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## ROSY® ELEMENTS

RoSy incorporates a number of tools for planning within the highway sector. The individual elements of the program are interactive so that the user sees the whole as one entity.

## ROSY® BASE

A reliable, capacious and flexible road database - RoSy will store "hard" data from the road network and "soft" information such as descriptive text as well as pictures.

## ROSY® PLAN

This is an optimising module, the core of RoSy PMS. On the basis of information from RoSy BASE or another relevant database, and the quite unique dynamic deterioration models of the system, the module is able to calculate the optimum maintenance requirement for a whole road network and for individual road sections. In addition, it is able to calculate and document the consequences of inadequate maintenance resulting from, for example, too low a budget. The possibilities of selecting the degree of detail and forms of presentation are almost infinite. And of course can be selected by users themselves.

A further feature is that a choice can be made between different types of optimisation models, depending on which type of road network and maintenance financing the system is to be used for. In its calculations, the program presents useful factors such as IRR (internal rate of return), NPV (net present value), B/C (benefit/cost). Transport costs are included, in accordance with the standards set by the World Bank in its models HDM-III and the new standard HDM-IV.

## ROSY® DIG

This is a system for implementing and administering digging on the road network, including the issue of digging permits and subsequent control.

## ROSY® DESIGN

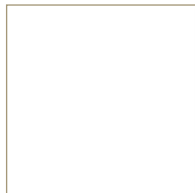
On the basis of bearing capacity measurements made, by a falling weight deflectometer for example, this system calculates strength moduli (E-moduli) for the individual layers in the road construction. It can, on the basis of information on coming traffic load, also calculate which layer in the construction is weakest, residual life, and possibly necessary reinforcement.

## ROSY® MAP

RoSy MAP is supplied fully integrated in RoSy. This means that work can be performed direct in RoSy databases, and also that with RoSy it is possible to work interactively with GIS. In other words, data can be filtered and combined so that different themes and contexts - together with the results of calculations made in RoSy PLAN - can be presented graphically. For example, it is possible to show where new highway paving will be necessary in the coming years, and what the costs will be for a given road.

The fact that RoSy is an open system allows RoSy to work fully integrated with all GIS systems such as MapInfo, ArcInfo and Intergraph.





## ROSY ROAD SYSTEMS

- the world's most widespread software for Pavement Management

## WHY STRATEGIC MAINTENANCE?

### OPTIMUM ROAD MAINTENANCE DEMANDS EXPERTISE AND WIDE KNOWLEDGE

In the industrialised countries the task is most often to establish a maintenance programme for the overall road network; a programme that will maintain desired road standards at the lowest possible cost. Thus, from the point of view of the highway authorities and taking immediate financial interests into account, the focus is solely on road operating economy.

For the developing countries the task is usually more complicated. Here the infrastructure is less adequate and, relatively speaking, transport costs are significantly higher than road maintenance costs. Higher road standards could therefore have a dramatic influence. Transport costs would fall, with a subsequent positive effect on the national economy.

## WITH ROOTS IN MANY YEARS OF EXPERIENCE

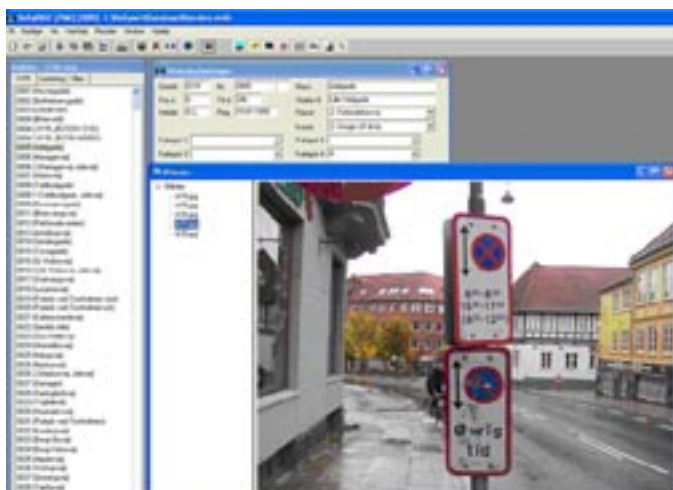
### ROSY® PROGRAMS FOR PAVEMENT MANAGEMENT: THE MOST WIDELY USED

RoSy programs are used every day to plan and control road maintenance in nineteen countries: from wide motorways to narrow byways; from the complicated street network of a West European capital to the main road systems of the transasiatic road corridor, in a geographical area larger than the whole of Europe.

RoSy programs are based on many years of experience in practical road maintenance and work on road surfaces at both practical and theoretical levels. In close cooperation with highway and city authorities in many countries, Carl Bro Pavement Consultants combined this background with high-technological knowledge of software development. The result was a program package that long ago surpassed all theoretical conceptions of how a pavement management system could be built up. For many years, RoSy has indeed been turning “dreams” into reality.

## TRIED AND TESTED FROM THE ARCTIC TO THE TROPICS

The RoSy platform is so flexible that it can be adapted to meet the widely different requirements that various climatic regions impose on a pavement management system. In Southeast Asia for example, there is little use for the tables and calculation variables for studded tyres and road gradients and cambers that apply to lands of the midnight sun. Carl Bro Pavement Consultants has experience from the entire climatic spectrum and RoSy handles all variations.



All programs in RoSy are based on recognised software standards and a Windows platform. Visualisation from a Danish version of RoSy



RoSy also offers integrated, interactive GIS solutions. Example of salting routes in Norway



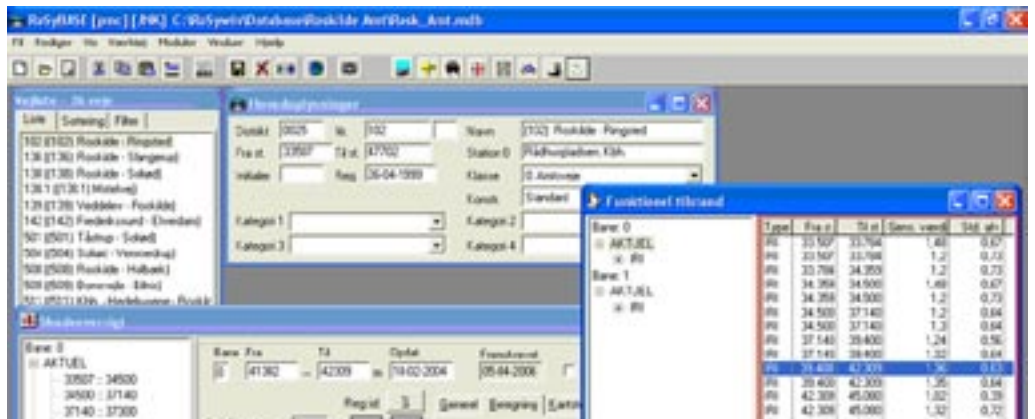
**OPEN WINDOWS  
SOFTWARE STAND-  
DARD**

All programs in RoSy are based on recognised software standards and a Windows platform. The programs are very flexible and can be run under MS-SQL, Oracle or Access. The correct solution depends on what the customer wants and of course on cooperation with customers.

Adaptation to local conditions and standards Carl Bro Pavement Consultants long ago recognised the fact that road maintenance should not be standardised across every border of every country; that local methods, materials, cost structures and road building traditions have to be considered. Therefore, adaptation is an integrated part in the implementation of every RoSy system.

In a similar way, frameworks are so flexible that data collection methods, etc. can be adapted to local requirements and existing routines. Furthermore, existing road data can always be imported and used on a RoSy platform

**ROSY IS APPLIED  
FOR ADMINI-  
STRATION OF ALL  
SORTS OF ROADS.  
FLEXIBILITY IS THE  
KEY WORD**



**FACTS ABOUT ROSY**

In Vietnam Carl Bro has installed 180 RoSy versions in as many regions. The project started in 1999 with 20 versions. As this project turned out as a success the system has now been implemented all over the country. In India RoSy is applied for more than 7000 km motorway and 7000 km main roads. In Europe RoSy is applied in Iceland for among others the state road network and Reykjavik Municipality, in Norway approx 40 of the largest municipalities, in Sweden approx. 20 municipalities are applying RoSy. In Germany the system is applied by 180 municipalities, cities and districts, in the Czech Republic RoSy is applied for the entire road network. Furthermore the system is applied in countries such as Portugal, Greece, Ireland and Macedonia