

Rubicon Newsletter

September 2011

Alert: Name Change

Effective September 2011, our company name has changed from Modelling and Analysis Systems cc, or MAS, to Rubicon Solutions. This name change was brought about because we are better known for our Rubicon Toolbox software than as MAS. We often find that when we introduce ourselves as MAS we are not recognised until we mention Rubicon!

As Rubicon Solutions, we will continue to provide the same good services, prompt responses and efficient resolutions to your software queries. Note that our email addresses and website details have changed, although all the old emails still work.

Rubicon Toolbox: New Release, Version 2.9.8

The latest version of Rubicon Toolbox, 2.9.6, has been uploaded onto our website. This release mainly involves bug fixes and relatively minor improvements. A list of modifications to the program is given below. We advise you to install the upgrade. After an update, all your old templates and analyses will open and work just like they did before. After installing, please open Rubicon Toolbox and a few tools to check everything is working. If you run into any problems running the upgrade, please contact us.

Comments on Installations and Upgrades

The latest versions of the Microsoft Windows operating systems are throwing us some curve balls! Please note the following:

- Many new computers, especially those running Windows Vista or Windows 7, do not allow the **automatic updates of the settings database during the update process**. This is because Microsoft has tight security settings that do not allow databases to be updated. However, there are other ways of updating the database for Rubicon. The easiest way is to import the new settings from within Rubicon. Instructions for the various ways of updating the database are included in a document zipped with the Settings Database on the Downloads section of our website.
- When installing or upgrading Rubicon Toolbox on a **64 bit operating system**, it is necessary to change the default search location to C:/Program files to C:/Program Files (x86). This is to ensure Rubicon Toolbox still works off a 32 bit system.

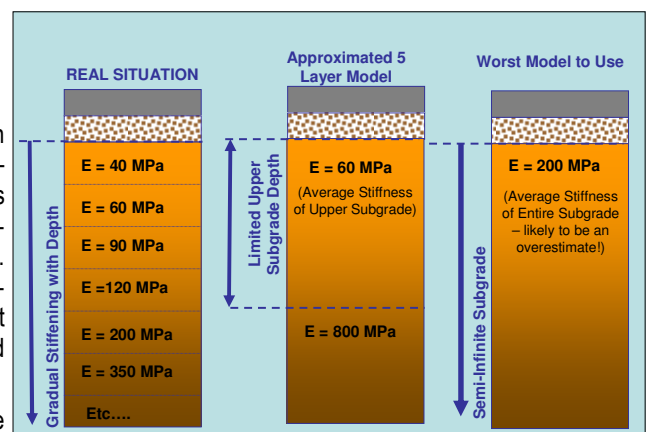
Some Comments on Backcalculation

How the subgrade is modelled in backcalculation has a significant effect on the results. The adjacent figure illustrates that the real situation in a pavement structure is a gradual increase in the stiffness of the subgrade. It is difficult to include many subgrade layers with increasing stiffness in backcalculation because too many variables need to be resolved using a few inputs. For forward design calculations, we typically assume the subgrade is semi-infinite (model on the right). This is not a problem for forward calculation, but it is the worst model for backcalculation, and often results in the base and subbase stiffnesses being underestimated.

For backcalculation in Rubicon Toolbox we recommend accounting for the subgrade by dividing into two layers (middle figure). The upper subgrade represents the average of the stiffness gradient in the upper part of the subgrade. The lower layer stiffness represents the average of the rest of the subgrade to the center of the earth! While this average may not be accurate, it is not important for backcalculation. The upper subgrade should be between 800 and 1500 mm. This ensures that the layer is thick enough to influence the deflection bowl, and thin enough to still provide a good representation of the subgrade just below the pavement. The lower subgrade is a semi-infinite layer. This leaves 3 layers with which to model the pavement structure above the subgrade.

Brief Summary of Modifications to Version 2.9.6

- The **Data Viewer** can now import data from Microsoft Access 2007/2010 (.accdb) files, as long as Access 2007 or 2010 is installed on the computer. If Access 2007/2010 is not installed, and the database is setup on another computer, simply save the database as .mdb rather than .accdb and it can then be used by the Data Viewer. Note that the Data Viewer talks to .mdb files even when Access is not installed on the computer.
- The **Trial Pit Report** can now handle single long, layer descriptions for each layer.
- The long wait when **opening Microsoft Excel 2007/2010 .xlsx** files seems to be improved with this version on some computers. Please let us know if you still need to be very patient!



Analytical solutions for the road building industry

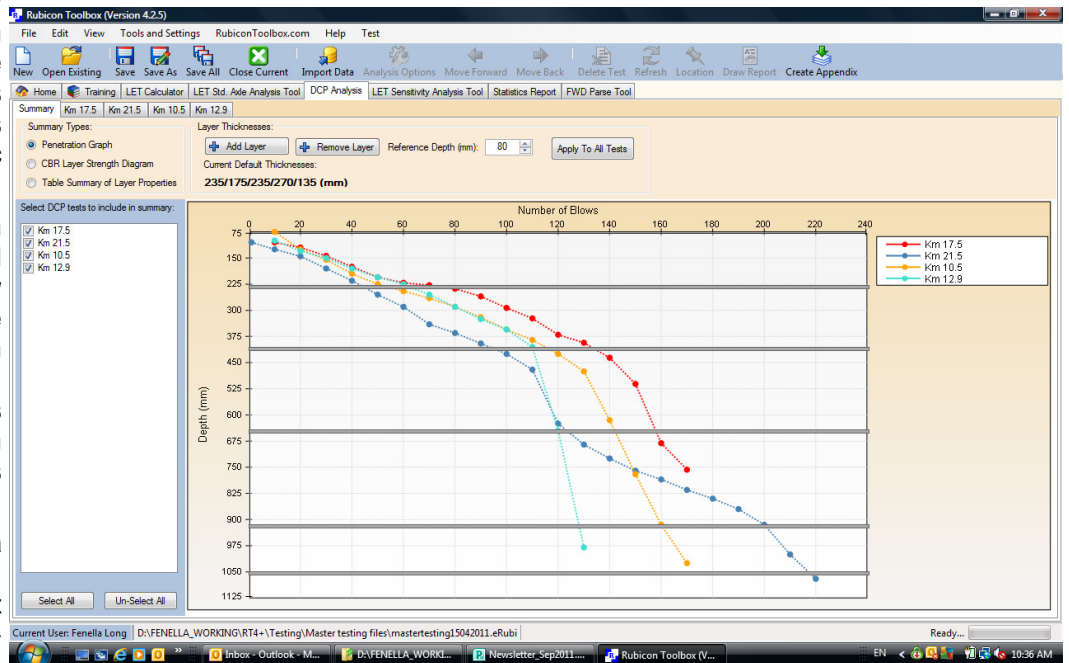
- Software solutions
- Training and technology transfer
- Applied research
- Specialised consulting

Rubicon 4+, the Next Generation Software

We have started working on the next generation of the Rubicon software, called Rubicon Toolbox 4+ or "Rubicon 4 plus". This software is web-enabled and runs on the Microsoft .NET 3.5 platform. Rubicon 4+ is similar to the current version of Rubicon Toolbox in that it will consist of several tools relating to reporting, design and analysis. So far, the DCP Tool has been re-coded, and the new version includes many improvements and enhancements we identified in the last few years. The Standard Axle Tool, a Layered elastic (LET) Calculator Tool and a LET Sensitivity Tool are also already included. Some LET Tools can now use up to 12 layers. The new version has many surprises in store, including the Statistics Reporting Tool and Fuzzy Logic Tool.

An essential element of Rubicon 4+ is web-based training and help functionality. With the new version, training videos will be available on-line and a question and comment facility is included. A bugs and suggestions log is also available, and you can check whether your log items have been attended to.

If you are interested in being a Beta tester for Rubicon 4+, please let us know. We expect to release Rubicon 4+ for general use sometime in 2012.



Training

Our 2011 training program is well under way. The remaining CPD accredited courses for this year are:

- Rehabilitation Analyses: 10 & 11 November, Pretoria
- Pavement Design: 27 & 28 October, KwaZulu-Natal

For information on the courses, check the website or contact us.

Comments, Suggestions and Support

To ensure Rubicon Toolbox continues to meet your needs, please communicate your ideas, questions, suggestions and, of course, bugs with us! Remember that if you pay your maintenance, we are an email or phone call away from answering any software queries. We welcome any interaction with you!

If you email us an error message, please provide some details on which tool you were working in and what you tried to do that triggered the error.



Our News

- Fritz Jooste, Arno Hefer and Fenella Johns recently attended CAPSA 2011 in the Drakensberg. It was great to have Fritz back in South Africa and to see so many of our clients and connect face-to-face again.
- Fritz Jooste continues to work on pavement management systems and deterioration modelling for the TRAC N4 and N3TC networks and similar networks in New Zealand.
- Arno Hefer's involvement in the Revision of the South African Pavement Design Method continues, currently focusing on field testing related to HMA performance.
- Arno has completed the COTO guidelines and official release is pending, awaiting final review of the COTO committee. The guidelines are similar to the Roughness Guidelines released in 2007, and include Skid and Texture Guidelines, Deflection Guidelines, Rutting Guidelines, and GPS and Imaging Guidelines.
- Fenella Johns has been presenting courses on the Material Classification System and Pavement Number Design Method for the Asphalt Academy and SARF. For information on the practical one-day course, see the SARF website.
- Fenella is editing the compilation of the South Africa Pavement Engineering Manual.
- Arno and Fenella are active in specialist consulting work.
- Marlou Bredenkamp deals with all our administration, including maintenance management, new software purchases, course planning and registration, and invoicing.



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