

Welcome to NRG V 2011

Mr Gates and his associates have managed to keep us on our toes again with the release of Vista although interestingly enough many of the problems have gone away in windows 7. Thanks Bill

Motorway Madness

A number of major construction projects have also kept us very busy this year. The M25 widening is a very large project involving some very complex engineering and they have adopted our software for assisting with the design work, calculating volumes, producing setting out information and preparing models for the machine control systems. A lot of additional functionality has been built into the system at their request and should be useful for anyone involved in motorway widening.

Monitoring

Monitoring has gone through a number of major changes for Traylor / Frontier-Kempier JV who are driving a 3.2Km tunnel in Seattle and will be using the software to monitor in excess of 2000 points on a daily basis, clear and concise reporting is essential for the safety and dynamic design of the tunnel

Tunnelling

Tunnelling has undergone many improvements in response to our client Dwyidag in India driving the world's longest tunnel at an altitude between 3053 and 3080 metres and India's longest road tunnel. It is the first time our software has been used in drill and blast tunnelling since NATM became unpopular following the Heathrow collapse. The challenges for the surveyors on the project include a 180KM round trip levelling and traverse passing over the highest motorable road in the world at 5062m to tie the two ends of the 10km long tunnel together.

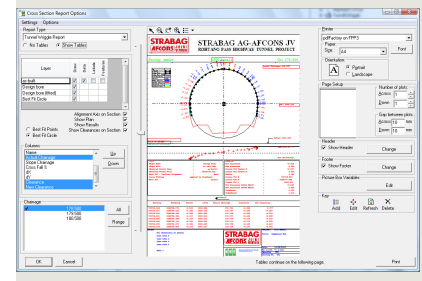
They will be using our software to check the alignment, calculate overbreak quantities and monitor compression of the tunnel.

What's New

The Grid	2
Resection	2
Parallel Lines	3
Complex Isopachs	4
Properties	4
File Open and Save	5
History	5
Cross Section Reports	6
Monitoring	7
Tunnel wriggle	7
Minor Additions and changes	8
Render	8

Keep track of changes using the history log.

New cross sections interface



DTM – Grid

Command	Pt Num	Easting	Northing	Level	Label	Notes 1
1	Coordinate	367356.772	81952.138	15.736	CEM1/ST	
2	Coordinate	367356.621	81952.755	15.710	CEM1	
3	Coordinate	367355.972	81955.435	15.599	CEM1	
4	Coordinate	367355.459	81957.583	15.512	CEM1	
5	Coordinate	367354.330	81962.119	15.322	CEM1	

One of the elements of the software that we hope you don't notice the change is the editors data grid.

We have been planning to update it for some time now but with the release of Vista it became imperative.

The previous data grid was very slow in loading data and in order to get round that we only actually put 75 points at a time in the grid, although we made this invisible to the operator it caused problems in copying and pasting.

The new grid apart from actually working under vista is very much faster, can load all of the database at one go and has very good and seamless links with Excel.

Resection

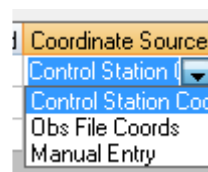
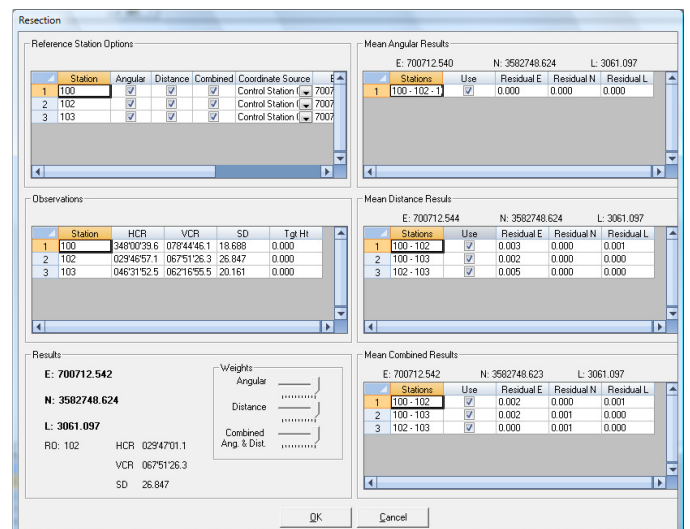
Multi point resections are now handled.

Highlight the station row in the grid and then from the survey menu select recomputed resection

Command	Pt Num	HCR	VCR	SD	Tgt Ht	Label	Notes 1	X	Y	Z
1	Occupied Station = DUMMY 5	e=700712.542	n=3582748.624	l=3061.097	inst H=0.000	DUMMY STN 0		700712.542	3582748.624	3061.097
2	Reference Station = 102	e=700724.894	n=3582770.206	l=3071.216	inst H=0.000	102		700724.894	3582770.206	3071.216
3	Reference Observation	0294701.1	0675126.3	26.847	0.000	102		700724.894	3582770.206	3071.216
4	Observation	0480039.6	0784446.1	18.688	0.000	100/no		700708.735	3582766.561	3064.744
5	Observation	0294657.1	0675126.3	26.847	0.000	102/no		700724.894	3582770.206	3071.216
6	Observation	0463152.5	0621655.5	20.161	0.000	103/no		700725.495	3582760.901	3070.474
7	Observation	0115241.9	0321746.5	20.947	0.000			700713.229	3582763.541	3069.299

Observations to reference objects should be coded with a /ro to tell the system that it is a reference observation and the name should reflect the station name

```
100/ro
102/ro
103/ro
```



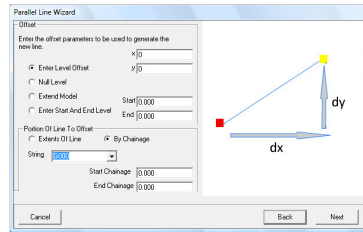
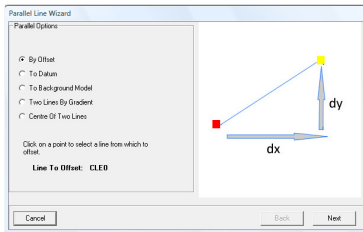
By default the system will match stations names with those in the control file, otherwise they can be stored in the observation file or hand entered

Three types of solutions are computed and these may be weighted or removed from the computation as required

Pressing ok updates the station coordinates and averages the orientation from the observations weighting for distance.

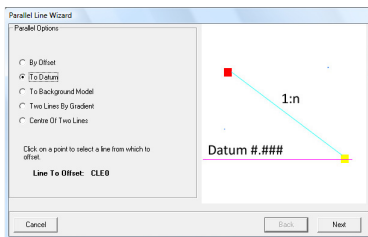
Parallel Lines

Parallel lines has been added to over the years, finally resulting in a complicated user interface so we have changed this to a wizard greatly simplifying it's operation and at the same time we have added some functionality we found lurking in the depths of the wish list.

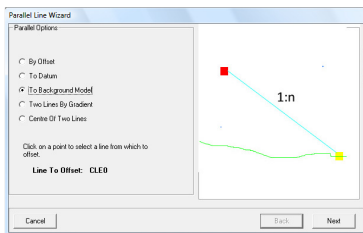


By offset lets you derive the levels by various means, new additions are to interpolate levels from a start and end level and to extend the model to the line.

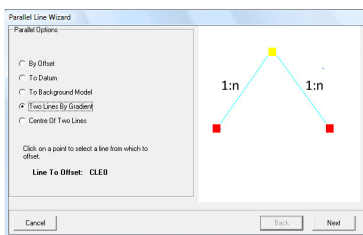
We have also changed it so that you can limit the length of the line by specifying a chainage



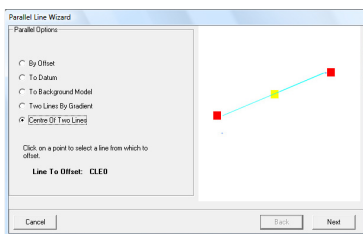
To a datum creates a parallel line by taking a grade from the line chosen and finding the line which intersects at a datum



To a background model does the same as datum but uses a background model as the datum. This is typically used for finding the interface from a proposed model to a ground model. There are a number of further options as you go along such as the ability to extend the ground model where the footprints do not match.



As the picture suggests this will create a new line by entering a gradient from two other lines

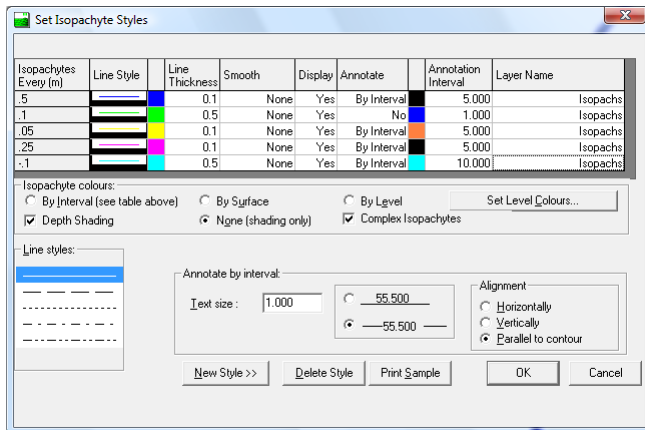


Between two lines lets you create a line on the same grade, find the midpoint or a point at a portion of the distance between

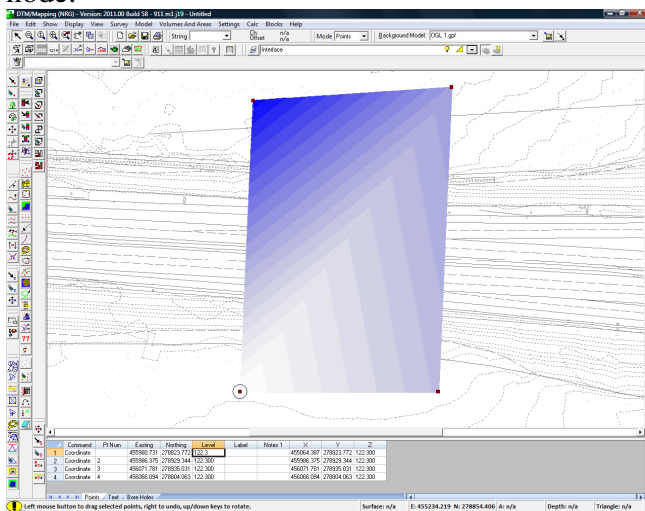
Complex Isopachs

You will now see a check box on the isopach set up form which allows you to use complex isopachs.

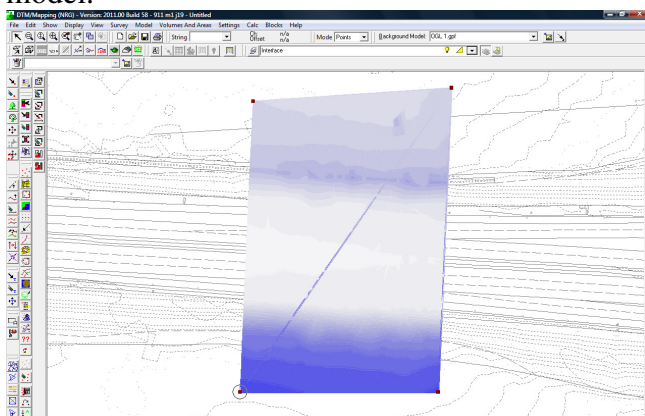
This gives a much more detailed picture than simple isopachs but takes slightly longer to draw



Simple isopachs use just the depth at each triangle node.



Complex isopachs integrate the background model.



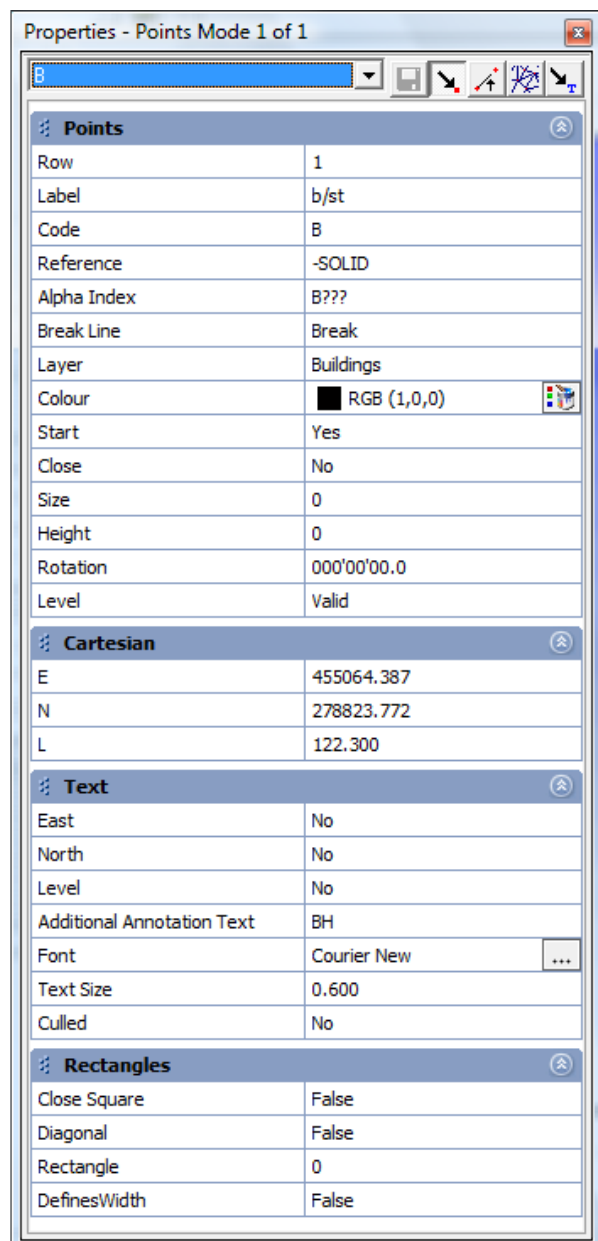
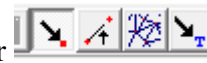
Properties

There is now a button on the CAD toolbar, or you click right click a point and select properties to bring up the properties window



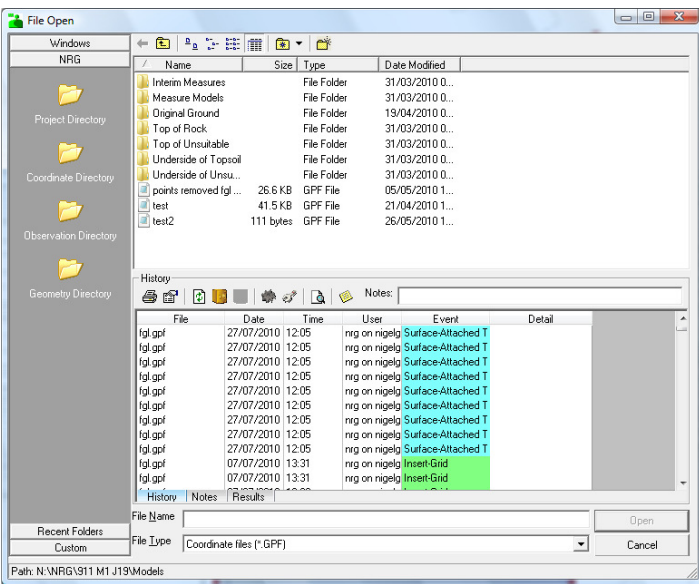
Properties may be viewed and some changed in the properties window.

Select which attributes you want to view using the toolbar



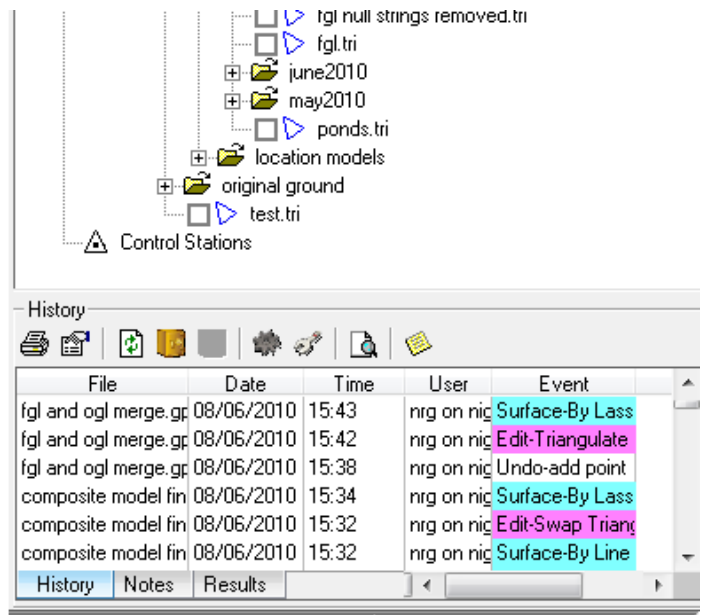
File Open and Save

To make finding and opening files easier we have introduced a new file open dialogue, allowing the user to tab between our default directories, windows directories and a custom tab that will let you specify your own search locations



History *Cont'd*

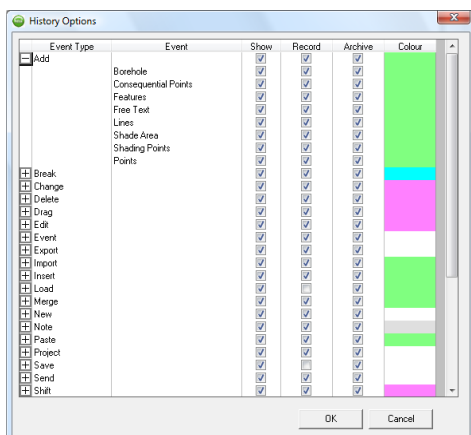
History is displayed in the main NRGWIN screen and displays all files that are within the selected branch of the project tree. Drilling down to individual files or directories shows only those events from that branch down.



History

Tracking has been replaced with a history log. That has been designed to keep a track of all the actions taken within a project.

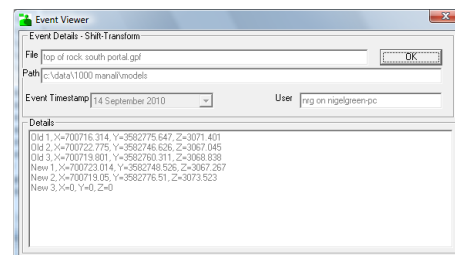
You can customise which events are to be logged and set a colour for different events so that they can be picked out in the report



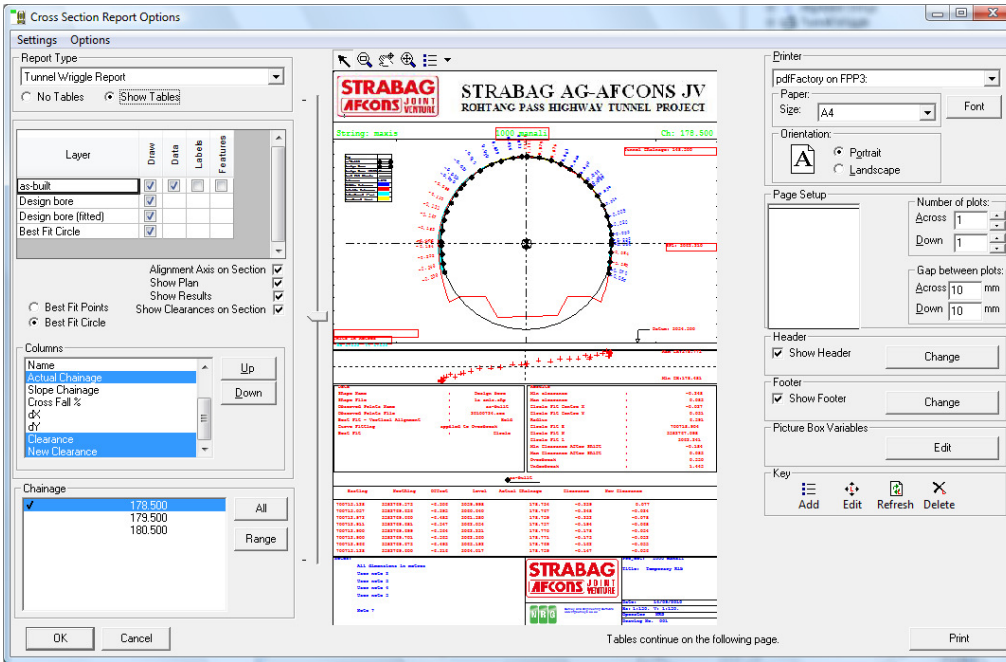
The history display has three tabs, one showing all of the history, one just for notes that have been entered (this is where the old tracking notes have gone) and another tab for viewing the history entries that match the last search pattern

Right clicking on a file in the history log enables you to open that file directly in it's appropriate editor.

Double clicking on an event will bring up additional details about that event



Cross Sections Reports



Improved layout and customizability

Print to DXF / DWG

Print data to CSV file

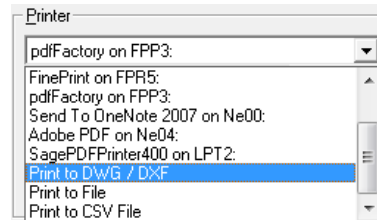
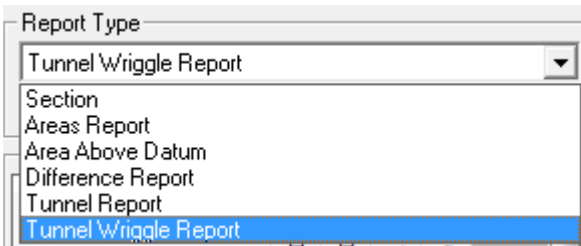
Add pictures, comments and notes.

Accessible from DTM Map's live sections

Printing cross sections has just become much easier, flexible and intuitive.

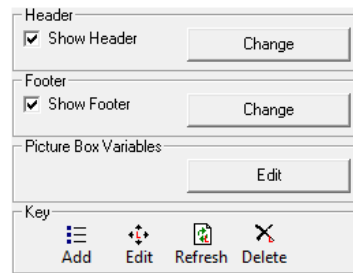
Choose output;

Select from the list of report types.



Customise headers and footers etc

Choose what to draw;

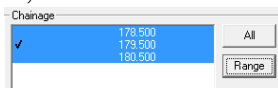


Oh... and then press



And....

Select chainages;

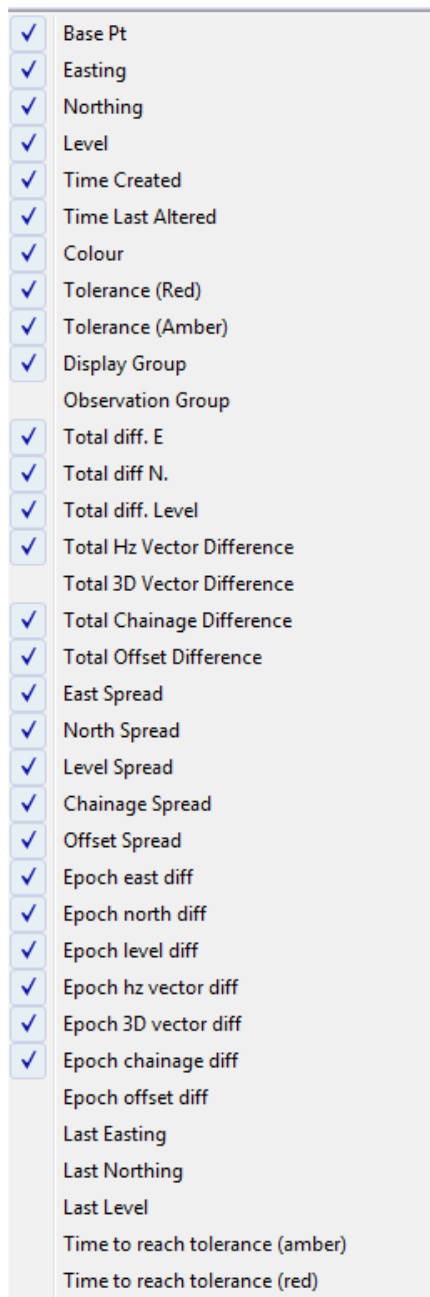


We have added this into DTM Map's live cross sections so you can print directly from DTM instead of having to save the sections and use the cross sections viewer

Monitoring

Monitoring is an ideal tool for maintaining and presenting a record of spatial deformation. It can remotely control any number of robotic instruments streaming the data into the database.

It is very powerful in NATM or SEM tunneling, producing reports that assist the geotechnical engineers in determining the elasticity of the rock they are passing through

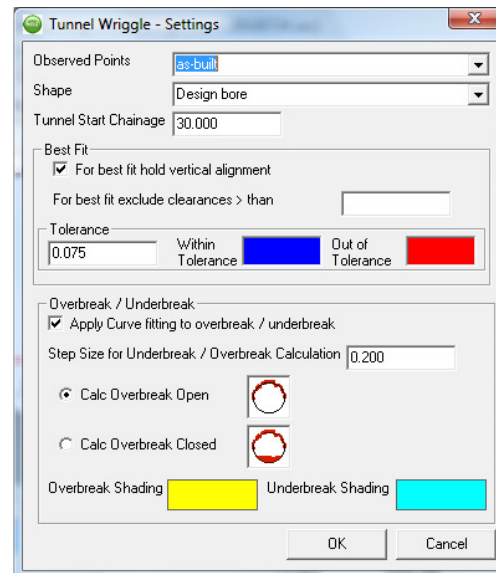


Lots of new columns have been added to the monitoring table.

Tunnel Wriggle

We have now made the tunnel reports accessible directly from cross sections without the need to run a wriggle to make it easier to view single profile.

The tunneling reports have also been updated with the new cross sections printing options and running a wriggle has been made much easier in so much as we have removed the options for the type of report in the set up and just calculate all possibilities anyway and leave you to choose the type of report you want in the print set up.

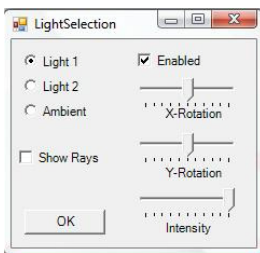
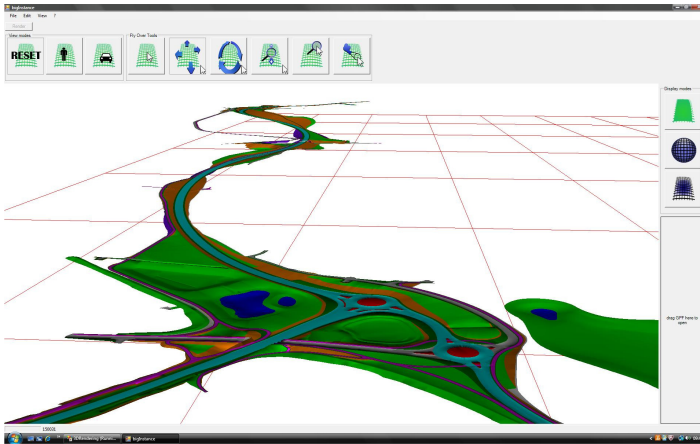


The wriggle settings have changed to simplify the set up and we have also added a few user settings such as the interval for curve fitting on overbreak calcs and a choice as to whether to assume the tunnel is a closed shape or not.

A tunnel start chainage has been added so that you can opt to report the actual chainage of the tunnel as well as the alignment.

Render

Our render package was rendered obsolete with windows vista. We have re-written it though and are currently offering it as a beta release. It doesn't have picture support yet but we are working on that.



The new render interface with improved controls, extra lighting and a walkabout function

There are several other minor changes that you might come across that we have either forgotten about or thought too trivial to mention but keep us informed on how you are using the software and please feel free to let us have your suggestions and comments

User Group

Every year we hold a user group around the middle of September.

This is held over two days in Llandudno where we run workshops and tutorials on the latest aspect of the software.

It is an ideal opportunity to keep up to date with the software and to meet other users, as well as to have your say about new features you would like in the software.

All are welcome, so please join us.

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