acceleration and braking performances.

Mr. Joe Johansson, engineer for Allison Transmission, a specialist in Western Star truck applications, had made the trip to answer any technical questions for this world's first. With the help of Mr. Fernand Boisvert, President of Mabo

Western Star, and his team, they compared the two trucks on the same test track, with comparable loads and with the same driver, Mr. Boisvert himself, a veteran whose qualities as a driver are doubtless.

The test helped to compare a number of performance parameters on the same road (35% off-road and the rest in a semi-urban area). The track included a 18% grade in a local quarry where the truck had to stop in the middle and restart.

Time, fuel consumption and productivity have then been calculated on a portable computer connected to the engine management system.

Is it necessary to say that the truck with the Allison transmission was easier to drive... And more productive...

The cost for the two trucks was about the same at \$150,000. In this kind of application, the truck with the Allison automatic transmission can make more trips in a given time. Allison offers also an hydraulic retarder that can be used around town, because it is silent, and offers a continuous



braking force, as opposed to conventional engine compression systems.

At the time of this demonstration, Western Star was the only truck manufacturer approved by Allison Transmission for 500 hp engine in a conventional application. In the following months, the demo truck has been seen around Montreal and elsewhere in the Province of Quebec. It is offered as a rental truck by Mabo Western Star.

Source : Mabo Western Star
Fernand Boisvert, (819) 825-8995
Allison Transmission
Jean-François Aussillou, (514) 528-6286

A World First, a 500 hp Western Star Truck With an Allison Automatic Transmission

Western Star Trucks, in collaboration with Mabo Western Star, Detroit Diesel and Eaton Fuller have been honored to offer truckers in the Abitibi region the opportunity to compare the very first 2003 Western Star truck equipped with a 500 hp engine coupled to an Allison automatic transmission with a 2003 Western Star truck equipped with an Eaton AutoShift transmission at the dealership of Mabo Western Star in Val d'Or.

Over 50 customers have answered the call and have test-driven the trucks in real-life situations. At the same time, Mabo Western Star was happy to announce that this truck would be available for short term rentals.

Jean-Claude Fortin, district manager for Western Star Trucks ; François Bourbeau, sales manager for Eaton ; Sylvain Lortie manager of the

Val-d'Or Detroit Diesel outlet ; Julien Maheux ; Réjean Frenette and M. André Ruest and Michel Fortier from Detroit Diesel Allison Canada East as well as Jean-François Aussillou, and J.K.S. (Joe) Johansson, from Allison Transmission, contributed to make a success of this event.

Western Star trucks offers a range of heavy duty trucks made of prestigious long haul trucks as well as specialty trucks with planetary drives for forestry applications.



Western Star will build a truck exactly as the customer wants it, directly from the factory.

Source: Western Star Trucks
Jean-Claude Fortin

RAC Eastern Regional Exhibition

Here are a few pictures of the Eastern Regional Exhibition organized by the Rental Association of Canada (RAC) and the Association de location du Québec (ALQ) in Saint-Hyacinthe, Quebec.

This year, the event, the biggest of its kind in Canada this year, had a Western Theme.

During the event, the winners of the «Rental House» and the «Supplier» of the Year 2002 were announced. These were «Équipement L.A.V. Inc.» of Quebec City and «Abmast Inc.» based in St-Hyacinthe respectively.

Source: Association de location du Québec
1-877-620-0222



WANT TO GET IN CLOSE?

Who doesn't?

Now operators can work closer than ever to a wall or other obstacle and still concentrate on their work instead of losing time inching up to a street. The industry's largest line of short-radius excavators includes seven with zero tail swing and three that never extend more than 5.1" beyond the tracks.

Choose the 3,240 lb 13SR or the 56,890-lb 235SRLC or any of eight others in between. Put the optional High & Wide undercarriage under the 235SRLC and at 60,640 lbs. you have the industry's largest short-radius excavator. All Kobelco Short-

Radius machines have the maneuverability, visibility and balance to work efficiently in tight spaces. Even with the compact design, you don't have to give up any lifting capacity or stability with these machines. Put a Kobelco Short-Radius Excavator through some tight turns at your Kobelco dealer, and see how much work you can pack into a small space.

KOBELCO
Your competitive edge.

www.kobelcoamerica.com



MARK GRAVEL BOX (1993) Inc.

1069 Des Pionniers Ave. Balmoral NB E8E 1B5
Phone: (506) 826-9106 • Fax: (506) 826-3632 • www.markgravelbox.com
Martin Bissonnette Cell.: 506-759-5448 • Carl Arseneault Cell.: 506-684-0515

© 2001 Kobelco Construction Machinery America Inc. Ltd.

Intermat 2003

*a preview of the major new products to be displayed in Paris
from May 13 to 17, 2003*

INTERMAT 2003

LES ENTREPRISES INTERNATIONALES DE LA MAINTIEN ET DE LA REPARATION DES EQUIPEMENTS DE LA CONSTRUCTION
LES ENTREPRISES INTERNATIONALES DE LA MAINTIEN ET DE LA REPARATION DES EQUIPEMENTS DE LA CONSTRUCTION



Magotteaux will be at Intermat 2003 to showcase two specific technical areas of expertise: the Mag'Impact® with its modular characteristics which provides a high degree of flexibility, and its Xwin® technology which allowed the company to gain a significant market share in market segments that were not economically attainable by impact crushers with conventional monometallic solutions.



Krupp Hazemag SAS, a subsidiary of Thyssen-Krupp Technologies, will show its latest products at Intermat 2003.

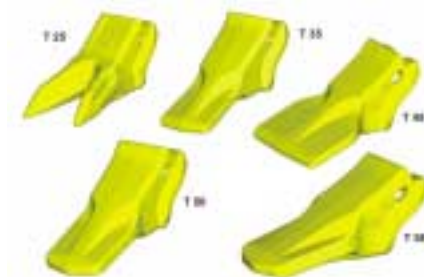
As an integral part of the product line, the Kubria® cone crusher is used for secondary and tertiary crushing of ores as well as the production of ballast and chippings made from gravel and other pre-crushed bulk materials. There will also be on display a dedusting installation made by the Austrian company Scheuch, that features the EMC Technology (Energy-Minimizing-Concept)

specially developed for high rate dedusting installations in the cement, lime, plaster industries.

une installation de dépoussiérage de la société autrichienne **Scheuch** qui incorpore la technologie EMC (Energy Minimizing Concept).



Combi Wear Parts will introduce a new system size for excavator and loading shovels teeth. They offer very good penetration properties and high wear resistance with long life times. The new system size C 3.5 is designed for excavators with an operating weight from 28 to 35 tonnes and comprises 5 shapes.



The origins of **Panien s.a.** dates back to 1891. The company offers a range of lime spreaders used in agricultural and road building applications. The model 316-18 features a 18 m³ capacity body and a precise spreading system controlled by microprocessor.



Intermat 2003 will mark the European launch of

the Manitowoc model 18000. This 600 tonnes (660 US) crane is new to the range and fits between the 272 tonnes (300 US) model 2250 and the 753 tonnes (831 US) model 21000.

The electrical system relies on the CAN-BUS technology which greatly reduces the number of junction boxes and the length of wiring for a greater reliability.

The new model is powered by a Cummins QSX 15 engine rated at 600 hp or a C-16 Caterpillar of same power. A wireless load moment indicator is standard.



Berco S.p.A., renowned for its undercarriage components and systems will use Intermat 2003 to preview many products that will be introduced on the European market in the near future.

Berco will be previewing 5 complete undercarriage solutions for skid steers. The skid steer undercarriages are some of the latest elements in a company strategy over recent years that has led to a marked product range extension in, firstly, mining products, then «rubberized» products and now undercarriage systems for tracked skid steer machines, a category of machinery that is spreading quite rapidly all over the world.

The other product area will be continuing to show novelties linked to the extension of their already vast ranges.



Don't miss Intermat 2003!

From Tuesday through Saturday, May 13-17, 2003
at the Paris-Nord - Villepinte Exhibition Center, Paris, France

INTERMAT 2003

INTERNATIONAL EXHIBITION OF EQUIPMENT AND TECHNIQUES FOR THE CIVIL ENGINEERING AND CONSTRUCTION INDUSTRIES

The world's rendez-vous for construction industry professionals in 2003

320,000 square meters of exhibition space • 1,500 exhibitors • 210,000 attendees

NEW

Animation :
*small and medium worksite
automation : MECABAT*

Themed areas :
Rental, Concrete...

Villages :
*Roads and
Environment*

Get your free visitor
entrance badge on-line at
www.intermat.fr

BUILD YOUR WORLD

**Demonstration
Zone**

The Innovation Awards

Night Session :
Thursday May 15th from 6pm to 10pm



INTERMAT North American Representation
Inter Management, Inc. - 385 East Boulevard, Suite 200 - Charlotte, NC 28201 - USA - Tel : (704) 363-8841 - Fax : (704) 363-8426 - Email : www.intermatna.com

Compact Machinery Ideal for Tight Spots

When you visit equipment shows, it becomes evident that more and more new products are becoming available in the field of compact machinery. They would not have been possible without the latest developments in engines and hydraulic systems technologies. These machines that used to be for occasional users are now powerful and versatile enough to be considered seriously in many professional applications where their small footprint limits the damages caused to the environment and their power renders them more efficient than bigger machines.

Bombardier and Deere & Company will jointly develop new wheeled utility vehicles. The first product resulting from this alliance will be a line of new John Deere-branded utility vehicles derived from a Bombardier All-Terrain Vehicle (ATV) platform, to be launched initially in Canada and the United States by the end of 2003. The products will be manufactured by Bombardier at its Valcourt, Québec facility.



Deere & Company has also teamed up with another Canadian company, Hydrogenics Corporation, to develop a fuel cell-powered Commercial Work Vehicle (CWV).

The CWV, a modified John Deere Pro Gator™ Utility Vehicle, was shown at the Electric Transportation Industry Conference and Exposition in Hollywood, Florida last December.

Bobcat Company offers a new type of work vehicle. The **ToolCat 5600** combines many of the characteristics found on other utility vehicle such as a high load capacity and a two passenger cab with a front mounted boom that can be used with most of the attachments designed for Skid Steers.



With four wheel drive and four wheel steer, the ToolCat is extremely versatile in a number of applications. It is probably the first of a new kind of compact equipment.

The **Bobcat MT50** illustrates very well the new wave of smaller equipment. At roughly 2500 pounds, it is a miniature version of a Skid Steer loader. Most of the attachments designed for the 36 inch **Bobcat 443** will fit this walk-behind machine that features a 500 pounds lift capacity.



Many other brands offer machines that are comparable. For example, **Thomas Equipment** has its model **25G**, a featherweight at only 1500 pounds. It is small at only 39.9 inches in width but its lifting capacity is still rated at a very serious 475 pounds (215 kg). It features a universal coupling system that can fit to many attachments. A tracked version, the model **25GT** is even more stable on soft grounds.



The **Ditch Witch SK500** is another of this new breed of multi-purpose machines. At only 36 inches in width, it can easily go through standard door openings. It comes with rubber tracks in order to minimize damages to pavement or grass.



To carry these small machines, you will need

special trailers. Ideally, the loading height must be as low as possible and the loading and unloading cycle must be as fast as possible.



Landoll Corporation is one of the many manufacturers that offer those trailers. Used by contractors as well as equipment rental outlets, they feature tilting decks or sliding axles to facilitate the loading of low riding height equipment.

Landoll's model **LT1420** has a tilting deck while its bigger model **425** features sliding axles.



Now, to reduce the pollution from the exhaust tip, **Nett Technologies**, a Canadian company from Mississauga, offers catalysts designed for Bobcat machine. This device completely replaces a section of the exhaust pipe making its fitting an easy proposition without the need for cutting and welding.



The use of the catalyst reduces the pollutants from diesel engines. The company also offers similar devices for engines running on propane or natural gas and gasoline.

www.infrastructures.com

...when the going gets tough
you want the best...

TREMIX

MV440 REVERSIBLE DIESEL PLATE



Hood opens for complete
accessibility

*“Self bleeding Yanmar diesel designed for
high productivity, low operating cost.”*

Antivibration handle equipped with
“dead man’s” grip safety device

Lockable Hood
• full protection
• quiet operation

with
Electric start

Superior manoeuvrability.
Progressive speeds both
forward & reverse.
Full compaction at any speed.

Unique belt tensioning
• no tools required
• spare belts inside hood

Hardox 400 bottom plate



Uniquip Canada Inc.
For more information, call :
1-800-332-4012

*A Reliable Team,
Reliable and Profitable Tools*

Uniquip

Leica Geosystems introduces two RUGBY Lasers

The RUGBY 100LR is an automatic self-leveling laser for general construction. According to Dan Dykhuis, Program Director of Lasers, "The RUGBY 100LR is a result of listening to our customers. It is built to be rugged, yet easy to use, and can make quick work of concrete forming, pad placement and framework, setting foundation and footings, as well as elevation indication for heavy equipment." The RUGBY 100LR has a working range of up to 2500' (770 m), automatic elevation alert function, manual grade up to +/- 10% with cross-axis self levelling. It levels automatically and very quickly too, has a simple five-switch keypad that controls all the functions, plus a low-battery and an out of level indicator.

«Building along the same principles that guided the development of the earlier product, the RUGBY 100, customers can look forward to the same level of reliability and robustness. The Rugby 100 has received an overwhelmingly enthusiastic response from both Dealers and Customers worldwide» added Dan.

The co-molded housing of high-impact plastic and rubber is as rugged as it looks. RUGBY

100LR is the first Leica branded product combining the heritage and expertise of Laser Alignment and Leica Geosystems.

The RUGBY 200 is a horizontal and vertical dual-axis laser for interior and general construction applications. According to Doug Plantenga, Product Manager for Lasers, «The RUGBY 200 is the most accurate, versatile and rugged interior laser on the market today.» Fully automatic in both the horizontal and vertical position, the RUGBY 200 features a bright, visible beam with a working range of up to 1000' (300 m), plus a plumb beam for 90° layout work and a plumb-down feature for setup over a point. It also features adjustable head speeds, scan mode, H.I. elevation alert, and an optional full-function remote control, and a deluxe

carrying case that allows the laser and wallmount bracket to be easily stored fully assembled.

The RUGBY 200 is built with the same ergonomic and structural standards as the RUGBY 100 and RUGBY 100LR, both of which have received an overwhelmingly enthusiastic response from customers worldwide. «The Rugby 200's superior performance and reliability is sure to set the industry standard for interior lasers,» adds Doug.

Based in Grand Rapids, Michigan, Leica Geosystems GR LLC is the global construction segment within the

Surveying & Engineering Division of Leica Geosystems. The Corporate Headquarters are in Heerbrugg, Switzerland.

Source: Leica Geosystems GR LLC
Gradtek Électronique, inc.



CONTANT INC.

(450) 666-6368 or 1-800-CONTANT
www.citysnowblowers.com

Fax : (450) 666-0626

6310, des Mille-îles, St-François, Laval, QC H7B 1E5



Removable snowblowers 2 phases, capacity from 2500 to 5500 t/h
Rental or leasing by the hour / week / season

The new Rugby 100 «truly a high quality electronic level»

Leica
Geosystems

Laser Alignment, now a division of Leica, announces the launch of its totally new electronic level

Easy to Learn. Easy to Use.

The professional's choice for fast, reliable and accurate laser leveling

- Accuracy of $\pm 1/16"$ @ 100 feet (± 1.5 mm @ 30 m)
- Working range diameter of up to 2,500 ft (750 m) for long distance and machine control applications
- H.I. (elevation) Alert indication prevents errors due to sudden shifting or movements of the tripod
- Out of level and low battery indicator lights
- Class I Infrared (IR) beam is rated the safest class laser
- Available with the optional rechargeable NIMH battery pack



GRADTEK
1800-567-5273

Gradtek Électronique Inc.

8100AA route Transcanadienne
Saint-Laurent, QC H4S 1M5
(514) 334-3345 • 1-800-567-5273
Fax (514) 334-3347

www.leica-geosystems.com
www.gradtek.ca



When your back's against the wall, Kubota's new U35 lets you come out digging.

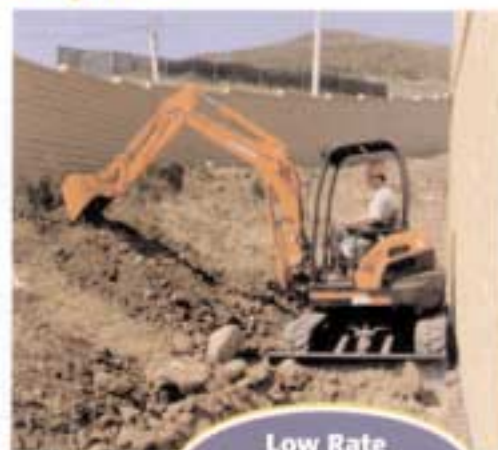
Zero Tail Swing

It's a ground breaking new spin on compact excavator evolution and we call it Zero Tail Swing. The beauty of Zero Tail Swing is that as the Kubota U35 rotates 360°, its counterweight area stays within the track's width. This gives operators a distinct advantage over standard machines, especially when working in close quarters or near standing structures.

Easy Maintenance

Logically arranged controls and valves make routine adjustments and maintenance simple. We've improved the access areas by moving the control valves from below the foot panel to the right side of the machine's body. The right side bonnet easily detaches without tools and the engine's hood opens wide for easy servicing.

The new Kubota U35 has re-defined its class with a more powerful and quieter engine, dramatically improved operator access and a better working range than any other zero tail swing excavator on the market. See one today at your local Kubota dealer. We're sure it'll turn your head.



**Low Rate
Financing Available
OAC**



Powerful Solutions For A Compact World

Find a Dealer nearest you by calling:
Markham, Ont.: (905) 294-7477 • Delta, B.C.: (604) 940-6061
Drummondville, Que.: (819) 478-7151

Or visit our website at: www.kubota.ca

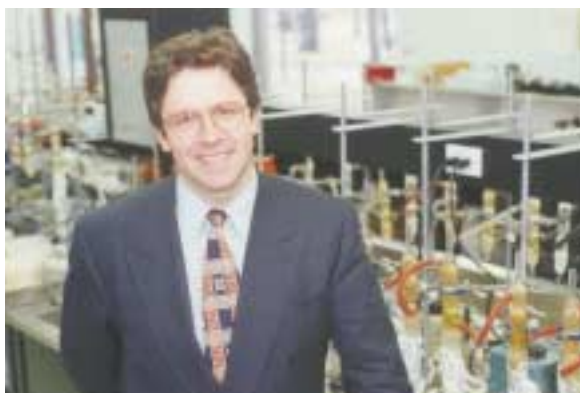
*For your safety, ROPS with a seatbelt is
strongly recommended by Kubota
Canada Ltd. in all applications.*



Biogenie's Biocentre Spells Success in France

Biogenie, which is specialized in the remediation of contaminated sites, recently completed a \$2 M investment project for the expansion of its contaminated soil treatment centre, called the Biocentre, located in the suburb of Paris. This investment was made due to the increasing number of contracts Biogenie has obtained in France, where it has been operating an office since 1995 and currently holds approximately 20% of the site remediation market.

«The success of the Biocentre is directly related to the real estate market boom in the region of Paris. Within a real estate project, when the excavation work reveals contaminated soil, real estate developers mainly seek a rapid off-site treatment and disposal solution in order to avoid a delay in construction work. In addition to being rapid, this solution must also be safe as well as cost-efficient. This is exactly what our Biocentre solution offers real estate developers and construction contractors: a quick, cost-efficient and permanent solution for any volume of contaminated soil be it large or small. The contaminated soil is quickly transported to our authorized facility to undergo treatment which permanently destroys the contaminants. This is what we call a good



product at the right time and for the right price», stated Biogenie's president, Mr. Benoit Cyr.

The Biocentre, operated by Biogenie, was the first to be established in the Île-de-France region, a few kilometres away from the heart of Paris. Since its inauguration in 1999, it has been highly successful. We may recall that last October, the Quebec chapter of the French Chamber of Commerce in Canada, acknowledged this success by awarding the Quebec-France Award for Business Excellence to Biogenie and its local partner, SEMARDEL. This success justified an expansion which was recently completed, increasing the centre's area from 10,000 m² to 40,000 m² and enhancing its storage capacity to 90,000 tonnes of contaminated soil.

At the onset of the design stage, one of the objectives was to minimize the Biocentre's environmental and visual impact. The environmental impact is minimized by our compliance to strict environmental protection measures, including the construction of ultra-tight treatment areas, the integrated management of process and surface water and the biological treatment of gaseous effluents. As for the visual impact, it was minimized by adding landscaping elements, including the construction of embankments and the planting of shrubs, as well as burying most of the infrastructures (ex. piping).

Through its Biogenie Europe subsidiary, Biogenie is proud to have earned the trust of a prestigious clientele which includes real estate developers, public organizations and industrial and manufacturing firms. For instance, over the last quarter, Renault, a car manufacturer, sent 40,000 tonnes of petroleum hydrocarbon-contaminated soil (fuel and hydraulic oil) to the Biocentre.

This soil was transported from the site of the former Renault car manufacturing plant in Boulogne-Billancourt where a major residential real estate project is to be erected.

Moreover, the Régie immobilière de la Ville de Paris (RIVP) recently awarded Biogenie Europe the management of a \$2.6 M contract for the remediation of a site in the 13th arrondissement, where two buildings are to be constructed.

This project involves completing the site characterization and the treatment and disposal of approximately 17,000 m³ of soil.

For its part, TotalFinaElf France has called upon Biogenie several times for remediation projects involving service stations. A project in Nanterre, which lasted for nearly three years, was also carried out on behalf of TotalFinaElf. This project was performed on the site of a former petroleum depot which was considered one of the most contaminated sites in all of France. The Réseau Ferré de France (RFF), owner of the French railway system, recently transported almost 6,000 tonnes of soil contaminated with metals, hydrocarbons and solvents; this contract is worth close to \$900,000.

Biogenie's president, Benoit Cyr, is very opti-

mistic about Biogenie's future in France: «Since we are already well positioned in the French reme-



diation market, our Biocentre investment, combined with our commitment for providing our clientele with high-quality service, makes for a promising future.»

Due to constant R&D efforts since its inception in 1986, Biogenie has become a leader in the remediation of contaminated sites. Major North American and European petroleum, petrochemical and utility companies are among Biogenie's clientele. Biogenie's distinctiveness lies in its sophisticated tools for 3D mapping of contaminant plumes, its innovative treatment technologies and its ability to carry out large and challenging projects at a fixed-price. In addition to its head office located in Quebec City (Canada), Biogenie has established offices in Montreal, Calgary, New York, Paris and London and maintains a staff of 170.

In the firm's last fiscal year, which ended in March 2002, consolidated sales reached \$33 M. Biogenie is currently a finalist for the Fidéides 2003 in the SME-Export category organized by the Quebec Regional Chamber of Commerce. Its outcome will be known on March 13. Among the prizes recently won by Biogenie, we should also mention the title of «Visionary Firm of the Year» awarded last December by the Quebec Chartered Accountants and the Quebec Chamber of Commerce. It should also be mentioned that, in Spring 2001, the firm received a «Phoenix Environment Award» for its export performance, an award granted by the private and public sectors.

Source: Biogenie



ASPHALT DISTRIBUTORS



ASPHALT PLANT



ROAD WIDENERS



CONCRETE PUMPS



CONCRETE SLIP-FORM PAVERS & FINISHERS



CONCRETE MIXERS



Link-Belt
CONSTRUCTION EQUIPMENT



AGGREGATES EQUIPMENT



MOBILE CRUSHING & SCREENING EQUIPMENT



CONCRETE BATCH PLANTS



LES ÉQUIPEMENTS LEFCO INC.
SALES • RENTALS • PARTS & SERVICE
1795 Guillet, Laval, QC H7L 5B1
(514) 389-8256 • (450) 682-2783
Fax: (450) 682-0463 • equip@lefcq.qc.ca

CERIU Fact Sheets :

AGp01 - «Soil Corrosivity Study»



Purpose and Use

A soil corrosivity study uses geophysical methods to determine the resistivity index of a given soil. The resistivity of the soil envelope is one of the risk indicators for external corrosion of buried metal pipes.

The AWWA C-105 Standard stipulates that soil resistivity readings are to be used in conjunction with other parameters (pH, redox potential, presence of sulphides, and drainage quality) to calculate soil corrosivity ratings and thereby determine appropriate preventive measures.

There are two geophysical approaches for studying the corrosivity of the soil surrounding buried structures, namely the electric and electromagnetic methods.

Electromagnetic methods are based on transmitting and receiving electromagnetic waves. The measuring instrument is equipped with both a transmitter and a receiver. The primary magnetic field, generated by the instrument, induces a weak current in the soil, which in turn generates a secondary electromagnetic field. By means of a sensor, the instrument measures the primary and secondary fields and calculates the effective depth of the measurement, which is a function of the distance separating the transmitter from the receiver.

Electric methods involve using two electrodes

to introduce a direct current into the soil, and two others close to the induced current to measure the difference in potential. By measuring the potential and the strength of the induced current, it is possible to calculate the resistivity of the soil. In general, the depth of the measurements increases according to the distance separating the electrodes.

Investigation Tools

Instruments for taking electromagnetic readings may take the form of long tubes with a transmitter and receiver at either end.

The equipment for the electric method mostly consists of four metal rods serving as electrodes, a current generator, a small device for reading the potential and the required cables.

Types of Pipes or Structures

Tests may be carried out on all types of soils. They are frequently used to determine the degree of soil corrosivity that could affect buried metal pipes. These pipes generally include water mains, pipelines, various supply lines, and gas pipes.

Preliminary and secondary work

With the electromagnetic method, no preliminary work is needed at the site, other than identifying where readings are to be taken.

The electric method requires drilling through the pavement, if a major roadway is involved. Some minor excavation work is also necessary to obtain a soil sample from the area near the pipe.

Conditions and limitations

When measures are carried out on or beside a major roadway or a residential area, plans must include traffic control and roadside signage. Operations should not be carried out in the frost season.

Since soil resistivity is influenced by water content, it is preferable to perform tests when soil moisture is at its highest in order to obtain the maximum readings.

When these methods are used in an area near a major telecommunications network, such as an airport, it is essential to obtain prior authorization

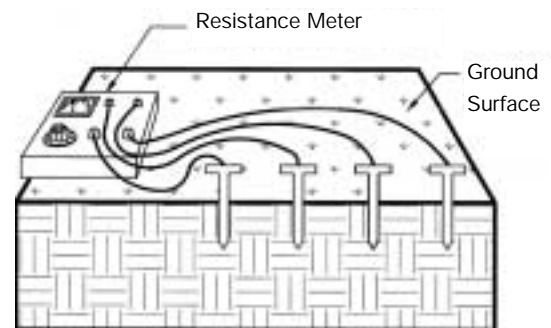
to avoid jamming signals or causing electromagnetic interference.

The presence of reinforcing steel in concrete structures or a large proportion of cables in reinforced concrete may falsify the readings.

The presence of significant quantities of metal buried near reading locations may also distort results. This technique, therefore, has limited usefulness in congested areas.

Timeline and Personnel Requirements

Electromagnetic methods: From 200 to 500 readings may be taken per day. Output depends on the distance between reading sites, the logistics involved, obstacles on the surface and traffic. The operation must be carried out by a specialist



in geophysics and, preferably, another person.

Electric methods: About 50 readings may be taken per day. Output depends on the distance between reading sites and the distance between electrodes. The operation requires a two-person team, one of whom should be a specialist in geophysics.

Results

The resulting report should contain a description of the geophysical method employed, as well as specific job details such as the method of collecting data, the distance between points, the depth of measurements, etc.

The conclusion of the report should include a presentation of the results in chart form and/or an identification of critical areas, followed by some discussion of results (accuracy, reliability, identification of potential sources of error).

For a given quantity of soil, the electromagnetic method measures the apparent conductivity of the

soil, while the electric method measures its apparent resistivity. Volumes and measurement standards will vary according to the instrument and method employed.

The measurement is therefore not linked to a specific place in the soil and cannot be as accurate as taking a spot reading of soil resistivity (or conductivity) by means of a probe. However, although absolute resistivity values may sometimes be inaccurate, an analysis of a range of readings will nevertheless serve to identify critical zones.

Ideally, the results should be accompanied by a number of in situ measurements, or nearby soil samples, in order to validate the most critical values obtained.

Various reading errors may also be generated by the presence below ground of unknown metal objects and/or house laterals.

The presence of a metal pipe can affect readings, but if its location is pinpointed accurately, the effect can be minimized by adjusting the position of the instrument accordingly.

Status of the Technology

Both methods have been employed for decades in mining exploration. However, their use in

the area of urban infrastructure is much more recent.

To bolster users' confidence in these methods, statistical analyses should be made between manual readings and geophysical methods. It would also be worthwhile to conduct tests to determine the optimum positioning for data-gathering instruments, taking account of the location of house laterals and other objects that could influence results.

*To obtain a copy of the CERIU Compendium of Infrastructure Technologies, please contact CERIU's Céline Forest at (514) 848-9885, extension 272 at the Centre d'expertise et de recherche en infrastructures urbaines (CERIU).
www.ceriu.qc.ca*



CERIU Fact Sheets in InfraStructures

The Centre for Expertise and Research on Infrastructures in Urban Areas (CERIU) is proud to be teaming up with InfraStructures to publish its fact sheets on new investigation and rehabilitation technologies.

Every issue of InfraStructures from now on will feature one of the fact sheets from the CERIU Compendium of Infrastructure Technologies, an invaluable reference tool that has already become a must for many infrastructure professionals.

Background and Origins of the Compendium

Municipalities and other organizations are generally conservative when it comes to underground infrastructure rehabilitation. For various reasons, they are usually reluctant to become what they see as "guinea pigs" for testing new technologies.

The lack of structured information and specific standards in this regard, coupled with the limited number of technology suppliers, are at the root of this hesitation on the part of a great number of potential users with regard to new technologies.

Moreover, given that the direct costs involved in using new technologies can be, at the outset, greater than those of a conventional solution, those working in the innovative technology sector

can often find themselves in a vicious circle. Because the rate of utilization for these new methods is low, they cannot offer competitive prices – and administrations, forced to cope with heavy budgetary restraints, are limited in their ability to spend the money on trying these new technologies.

Compendium Description and Objectives

Taking all this into consideration and with the objective of pursuing its mission to educate and disseminate information – and after many months of research, validation and collaborative efforts – CERIU released its Compendium. The document is divided up into two main sections, one devoted to municipal pavements and the other to underground infrastructure. Both are intended to guide users through an analysis of alternative project execution methods and to allay their fears and uncertainties as to the use of new investigation and rehabilitation approaches.

CERIU is now publishing these fact sheets in InfraStructures for the very same reasons. This information will enable you to increase your awareness and familiarity with new technologies, their operation, the conditions for their use and the corresponding terminology so that you are

more apt to adopt them as part of your infrastructure maintenance program.

Obviously, the entire Compendium is a much more complete source of information, offering numerous fact sheets on a wide variety of technologies that have, for the most part, already been applied in Quebec, along with project overviews describing the experiences of individual municipalities that have ventured into the world of new investigation or rehabilitation technologies. Both sections feature a table summarizing the main features of each technique, a list of suppliers and a bilingual glossary explaining the corresponding terms and expressions.

*To obtain a copy of the CERIU Compendium of Infrastructure Technologies, please contact CERIU's Céline Forest at (514) 848-9885, extension 272 at the Centre d'expertise et de recherche en infrastructures urbaines (CERIU).
www.ceriu.qc.ca*



CERIU

infra 2003

9th Annual Urban Infrastructure Week

The Changing Infrastructure Rehabilitation Market: The Emergence of a New Dynamic

Honorary Chair:

Francine Ruest-Jutras,

President of the Union des municipalités du Québec
and Mayor of Drummondville

November 17-19, 2003

Hotel Omni Mont-Royal, Montreal

*For details on submitting a proposal for a presentation,
please consult the Call for Proposals via our website.*

www.ceriu.qc.ca