

Innovation and road safety

For public-private partnership

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For public-private partnership

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Safety is becoming a major challenge for public policies, particularly in the road sector. The road safety innovations proposed in this feature, which are as much political and technical as social, are having an enabling effect on public-private partnership.

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F. Cipras - DSCR

"The impetus and support given by public authorities are relayed by the dynamism and creativeness of companies".

With this issue:

INTERMAT 2003

From 13 to 17 May 2003

Paris-Nord

Exhibition Centre - France



Concerns for sustainable development and for improved public safety, particularly road safety, are high up on today's policy agenda in France and throughout the world.

One of the questions we must address is how to mobilize innovation to meet these challenges and achieve the goals set for road traffic.

The initiative taken by the organizers of the Intermat 2003 Exhibition to open up an interchange and exhibition area for the road sector gives us an opportunity to present some of these innovations and make them known beyond our borders through Isted.

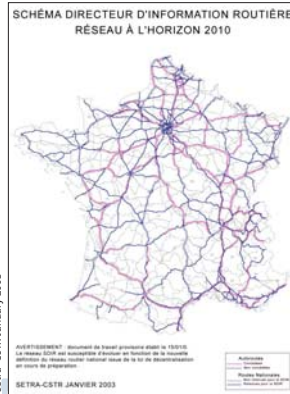
These innovations concern real time information for all those concerned by roads, mobilization of companies towards road safety and their staff towards accident prevention, improvements in road surfacing products and equipment, and targeting of road materials recycling processes towards the objective of zero waste.

These applications are all based on strengthened public-private partnership in which the impetus and support given by public authorities are relayed by the dynamism and creativeness of companies.

The increasing demand for international cooperation can draw on ideas to be gathered from these few examples and from the exhibitors at the Intermat 2003 Exhibition, which when tailored to the different contexts will be valuable for the future.

Yves Robichon,
Deputy Director of
Road Safety and Traffic

The Road Information Master Plan: a regulatory instrument



The Road Information Master Plan in the run-up to 2010.

Road information in real time, which means as soon as possible after the occurrence of disturbing events, contributes efficiently to improving safety of users insofar as it informs them of traffic and weather disturbances and of danger not far ahead. It thus reduces stress and the accident-producing behaviour this generates and lessens the risk of accidents and chain accidents through greater vigilance of road users.

The development of intelligent Transport Systems (ITS) can now provide motorists with such road information in the shortest possible time using instruments for incident detection (data collection and processing tools), automated data interchange between operators, network managers and road information service operators, and through the dissemination systems themselves which enable information to be targeted directly at the travelling motorist, according to the vehicle's location, and the difficulties and dangers liable to be encountered.

In this context, the government, in accordance with its policy to take into account all parameters likely to reduce road hazard, decided to set up a Schéma Directeur d'Information Routière (SDIR - Road Information Master Plan) at the Interministerial Safety Committee meeting on 25 October 2000.

Objectives of the SDIR master plan

The principle of the master plan is to ensure continuity and consistency of information on the trans-European national network and related roads, consisting of the busiest routes which are also those that concentrate the greatest proportion of accidents. The aim is to provide users of this 20,000 km long "SDIR network" with a continuous information service by consistently but selectively organizing the chain of collection, processing, dissemination and reception of anticipated and useful information (accidents, traffic jams, roadworks or winter service, etc.).

For the public authorities, a good command of a high-quality information service is key to a good command of road network operation. Road information is an essential tool which optimizes the use of existing infrastructure by better distributing traffic flows in time and space, thus deferring new investments. It is also essential for satisfactorily managing crises.

For this purpose, the implementation of the SDIR has three aims:

- Provide real-time information on safety and general traffic conditions over the 20,000 km of the network of trans-European national and related roads;
- Make this information accessible to the greatest number of people by dissemination throughout the road network and over telematic servers and by making it available free of charge to the media and operators in charge of relaying it;
- Circulate real-time synthetic road information among the actors involved, such as road managers, police, authorities, road information centres and service operators.

Deployment of the SDIR master plan

The implementation of the SDIR is a complex operation as many actors are concerned: the State departments (road information centres, road managers, police) other road networks managers (motorway concession companies, local authorities) and private operators of road information services.

An initial trial involving all these actors was carried out from 2001 to 2002 on the north-south strategic corridor. 2003 is the year in which the SDIR will be deployed throughout the country. This will be acknowledged by the *Premières Rencontres Nationales de l'Information Routière* – a national road information meeting to be held on 19 and 20 March 2003 in Paris. ●

(Source: Didier Colin, Deputy Assistant Road Operation and Safety Director, Department of Road Safety and Traffic, Ministry of Public Works, Transport, Housing, Tourism and the Sea.)

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Innovation and road safety

Occupational road risk prevention

The considerable development of travel, especially by road, increases road risk for people who drive as part of their work.

Not only company employees but also independent artisans and professionals spend much of their working day behind the wheel, either for professional assignments or for commuting. Therefore, because they are road users, the working population are exposed to traffic hazard for the purposes of their work.

1,194 people died on the roads in 2001 in a professional context.

16% of traffic fatalities are thus the result of on-the-job road accidents (source French Road Safety Agency – 2001 report).

1,337 work accident deaths were recorded in 2001 among employees, and 827 of these, amounting to 16%, were due to road accidents (source CNAMTS – 2001).

Road hazard is now by far the leading cause of fatal road accidents during work.

Furthermore, these accidents are much more serious than other work accidents (they account for 15% of lost working days, which amounted to nearly 34 million hours in 2001).

Road accidents, besides being a human disaster of for staff and/or fellow-employees, also have a considerable economic and social



Road risk is a corporate challenge.

cost for businesses:

- In terms of direct costs resulting from the increase in insurance premiums for the vehicle fleet and social security contributions for work accidents;
- But above all, in terms of indirect or induced costs (which are two to three times the direct costs): impact of absence from work, business loss, delivery delays, psychological repercussions on employees, deterioration of the social climate, temporary (or permanent) loss of skills. Besides these costs, which are difficult to evaluate over the short term, the company image may be adversely affected.

Road risk control and prevention in the business context has been a major focus area of governmental work for a number of years, for which clear objectives were fixed by the last CISR² meeting held on 18 December 2002 and chaired by the Prime Minister:

- Increase the importance given to occupational road risk by treating it as a professional risk and defining in-company prevention methods by industry-wide agreements;
- Develop incentives, particularly of a financial nature, to enable this risk to be better taken into account by companies;
- Ensure that governmental departments set the example by including in their road risk plans the installation of specific safety equipment on new vehicles, such as speed limiters and pre-accident status recorders.

Governmental action (by the Interministerial Road Safety Delegation) takes a number of forms:

- An institutional partnership with CNAMTS, formulated by an agreement and an action programme;
- Close partnership with insurance companies which are key prevention influencers of their business clients, particularly under the State-Insurance Company national agreement;
- Partnership with GP2R, a group of companies working in the road risk prevention field;
- National charters signed with large companies or federations of companies, requiring a commitment to reduce accidents and encouraging them to join forces in an association, PSRE³, which aims to encourage exchanges of experience.

The creation of an occupational road risk prevention plan, whether by the private sector, public sector or an administration, is an overall initiative involving:

- A motivated, well-informed work team of the company staff concerned (Management, human resource manager, safety supervisor, vehicle fleet manager, occupational health manager, CHSCT⁴, personnel representatives);
- The Management's readiness to undertake this risk prevention along with the other occupational risks;
- The employees' support for the project.

The main stages are as follows:

- A preliminary diagnosis that will ascertain road trips, analyse mission and travel accidents in recent years, assess the economic consequences on the company, analyse the actual driving conditions and analyse travel management.
- Implementation of a targeted action plan, consistent with this diagnosis, on areas such as in-company management and communication, travel organization, driver retraining, vehicle maintenance and equipment, commuting, access to the company and to a car park, and relations with customers and suppliers.

- Programme monitoring and assessment by setting up relevant indicators and integrating road safety measures into the day-to-day prevention procedure.

(Source: Michel Martineau, Task Officer for National Partnerships, Department of Road Safety and Traffic/Interministerial Action Branch, Ministry of Public Works, Transport, Housing, Tourism and the Sea)

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1 CNAMTS: Caisse Nationale d'Assurance Maladie des Travailleurs Salariés (national health insurance fund for salaried workers).

2 CISR: Comité Interministériel de la Sécurité Routière (interministerial road safety committee).

3 PSRE: Association pour la Promotion de la Sécurité Routière en Entreprise (association for the promotion of occupational road safety).

4 CHSCT: Comité d'Hygiène, de Sécurité et des Conditions de Travail (corporate committee for health, safety and working conditions).

Innovation and road safety

Road safety: a major challenge for the Colas Group

The Colas Group, the world leader in road construction and maintenance, is closely involved in road hazard prevention. Its innovation policy for safety products and equipment regularly extends the range of tools available to road authorities. But the Group's new provision of road safety services may be less well known. For a number of years, it has also been implementing an active prevention policy targeted at its own staff. All these measures form part of the Group's overall citizenship approach to safety of both staff and third parties.

Innovative products and equipment

Together with quality and the environment, safety is a strong priority of the Colas group's research and development policy. Innovation is a continuous concern for pavement surfacings and safety equipment. Some examples are:

- Colclair® coloured surfacing, in its "tunnel" version, which considerably enhances lighting contrasts and efficiency;
- Colgrip® highly efficient skid-resistant surfacing, able to reduce braking distances by 30 to 50%;
- Safety barrier end devices and crash cushions;
- Temporary, permanent or mixed modular protection devices, and the simplified transposition machine for temporary modular units;

- The median bypass (ITCP) which won the contest held by ASFA (French Motorway Companies Association) and DSCR (Department of Road Safety and Traffic), five of which have been sold in France and more than 200 abroad;
- Variable Message Signs with high optical performance;
- Surface marking products visible at night in wet weather.

New services

Changes in customer demand have led Colas to go beyond its product and equipment developing and manufacturing activities to provide an "after-sales" service. This includes worksite signs, for which the Group is now entrusted with package assignments for the management of worksites under traffic: advance warning signs, road signs, major traffic guidance equipment, installed equipment monitoring. And for emergency services, a branch of Somaro, the Group's traffic sign subsidiary, has introduced an innovative service, "Line 5", a phone line that provides customers with a correspondent 24 hours a day, seven days a week, who ensures that they receive a response, within an agreed time, for emergency or even crisis situations encountered in the road or motorway network.

It is through a strong service culture among staff of the subsidiaries that these solutions have been developed and the corresponding responsibilities assumed.

An active prevention policy

For many years, the Colas Group has been working steadily to improve occupational accident prevention on its 90,000 yearly worksites. A safety component is mainstreamed into all quality approaches, for every other fatal occupational accident is a road accident, which justifies the emphasis placed on road prevention. In 1997, Colas signed a Road Safety Charter with the Interministerial Road Safety Delegation, by which the Group undertook to reduce the number of road accidents involving staff liability by 25% in 3 years. In 2001, the charter was renewed, with a fresh objective of further reducing this number by 5% in 3 years. These objectives have been exceeded, as over the past 5 years, there have been 33% fewer Colas road accidents whereas the road and site vehicle fleets have increased by 43% over the same period. These results have been achieved through the implementation of a field action and prevention programme in conjunction with an emulation system encouraging subsidiaries and establishments to multiply initiatives. This has consisted in non-stop training and awareness-raising (safe driving training, first aid training,

Median bypass (ITCP) on the A21 motorway (Italy).



organization of 15-minute safety sessions, driving audits, training using simulation software, demonstrations in partnership with the gendarmerie, distribution of breathalyser tests, etc.), enhanced by exchanges of experience and a best practices target internationally tailored to the local context.

"We at Colas must develop individual responsibility ethics behind the wheel," Alain Dupont, Colas CEO, recently declared to 350 "Road Safety Relay" staff assembled for a convention, "because the road must not be a place to kill but a place to live." ●

(Source: Michel Démarre, International Affairs Adviser to the Chairman, Colas)

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Innovation and road safety

Cold recycling – hot recycling: promising techniques for roads

The roadbuilding industry is a heavy consumer of high-quality aggregates. There are three compelling reasons for optimizing their use – resources are not unlimited, environmental constraints are increasingly tight for opening and working quarries, waste disposal is becoming steadily more strictly regulated and its cost is extremely high.

On analysis, the biggest high-quality source of aggregates is the road itself. Therefore in the interests of sustainable development, the aim must be to use this resource wisely. A good answer for these materials is provided by cold and hot recycling techniques which consequently deserve to be developed extensively in the road industry.

Cold mix recycling

This process can be used for all types of existing structures: flexible pavements, bituminous pavements, semi-rigid pavements and cement concrete pavements. There are two ways to recycle an existing pavement:

- **Plant recycling**
After removing the old material by cold planing, it is processed through a mix plant to improve its mechanical characteristics by correcting the grading and including additives and binders. By controlling the in-plant mix production parameters, this technique ensures very good regularity of the performance that has been established by laboratory studies.
- **In-situ recycling**
The aim is to use an old, damaged pavement to recreate a stable, homogeneous structure. This is done by in-situ recycling of the existing materials with the possible introduction of additional materials, thereby producing a new road foundation.

However, some precautions must be taken if this technique is to be

successful.

For both techniques, the materials are processed with hydraulic or hydrocarbon binders. In the past few years, composite binders have become available, which combine the advantages of the previous binders without their disadvantages.

Hot mix recycling

This process usually consists in the re-use of old asphalt pavement layers whose characteristics have been deteriorated by traffic or ageing of the bitumen, or through delamination of the pavement layers. Here again, two systems are available for hot mix recycling:

- **Recycling in a static or mobile plant after removing the old materials by cold planing.**
The mix is then transported to the plant storage area where the planings are graded and sieved and then introduced into the mix plant in varying proportions. The quality of the product thus obtained is the same as that of a new product. The recycling rate is 10 to 25% for traditional plants and 20 to 35% for drum mix plants. It is important to conduct the mix design study as carefully as possible to optimize the mix grading curve and the proportioning of the regenerating binder.
- **In-situ recycling using multi-purpose facilities and three possible processes:**

Hot replaning to reprofile a bituminous pavement that is deformed or has poor surface characteristics, by heating, scarifying, shaping and recompacting with no mix removal or overlay.

Repaving to reshape a bituminous pavement that is deformed or has poor surface characteristics, by removing the materials by heating and scarifying the surface to a lesser thickness and then installing a new mix layer.

Hot in-place recycling by heating, scarifying the surface, mixing with filler and the required correctors and re-laying the mix. This is the only process that enables the entire old mix to be re-used. Today's highly-efficient equipment can treat all types of mix, even porous asphalt, with good results.

With good preliminary studies and a technique based on appropriate technical criteria, the recycling techniques currently being used for roads have achieved a quality level on a par with that of new techniques. They will meet the ambitious objective set for roads of "zero stockpiling". ●

(Source: Yves Guidoux, Director of Studies, Setra)

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Hot mix recycling.



Cold mix recycling.



CDI: DEPARTURE AND REPLACEMENT OF ANNE-FRANÇOISE COLAU

Anne-Françoise Colau, librarian of the "Villes en Développement" Documentation and Information Centre, retired on 28 February 2003. In 1972, after seven years in the private sector, she joined the Secrétariat des Missions d'Urbanisme et d'Habitat (SMUH), subsequently the Agence de Coopération et d'Aménagement (ACA), firstly as a cartographer and then as an information

officer in 1983. Since 1988, Isted and its partners have benefited from her skills and the quality of her human relations. She will be replaced by Elodie Lew, document and research officer, beginning 1 April 2003.

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Xavier Crépin (on the left side), Anne-Françoise Colau et Guy Poirier.

ROADS DEPARTMENT: DEPARTURE OF GUY POIRIER

Guy Poirier who has been with Isted since 1997, was Deputy Head of the "Roads" Department and then Head of the Department since the departure of Jean-Philippe Lanet. At the beginning of March, he will be posted to the Malagasy Ministry of Public Works as Road Maintenance Adviser. Armand Der Stepanian, ITPE, formerly with the Ministry of Justice, succeeds him as Deputy Head of the "Roads" Department.

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ANNIVERSARY OF ISTD

For the 21st anniversary of Isted and the retirement celebration of Jean Smaghe, former President

of Isted, Xavier Crépin, Executive Manager, invited senior partners and friends to a gathering with the new President, Jean-Didier Blanchet. On this occasion, Jean-Didier Blanchet presented the new Isted policies, which meet three main objectives:

- Make regions and services accessible in the fields of roads, transport and cities;
- Ensure safety of goods and persons;
- Promote regional integration.

The action strategy is based on geographic, sectoral and institutional expansion.

The geographic focus areas are determined according to the Isted sectoral priorities:

- Transport: Sub-Saharan region, Central and Eastern Europe and the Mediterranean Basin;
- Roads: North Africa, Sub-Saharan Africa, Central Europe and Asia;
- Cities: Africa, South-East Asia, the Mediterranean Basin, the Caribbean and Latin America.

Sectoral expansion particularly concerns tourism, civil aviation and environmental hazards. Institutional expansion is focused in three new directions:

- Monitoring European calls for proposals;
- Organizing collaboration with local authorities for decentralized cooperation;
- Strengthening activities with the Ministries of Public Works, Foreign Affairs, Research, Ecology, and Industry.

Isted's competencies will be shared between the public and private sector, to respond to the expectations of its members and partners and the changing international development aid context. Isted's support measures, based on subsidiarity, transparency and partnership, will be enriched by pooling strengths and working in association with some of the members in a common interest.



Mr Smaghe and his wife.



Many partners and friends were present.

SOGREAH: A NEW ISTD MEMBER

Sogreah is a group of consultants specializing in planning and the environment for the following missions: Consultancy, diagnosis and expert appraisals;

- Preliminary studies;
- Design studies;
- Project engineering;
- Assistance to project owners;
- Laboratory facilities;
- Training.

For further information on Isted members, you can visit our Website at the following address: <http://www.isted.com>

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NEW WEBSITE FOR THE DEPARTMENT OF LAND TRANSPORT



This new website presents the activities and missions of the Department of Land Transport and addresses transport in all its dimensions.

It caters for the general public, professionals, local authorities and students.

The website is organized by target audiences and main activities. Five sections cover the main themes:

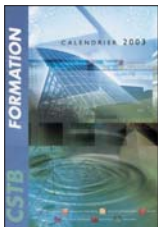
- passenger transport;
- freight transport;
- transport sector social issues;
- transport in Europe and worldwide;
- transport and the economy, energy and the environment.

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Training

CSTB: TRAINING 2003



CSTB Formation (Scientific and Technical Centre for Construction) has released the 2003 training calendar. It proposes 50 sessions enriched with 10 new courses in the following areas: products and techniques, pathology and renovation, regulations and standardization, acoustics, quality, environment and health, simulation.

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Publications

PREDIT 3 WORK PROGRAMME: 2002 – 2006 ACTIVITIES



Predit is an interministerial land transport research and innovation programme. It is a platform open to a wide range of actors, which generates public-private sector cooperation, and regional, national and European initiatives. The Predit 3 work programme, published on 26 February, was presented at a briefing in the presence of Maxime Bono, MP, Mayor of La Rochelle and President of Predit 3. This programme sets out research aims and priorities for the five-year programme together with practical implementing arrangements. It aims to inform the general public and enlist the support of companies, research centres and local authorities, etc. involved in this sector. Its publication is the result of a year's work that has also enabled the first projects to be launched: eight calls for proposals now closed, 600 proposals examined, 200 projects already with a label of approval and four more calls for proposals in progress.

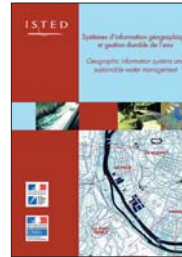
The third edition of Predit (2002 – 2006) is intended to meet three public policy objectives: ensure sustainable mobility of persons and goods, improve safety of transport systems, enhance the environment

and contribute to greenhouse gas reduction objectives.

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GEOGRAPHIC INFORMATION SYSTEM AND SUSTAINABLE WATER MANAGEMENT



This document, drawn up for the Third World Water Forum in March 2003 in Kyoto, is the result of a partnership between Isted, Cnig (National Council for Geographic Information) and Drast (Directorate of Research, Science and Engineering), Ministry of Public Works, Transport, Housing, Tourism and the Sea (METLTM). It is a collection of case studies of French experiences in geographic information systems applied to water management. This publication is intended to be disseminated widely to foreign partners as it is a tool for the promotion of French knowhow in this field.

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VILLES EN DÉVELOPPEMENT

The latest *Villes en Développement* bulletin is devoted to "Cities and New Information and

Communication Technologies". The editorial of this issues, written by Jean-Pierre Dufay, Vice-President of the Isted "Cities" Department, covers NICT development as a factor of exclusion or integration for human development. This issue includes four articles:

- Role of the Municipal Development Partnership in promoting new information and communication technologies in African local authorities.
- Geographic information, a new strategic challenge.
- Information and communication technologies vs development.
- Lille Métropole-Rio de Janeiro decentralized cooperation: new technologies at the service of the economy of solidarity and environmental management.



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SEFI 2002: INTERNATIONAL FRENCH CONTRACTORS

The annual members' brochure of SEFI, an association with a membership of the 13 leading French companies involved worldwide in the building and infrastructure sector, is just out. The first part of this brochure addresses themes such as the environment and sustainable development, ethics and the spirit of

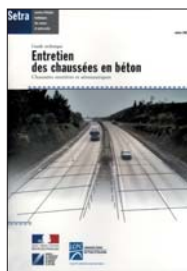
innovation. Public-private partnership issues are also addressed. The second part is devoted to a detailed presentation of the SEFI companies. The full document will shortly be available on the SEFI website.



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**TECHNICAL GUIDE
CONCRETE PAVEMENT
MAINTENANCE**



SETRA has just published a technical maintenance guide for concrete pavements of roadways and runways.

This guide presents a methodology for the design of maintenance and rehabilitation work on concrete pavements of roads or runways.

It covers:

- A history of concrete pavements in France;
- An inventory of characteristic distress in rigid pavements and its main assumed causes;
- An inventory of measures according to distress recurrence frequency;
- Work solutions to be scheduled;
- A brief description of measuring equipment and maintenance techniques.

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**INTERMAT 2003:
WORLD RENDEZVOUS
OF CONSTRUCTION
PROFESSIONALS**



The Intermat international exhibition of equipment and techniques for the civil engineering and construction industries will open its doors from 13 to 17 May in Paris-Nord Villepinte.

Intermat 2003 hosts:

- A 320,000 m² exhibition area;
- 1,500 exhibitors, 80% of whom come from 35 foreign countries;
- 7 national pavilions: Finland - China - Spain – United States - Italy – Great Britain – Korea;
- A full, varied supply from sectors including earthworks, hoisting, components and accessories, boring, crushing, concrete, building-scaffolding-formwork, materials treatment, services, data processing, and the new technologies.

Two sectors be in the spotlight:

- Roads: Halls 3 and 4. With all the road contractor companies (construction, maintenance, traffic signs, winter service, etc.) and a "Road Village" that will host a series of conferences on

technological, economic and environmental issues, given throughout the exhibition.

- The environment in the building and public works sector: Halls 3 and 4 with an "Environment Village" that will present all recycling and pollution prevention equipment and solutions. Conferences will address the environmental constraints acting on this sector's contractors and the solutions available to them.

Intermat 2003: major developments

- The building sector: Hall 5A, with MECABAT, animation dedicated to the mechanization of small and medium-sized building sites: exhibition, multi-screen projection, panel sessions on health and safety on the worksites.
- Venue: Hall 6 with the presence of the entire plant hire sector. From small and medium-sized enterprises and industries to "full-liners" and leading plant hire firms.
- Concrete: Hall 5A and outside Hall 4 with a full display of ready-mix and pre-cast concrete.

Earthworks, hoisting and handling equipment will be presented in a real worksite context over a 30,000 m² demonstration area.

For Intermat 2003, Isted will have a stand in Hall 4 (4A014) in which we will present our activities and welcome our members.

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