Instructions for VBA-apps. TreeMixPlanter and DropCellsOnTerrain (v. 1.55)

Creating a planting areas and placing furniture on a terrain model (~ hundreds of RPC cells in this image) takes only a few moments with TreemixPlanter and DropCellsOnTerrain.

Introduction

Please find attached VBA-project CellsOnSurface.MVBA which contains two separate VBA macros for placing large amounts of cells on 3D terrain models (at the moment terrain model can consist of b-spline surfaces, mesh elements, shapes, complex shapes and/or ellipse elements. Version1.55 has been tested on MicroStation V8i (V08.11.05.17) and so far it seems to be fairly stable. I assume no liability for any damages which may result from the use of these macros. Please use them at your own risk.

I made these macros primarily for mass populating landscape design schemes with trees and shrubs but they are quite handy for placing other 3D-items (wind turbines, stones, lampposts cars, etc.) on terrain models also. The first macro – TreeMixPlanter.main – allows user to mass populate fence contents using a cell or selection of cells. Cells will be placed in a random pattern (random location with varying scale, equal number of each cell in the selection) or they can be placed using an average distance between cells (the macro slightly varies the distance in order to give idea of a free form planting). TreeMixPlanter can not call RPC-cells directly but if you attach your RPC cells to an ordinary cell library, it works fine (see screenshot above where RPC-cells have been used as part of ordinary cells). The other macro – CellsOnTerrain.main – is designed to move selected cells vertically until they hit 3D terrain.

Installation

In order to install these macros, you have to configure VBA variables so that VBA search directories point to the folder where attached mvba is stored. When directories are correctly configured, you can use the following key-ins or attach them into a custom tool palette " vba run [cellsonsurface] ForestMixPlanter.main" and " vba run [cellsonsurface] CellsOnTerrain.main ".

How to use 'TreeMixPlanter':

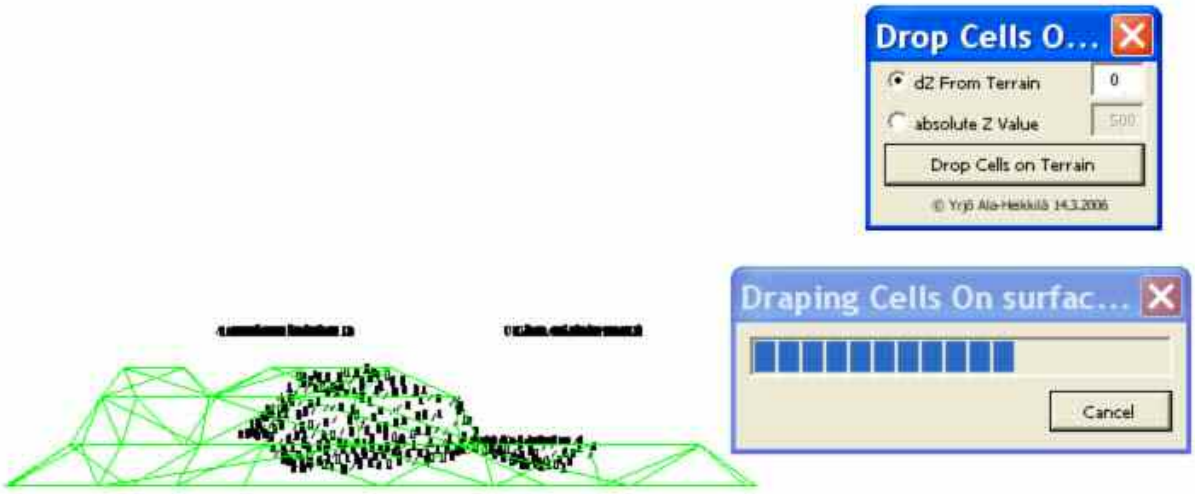
1. Launch the macro by keying in " vba run [cellsonsurface] ForestMixPlanter.main" Draw a fence (a shape formed fence works fine also)
2. Select cells you want to use from ListBox on the right (use 'sift' and 'control' to add and remove cells from selection). If there is no cell library attached, please use the magnifying glass icon to attach one.
3. Select 'Number of Cells' to be placed (max 20 000 cells at a time!) or 'Average Distance' between cells. 'Number of Cells' option splatters cells into random locations inside the fence. 'Average distance' option places the cells in a triangular grid with 30% variation in distance (see screenshot in page 1 – cells have been placed using 5 m average distance).
4. If you don't want to drop cells on a terrain, tick the checkbox off. Cells will be placed on active Z.

5. If tick box 'Place Cells On Terrain' is selected, you can choose one level which will be ignored when the macro scans for terrain elements. This level may contain closed shapes which are not part of the terrain (boundary elements for planting areas, for example). Note: All other closed elements which overlap the fence will be regarded as 3D terrain.
6. Click command button 'Place Cells inside a Fence' to splatter your cell selection on a terrain model.

TreeMixPlanter and Drop Cells On Terrain user interfaces.

How to use'DropCellsOnTerrain':

1. Launch the macro by keying in "vba execute CellsOnTerrain.main".
2. Select cells (max 20 000 cells at a time!) you want to drop on a terrain model.
3. If you want to move cells to a fixed Z value, please select option button 'absolute Z value'
4. If you want do move the cells above or underneath the terrain use dZ option.
5. Click the command button to move the cells on terrain.



Fixes, new features and known issues:

- Please note that Version 1.55 is designed for MicroStation XM. I have done only minor testing on V8i.
- The way mesh elements are treated is more sophisticated now, so there is no need for a separate undo-button any more. Unfortunately, this means that macro does not run on MicroStation PowerDraft any more.
- Version 1.5 includes a cancel button and a progress bar which help user to estimate time required for the operation.
- I have added an option to move cells to a fixed Z-level (macro DropCellsOnTerrain).
- A couple of bugs which have caused occasional run time errors have been fixed.

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