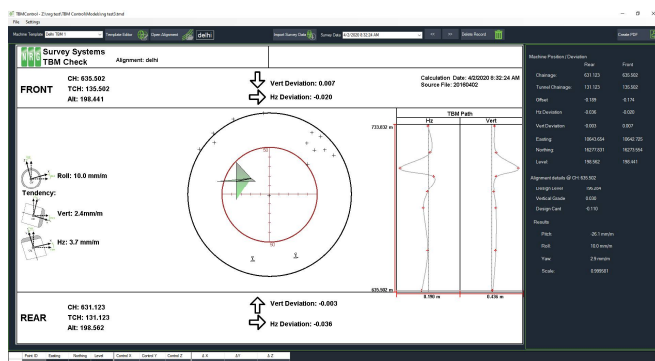# NEWSLETTER 2020 NRG

## 2020

### Welcome to NRG 2020

The main new feature this year has been the development of a least squares guidance control for tunnel boring machines.
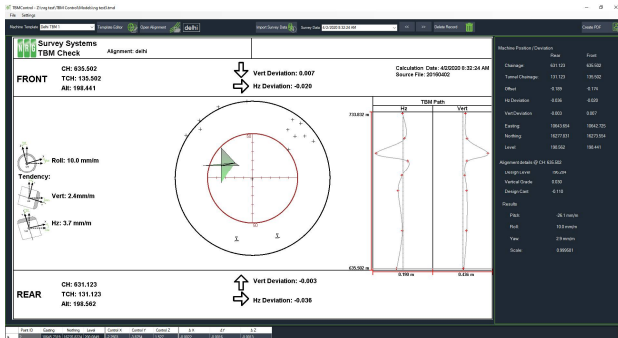
Other minor additions have been made to DTM Map and CloudEx in response to user requests. The software is nearly 40 years in development and it never fails to amaze me how many new tools we add to make life quicker and easier.
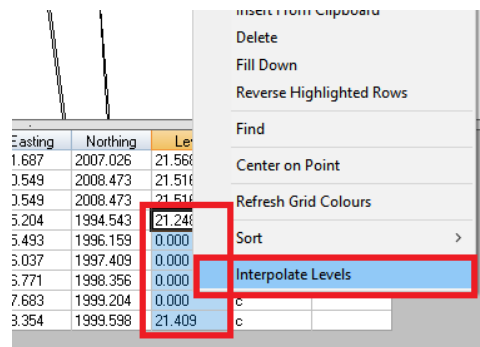
TBM Guidance

## TBM Guidance



This is a stand alone tool that compares a set of surveyed points against factory set targets on the machine giving the roll, pitch and yaw in relation to the proposed alignment

Any number of targets can be observed with least squares used to provide a 3D solution

## Interpolate Levels in Grid



Highlight rows in the grid, right click and select Interpolat levels

Levels are then interpolated with respect to the distance between each point



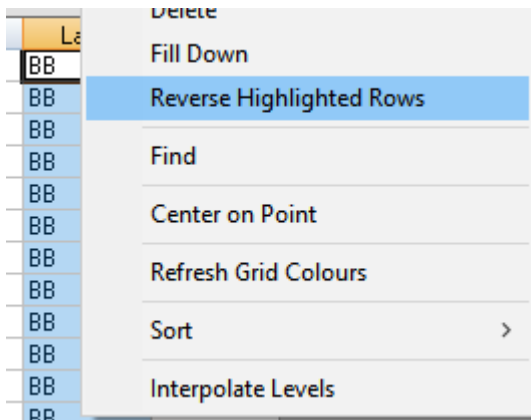## Interpolate Levels on a Line

Similar to above but it prompts you to select a start and end point user the cursor and will interpolate the levels on the line between the two points

## Reverse Rows

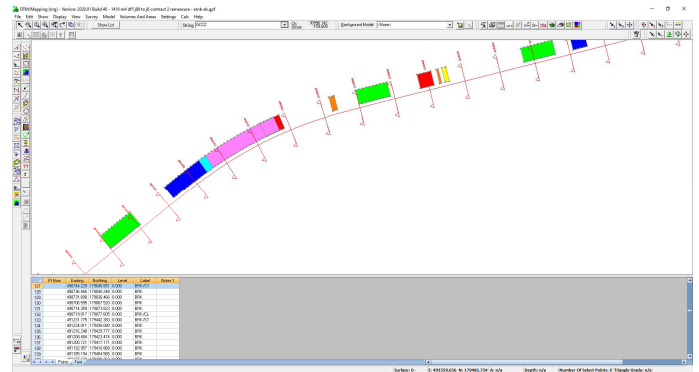A nice little trick when lines have been surveyed in different directions and you want a continuous line

Highlight the rows, right click and select Reverse highlighted rows

It will then swap all of the points in the oppoaite order in the grid
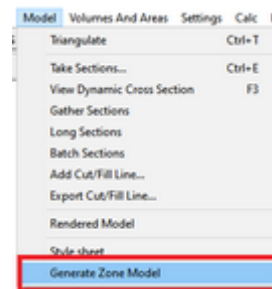


## Zone Models

Zome models are used in volumes to separate quantities into zones, they are just a model with surfaces set with a name for each zone.Heights in the zone model are irrelevant.



We used to spend a lot of time preparing these models, so we added a function to do it automatically

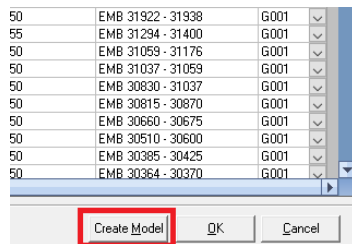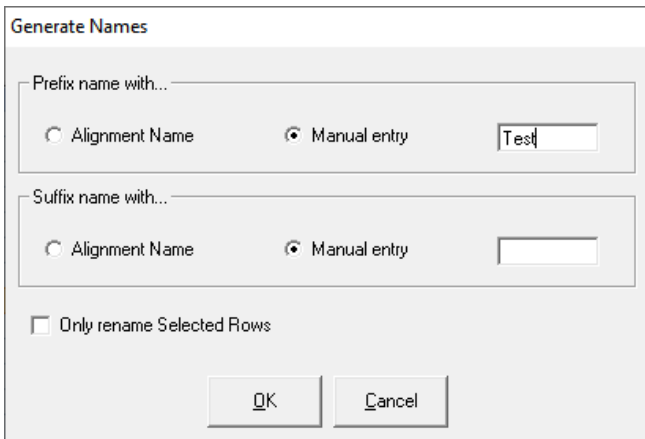From the models menu, select generate zone model



You can then populate start and end chainages, max and min offsets for each zone along with an interval for it to add points on the edge of the model
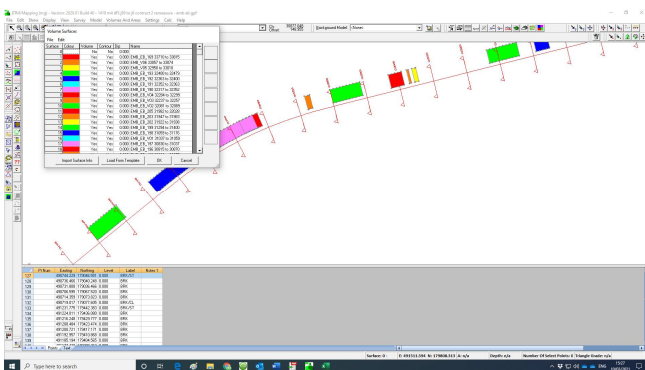
## Zone Models Cont'd…..

Each column supports fill down on the right click and paste if you prefer to set up the columns in a spreadsheet.

There is a function in it's edit menu to auto populate zone names where it will concatenate the chainage rages and suffix/prefix that you input
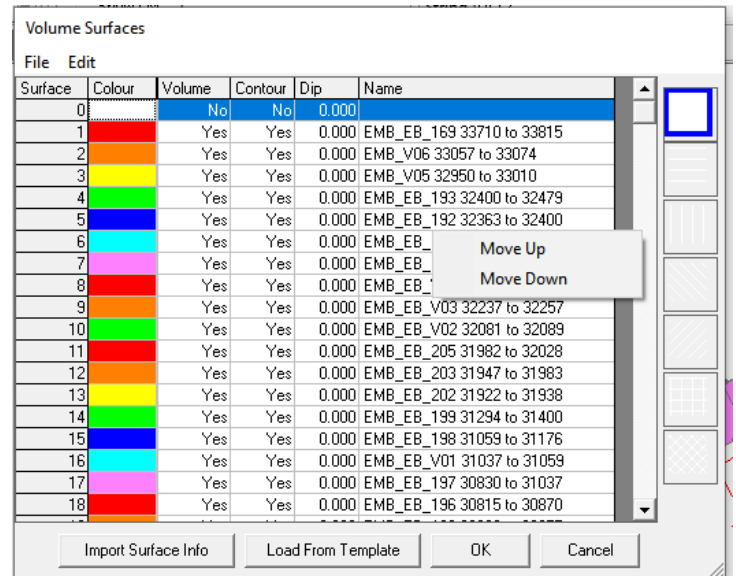




Press Create Model



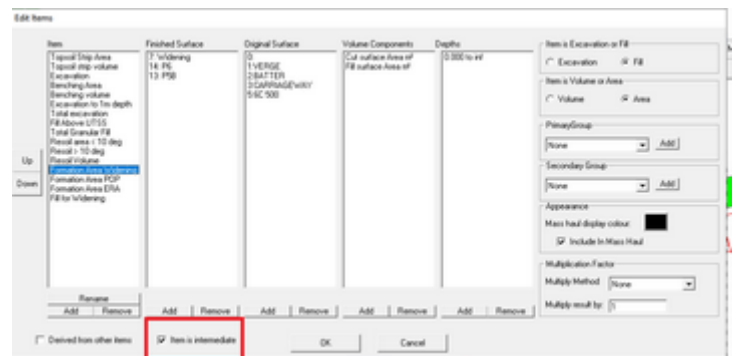It creates a triangulated DTM with surface names populated and colours set in order of the rainbow

## Surfaces Order

Volumes are listed in order of the zones. If you want to change the order of the surfaces then you can now right click in the volume surfaces window and move a surface up or down
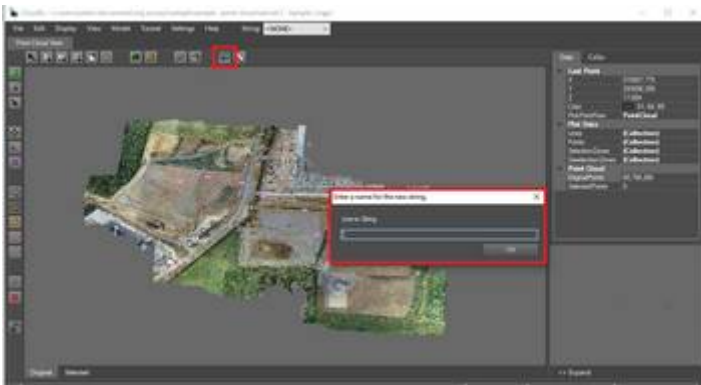


## Intermediate Class in Volumes

When setting up a template in the volume compiler we found we would sometimes get items that weren't wanted in the finished report. You can now class an item as intermediate so that it doesn't go out in the print or XLS
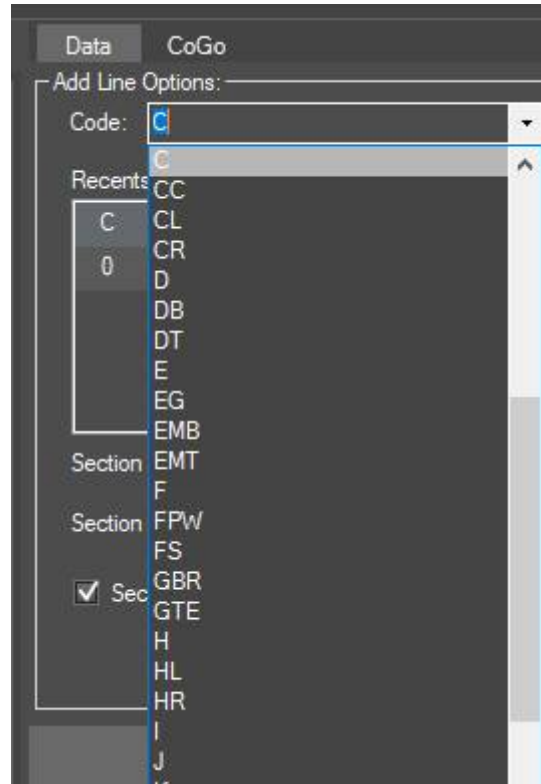
## Point Clouds

A lot of work has been going on with the new environment we have started with CloudEx, some of which is currently in Beta testing and promises access to unlimited sizes of files with lightening speed… but more of that in NRG 2021 hopefully
In the meantime some changes have been made to CloudEx
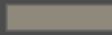
## Convert Line to Alignment



 We've added a button that lets you convert a line you have drawn over a point cloud into an alignment string. The main purpose being for you to simplify drive through
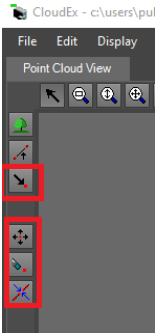
## Select Line code



Adding a line now supports the project features library

## Right Click Info



Right click on a point now pops up an info window with details about the point

## Delete, Insert, Drag Point



 Add point on line; inserts a point into the nearest line as you left click

 Lets you drag a point with a line running through it

 Deletes a point on a line or a point feature

## Break a line

 User draws a line on the screen and any lines that it crosses have a discontinuity added

## Section Markers

In the view menu we have added an option to view the section markers where you have gathered them



## Export Sections



In the Cross sections menu after it has been expanded there are option in the file menu to export the sections

## Delete Points



Delete points from the cloud has been added to the toolbar

Left click to draw a box and those points are permanently deleted when the file is saved
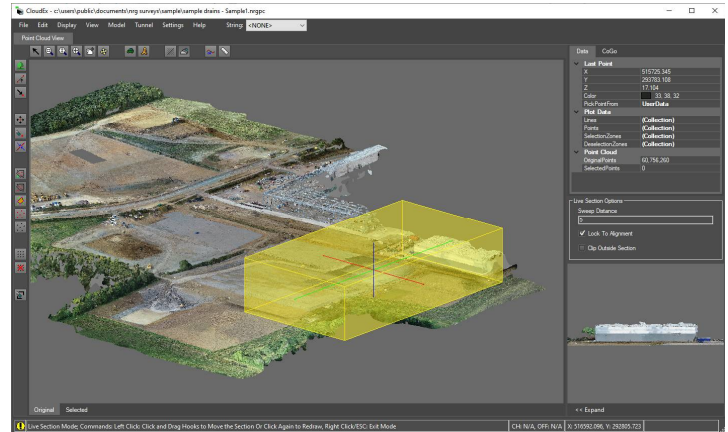
In only works in plan view

## Delete Points in Section



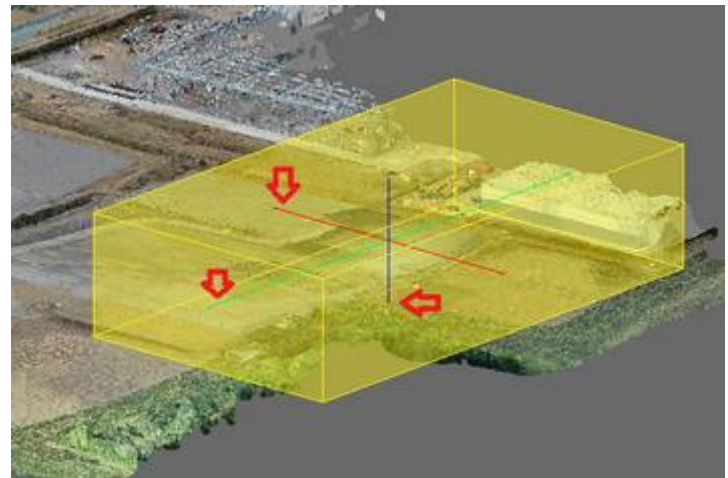The delete points tool has been added to the cross sections window

Again left click to draw a box, the contents of which are deleted

## Section Box



Drawing a cross section now shows the box about which the points are gathered and viewed in elevation

The box now displays 3 lines, the ends of which can be pulled to change the size of the box



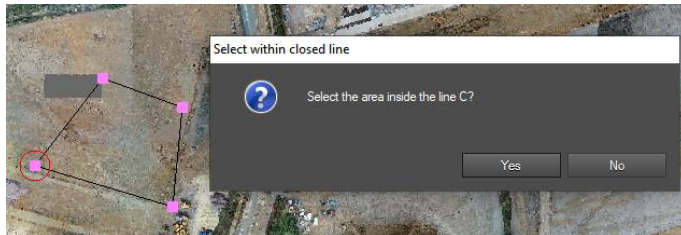We have been using it for grabbing floor plans from room scans

## Select within Polyline

If you have drawn a closed polyine

 Press this button, then click inside the closed polygon

It will highlight the points on the line and offer to select



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