

MRG SURVEN SVSTAM FOR WINDOU'S VARSTON G

V 9.0 Available 14th September 2005

Come to the use group in Llandudno on 14/15 September at the Georges Hotel to get demonstrations and tuition with new and old features of the software.

Summary of new features

New

• New Caculator Texas Ti89 with NRG

DTM / Map

- Movement arrows
- Batter rails & profile from DTM sections
- Pile / Void volume
- Export ASCII improved
- Export sections from dynamic sections
- Display legends
- Coordinate transformation
- Print layouts improved
- Change surfaces by dimensions
- Save volume settings
- Select points by CH & offset
- Import DXF improved
- Contour column

Cross Sections

- Show features on section
- Shade areas in section volumes

Texas Ti89 NRG Calculator

Most of you will be aware of our Windows calculator which has proved a huge success over the years and is still going strong. The Texas calculator we've put together in response to the number of calls we get from people wanting a cost effective method of calculating setting out information in the field. It has been approved by Texas themselves and comes embedded on the calculator.

Engineering calculator for setting out and survey reduction







Movement Arrows

Show menu now has new option to display movements from a loaded background model. We use it to give a graphical representation of how displacement is taking place between two surveys of the same points.

For each point in the current survey the software searches the background survey and identifies the nearest point. It then shows scaled horizontal vectors as arrows and vertical vectors as circles.



It is necessary to set the scaling from the display menu, movement arrows. Here you can set the scale of the arrow and the circle in proportion to the actual differences



Batter Rails & Profiles

In DTM Map we have added a function from the live cross sections to calculate batter rails and profiles.



Selecting either of the calc buttons will take you through a wizard prompting for the information it needs, in the cas eof batter rails it will ask for the string nearest to the batter rail for the position and first element of the grade, then the farthest, finish will write the batter rail infor to a table.



Profiles will allow for a separate string to be selected for the offset, then after two grade strings are selected it will offer a more option to select additional pairs of strings for mulitple headed profiles.

The tables can then be accessed at any time and the results printed or exported to a custom file.



Pile / Void Volume



In the past calculating volumes of separate stock piles or holes where no preceding survey had been carried out it was necessary to export the perimeter of the pile/void and make a OGL model from those points to measure against, we've now automated this process so that you simply click on the area containing the pile / void and it tracks around the boundary of that surface and calculates a volume using that perimeter as the OGL.

Export ASCII

In our bid to please all the people all the time we've updated our ASCII export so that you can set up an text file containing just the data you need. Particularly if you want to download to an instrument where the fields such as slope distance and chainage on batter rails need to be visible on limited instrument screens.

Label A	Addiss				T 03. T IGHA	iveg. Fielix	Separator	INUIL OF DIgit	\sim
Easting	the second se	Uffset		0	R	L	None		
Northing	Bemove //	Chainage	С	0			Comma		
Profile Level	Tiemove ((Easting		2		•	Comma		
Chainage		Northing		2		-	Comma		
Offset 🛛 👱	<u>Down</u>	Profile Lev		3		•	Comma		~
①ther separator. Topcon Profiles Profiles Profiles ②ther separator. Test1 Save ③ther separator. Batters Profiles								at e at	
OK Cancel									

First select the items need by adding them to the list. Then you have options to'

Prefix	A prefix for this field
Dec Places	The number of decimal places to be
	used on this field
Pos Prefix	Sets the prefix (rather than +) for
	positive numbers
Neg Prefix	Sets the prefix (rather than -) for
	negative numbers
Separator	Sets the field separator to the next
	field, no separator will allow the
	fields to be concatenated
Num of	Sets the number of whole digits to
digits	be used, counting from the right or
	smallest number.



Export Sections from Dynamic Sections

Following popular request we've now introduced the facility to export sections directly from the dynamic sections window.

Select File from the section window and choose Save As.

If sections are set to being perpendicular to an alignment then you will only be prompted for a section name. Otherwise you will be asked to click on the section to define the point which will be the zero offset. There is also an option here to export the section to a standard .CSV file which is used for hydraulic modelling by some authorities.

诸 Save Long Section					
Click on a point in the section window to set zero chainage.					
✓ Write details to CSV file.	CSV	Change			

You will then be prompted for a string name (if not set to an alignment) and a name for the section, then a layer name dialogue will appear and the section saved.

File Name	
String MCM1	Use existing string Overwrite with new string
Long Section Test	Append existing file
	OK Cancel

To load, edit, print the section, use the sections module.

Note: *This option only operates when a cross sections module is available*

Display Legends

We started something adding legends last year for surfaces and isopachs, just can't satisfy you lot can we. So here's a few more

Isopachyte Shading
Surfaces
Point Features
Line Features
Control Stations
Volume Legend
Area Legend
Contours Legend

To insert a legend from the edit menu select Legends, Insert Legend

Legends		•	Insert Legend 🕩
Arrows		•	Edit Legend
			Refresh
Re-examine Coding	F6		Delete Legend

Point features Adds a table of point features, you choose whether to use all of the features in the library or just those applicable to the current model.

Feature	Code	Layer
	PBEN	StreetFurniture
	PFH	Fire_Hydrant
	PGAS	StreetFurniture
	PGU	Gallies
\otimes	PIC	InspectionCover
	PIS	InspectionCover

Line features As above for lines

Control Stations Adds a table of control stations from the project control stations file

w Legend					
Control Stations Leg Information to Displa	end y:				
Name	^	Add >>	Data in File	Column	
Easting Northing		Bemove <<	Name Easting		
Description			Nothing		
Leveled		Lip Down	Level		
To	Y		Description		
 All Stations from Control File 		 Stations Within Survey Aread 	C State	ions Used is Survey	
		OK C	ancel		

Choose whether to add all stations from the file or just those within the boundary of the survey Legends showing the surface areas or the last volume calculated

Volumes / Areas



Coordinate Transformation

Transforming surveys can now be done in one easy step, select 1, 2, or 3 points on a survey, type in the local values of the 3 points and it will shift, rotate, scale and tilt as you choose.

Existing Coordinates East	North	Level	Ne	w Coordinates East	North	Level	
1. 1009.609	1036.361	98.789	1,	1010.000	1036.000	99.000	
2 988.830	1009.757	95.395	2	989	1010	95.6	
3. 1000	1000	100	3.	1000	1000	100	
	Level shift 0.2	11					
Shift about point 1	Easting shift: 0.3 Northing shift: -0.3 Level shift: 0.2	91 61 11	F	Rotate between	points 1 and 2 Angle	× 000%6'09.6	
🔽 Scale between point:	1 and 2 Scale factor	0.9900608	Gradent E: 1 in 1 Gradent N: 1 in 1				

Contour Column

Now you can change the field which is being contoured, currently we set contours to work against the height – as you would expect. We've found uses, particularly in seismic work where it is more appropriate to contour against a value stored against each point.

Don't worry if you can't see the point to this, at least now you've read this far you'll know it's there one day if you need it.

🖬 Set Contour Styles 🛛 🔀								
Contours Every (m)	Line Style	Line Thickness	Smooth	Display	Annotate		Annotation Interval	Layer Name
.5		0.1	None	Yes	By Area		100.000	MinorContours
5		0.25	None	Yes	By Area		100.000	MajorContours
Contour colours: © By Interval (see table above) C By Surface C By Lavel C Death Station C None (shadran celul)								
Line styles:				Contour	Column Level	diffe	erence from ne	arest B. Model point
Amodale by interval Alignment I exit size: 0.500 I exit size: 55 500 I exit size: I exit size								
New Style >> Delete Style Print Sample DK Cancel								

Print Layouts

All print reports have been revamped. They are split into 3 sections which can be selected or deselected;

Title	Project name and report title
Header	Primary information about the report such as file names, dates and operator
Sub Header	Secondary information about the report

Print Tables				
Print Plan Printer: HP DeskJet 1220	Print Table Con LPT1:			
Print to T	abl <u>e</u>			
Command Pt Num East Noth Level Tgt			Column <u>I</u> itle: Column <u>width:</u> (mm)	Level
Pt Num East 13 1067.8831	North 883,5283	Level 116	873	
<u>S</u> how 🔽 <u>I</u> itle 🔽 Head	ler 🔽 <u>S</u> ub Hea	der		>
	OK	Cancel		Printer Manager 🧮

The reports vary but all include a header and footer with a background. The background is taken from one of the files

'TransparentRepBG.BMP stored in your application directory, if you want to customise your reports then simply edit this or replace it with one of your own.

🔟 Vie	w Report					
	NRG	Project 651 Penmaenmawr		-		
	File: n:\nrg\681 permaerma Date:12/00/2005	uur franciscan friary\coord\topoall.gpf	Operator: nrg			
	No of Points in File: 804 Hax E: 1152.2490 Hax N: 1100.7123 Hax L: 121.9240	No Points Selected: 004 Min E: 995.0794 Min N: 077.3903 Min L: -999.3000	Trav Ht: 0.000			
	Pt Num	East	North			
	2 2 4 5 6 9 10 11	1039.3895 1039.4422 1037.3034 1035.3010 1035.3014 1048.4035 1048.4035 1048.4035	1016.1567 1017.1047 1018.7546 1146.7509 1146.7525 1019.1154 1019.1154	100.513 100.533 100.533 100.439 100.473 100.222 100.255 100.255		
•				•		
Print	ter <u>S</u> etup A Copy	Print This Page	Print All Print to Eile	Cancel		



Change Surface by dimenions

Even more new ways to change triangle surfaces, this replaces the old length and breadth option and gives gradient and depth as well.

Chapge Surfaces	•	Manual
Edit Background Raster		Crossing Line
Legends	•	Within Box (wholly)
Arrows	•	Within Box (partially)
	_	Lasso
Re-examine Coding F6		Polygon
Renumber Points		Attached to line
Update Field Codes		Import Surfaces
Duplicate Points		Swap Surfaces
	-	Change surfaces by triangle dimension

Choose from the options which method you want to use to select triangles to change, define which current surfaces will be affected and choose a new layer for them to go on.

Change surfaces by dimension			
Gradient Gradient less than 1; Z Gradient greater than 1: Z Size	Frame1 Change to: 15 - Steep batters		
C Longet side greater than C Shortest side less than Area greater than: C Area greater than: C Area less than: C Surface Area C Plan Area C Depth	Control Testing and certral reserved Select all Select all Deselect all Deselect all Invert selection Control reserve Control reserve Control reserve Security and certral reserve Security and certral reserve Security and certral reserve Security and certral reserve		
Depth less than: Depth greater than: OK	Cancel		

Note: Gradients are specified as 1 being the vertical dimension, you enter the horizontal dimension. 1:1 is less than 1:2 – even if it does sound steeper !

Save Volume Settings

We've finally given you the option to save volume settings.

Select File, Save As - from the volumes form and enter a name. To call up settings use File, Open where you'll get a list of the stored settings

	Date Modified	
test1 Pile of Stuff	12/08/2005 at 13:32:44 12/08/2005 at 13:33:08	

Be careful not to save too many because we've forgotten to add a delete option

Select points by Chainage and Offset

A new select option that lets you define an alignment range. Not sure why it's not been in before

Select By Chainage And Offset					
String	MCM1				
Start Chainage:	5000				
End Chainage:	6000				
Min. Offset	-100.000				
Max. Offset	100.000				
<u>ок</u>	Cancel				

Another cunning one we've just added is the ability to select points only from those already selected. This gives you even more control over selecting points





Import DXF improved

The culprits will know who they are who have been nagging us for this. It's been a tough one to crack but we hope you like it.

DXF Import Options	
Check for Duplicate Points ? Text Levels Import Text Levels as Spot Heights Lower Limit Upper Limit 30	Blocks C Explode Blocks C Ignore Block Insertions C Import as Single Point Spline ✓ Import Spline Control Points
Arcs C Not Imported C Import Center Point and TP's import Arc Number of Points 400 O Circle Qk Cancel	Import Spline Fit Points Ellipse Not Imported Import Center Point and TP's Import Ellipse Number of Points on Ellipse

Check for duplicate points – filters the myriad of duplicates that DXF files can contain, unfortunately sometimes loses line work.

Import text levels as spot heights – this is a function designed to assist with bringing 3D information from 2D files, where spot levels are quoted on the drawing, it examines each item of text, tests to see if they fall within the limits you set and brings them across with the height the value of the text and the position at the insertion point of the text.

Arcs, Splines and Ellipses we've struggled with before, now we've given you the option to bring in extra points or just the control points, if you bring in extra then you define the interval by specifying how many points would be on a full circle.

Blocks can be exploded as they come in, ignored or imported as a single point

Alignment Design

We've now introduced a new wizard to help you design alignments that need to run through a series of points. The idea is you find the IP of the entry and exit straight by letting the software do a least squares fit to points on the straights, you then select the points you need the curve to run through and it calculates a best fit circle to go through them and joins the circle to the entry and exit straight using spirals. Once it's done you can edit the results and see graphically how the alignment fits.



Save the alignment as a string. Iit's possible to determine chainages from another string and append to it, creating a full alignment.





Cross Sections

3D Features

I know you'll like this one.



3D features are now supported using the name column and comparing the name to a look up table of features which you can define much the same way as DTM Map.

Access the features table from Settings, Elevation features

Elevation Features	X
Look Up Table for Features	
C:\NRGWIN Beta\elev_features.dat	 Default
Elevation Features File	
n:\nrg\653 clywd park\coord\elev_features.ini	 Default
Edit Look Up Table	

Then press edit look up table

📧 Features - n:\nrg\653 clywd park\coord\elev_features.ini 📃 🗖 🔀							
File Edit Settings							
Field Code Size Breadth Breadth Delete Ref						Ref e Ref	
Field Code	Elevation Featur	Colour	Layer	Width	Use	^	
EMB?	<none></none>		Topography	0.2	Yes		
EMT?	<none></none>		Topography	0.2	Yes		
F???	.E_FENCE		Fences	0.2	Yes		
FS??	-fenceSolid		Fences	0.2	Yes		
Gte?	-gate		Fences	0.2	Yes		
H???	-hedge		Hedges	0.2	Yes		
HL??	-hedgeLeft		Hedges	0.2	Yes		
HB??	-hedgeRight		Hedges	0.2	Yes		
17??	-DOT		Interface	0.2	Yes		
J???	-SOLID		Miscellaneous	0.2	Yes		
K???	-SOLID		Kerbs	0.2	Yes		
M???	-SOLID		Model	0.2	Yes		
N222	-SOLID		Miscellaneous	02	Yes	×	

The sections table now contains a dimension column so that the feature can be scaled, us Hn for the height and Wn for the width or just enter a number to retain the aspect. * where n = the dimension

Area shading

You'll like this too !.



Set up area shading in volumes by sections. From the layers settings there's now a column for cut and fill shading.

🖪 Layer	s and Ca	tegories						×
- Lage	r between	OGL	▼ and	UTSS	×			
Description: Topcoil Strip					Join option Left			
Excavation					C Ignore areas outside intersections C Join ends of lines			
Material V					C Extend layer 1: mean of all points			
	Start C Add C Subtract C Immun					C Extend layer ∠ 1: 0.000		
	Sign Server Zanada , ignate					Egtend options		
Brevio	as <u>N</u> es	d Ne <u>w</u> [Dglete New M	aterial		OK Ca	ncel	
			Excavation			Fil		
Layer 1	Layer 2	Description	Cut Shading	Fill Shading	Material	Category	Sign	Materia
OGL.	UTSS	Topsoil Strip	277777777777777					
UTSS	post 68	Stage 1 Earthworks					+	
post 68	E01	Earthworks		1111111111				
<								>

We'll put this in our areas option on cross sections as well if we remember



Surveys Ltd

Castle View, Station Road Llanfairfechan, Gwynedd, LL33 0AN

Tel : 01248 681240 Fax : 01248 680914