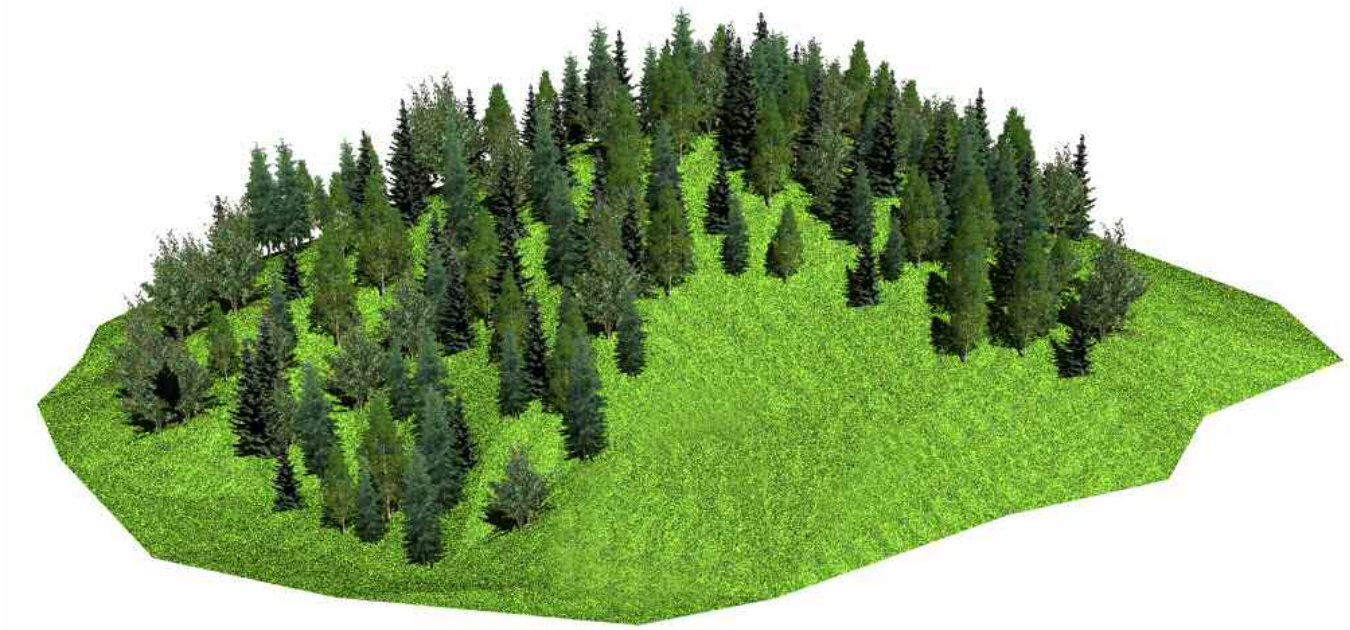
Helsinki 25.7.2005

Instructions for TreeMixPlanter and DropCellsOnTerrain (v. 1.15)



Creating a forest on a terrain model (~300 RPC trees in this demo) takes only a few seconds with TreemixPlanter. The macro allows user to place up to 5000 cells at a time inside an area enclosed with a fence.

Please find attached VBA-project CellsOnSurface.MVBA which contains two separate VBA macros for placing large amounts of cells on non-planar terrain models (at the moment terrain model can consist of b-spline surfaces, mesh elements, shapes, complex shapes and/or ellipse elements). These macros have been created and tested with MicroStation V08.05.02.27 and I do not guarantee that they work with any other versions of Microstation. I assume no liability for any damages which may result from the use of these macros. Please use them at your own risk.

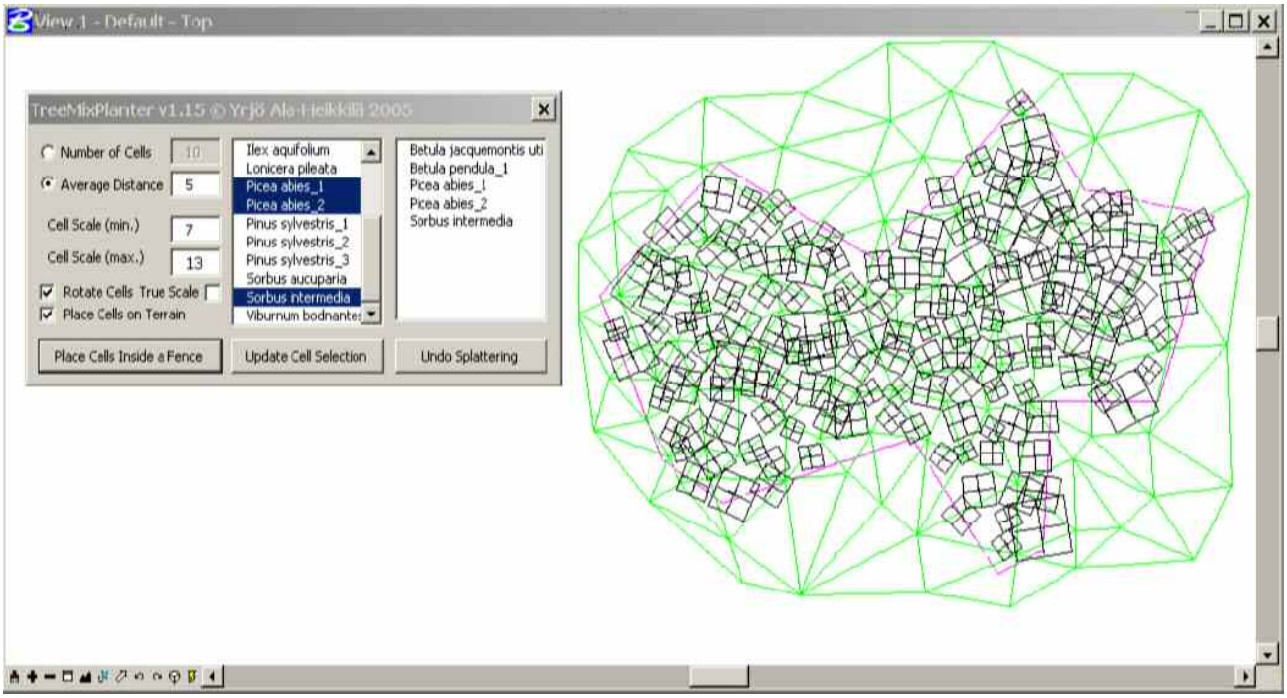
I made these macros primarily for mass populating landscape design schemes with trees and shrubs but they are quite handy for placing other 3D-items (wind turbines, stones, lampposts cars, etc.) on non-planar terrain model also. The first macro – TreeMixPlanter.main – allows user to mass populate fence contents using a cell or selection of cells. Cells will be placed in a random pattern (random location, varying scale, equal number of each cell in selection). TreeMixPlanter can not call RPC-cells directly but if you create an ordinary cell library from your RPC content, 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.

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 and make sure that name of standard VBA project is set to "CellsOnSurface.mvba". When directories are correctly configured, you can use the following key-ins or attach them into a custom tool palette " vba execute ForestMixPlanter.main" and "vba execute CellsOnTerrain.main".

Precautions (version 1.15 and meshed terrain !):
I have updated code so, that you can use mesh elements as 3D-terrain with some precautions: At the moment there is no tools for manipulating Mesh elements in MVBA. As a workaround, program will copy meshed terrain elements when it finds any, explode them to shape elements and remove these copied shapes when program is finishing. From user's point of view it means that program will actually perform three (3) Microstation commands and undoing takes three Undo commands instead of one (the 1st undo removes newly placed cells, 2nd undo removes copied shapes and 3rd undo removes copies of the original mesh elements) . It is highly recommended that you use Undo button provided in VBA macro's toolbox instead of Ctrl+Z. Undo-button will perform as many Undo commands as needed, depending of the current situation. Reckless use of Ctrl+Z may lead to situation where you may have several copies of terrain mesh in the drawing. The other option is to drop terrain meshes into shapes before using the macro.

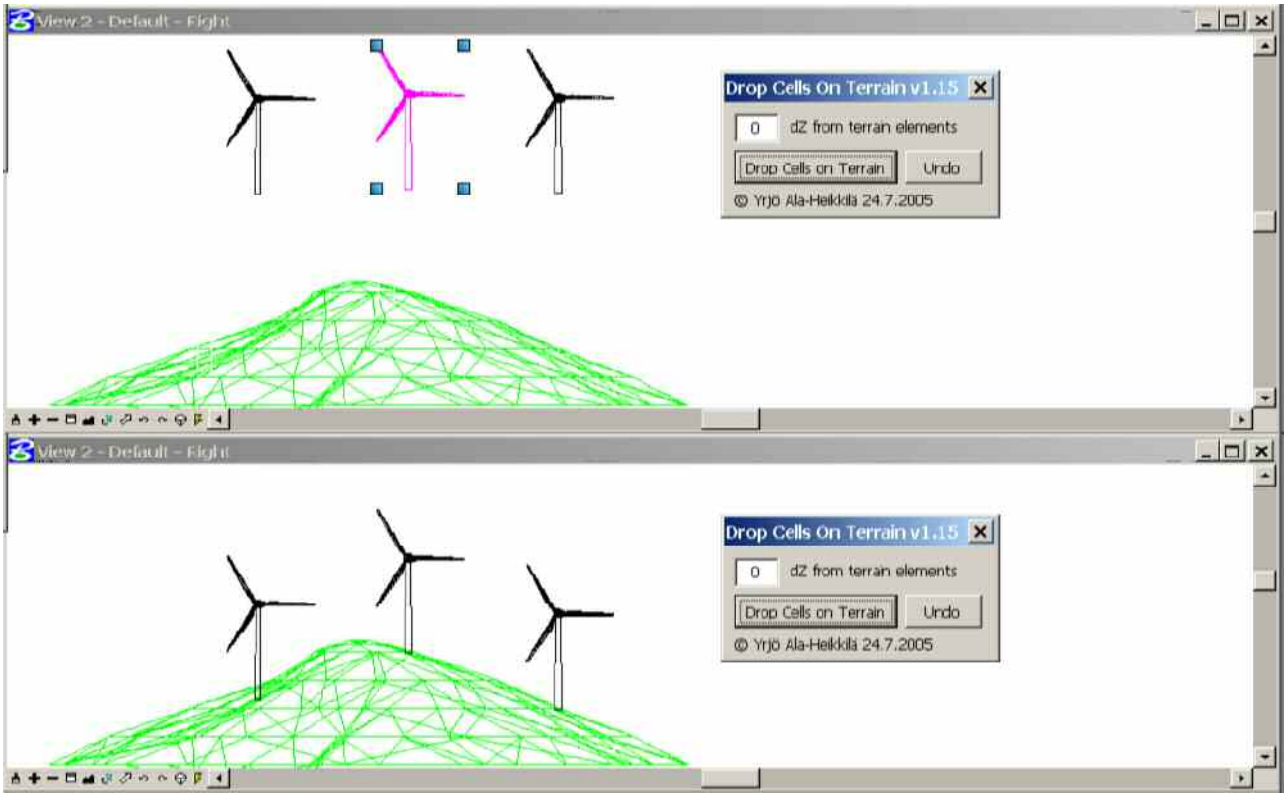
Directions for Use (TreeMixPlanter):
1. Make sure that there is a cell library attached in the drawing before you launch the VBA.
2. Launch the macro by keying in " vba execute ForestMixPlanter.main"
3. Draw a fence (shape formed fence works fine also)
4. Select cells you want to use from ListBox on the left (use 'sift' and 'control' to add and remove cells from selection) and click 'Update' button. In the Listbox on the right you see names of the cells to be used.

5. Select ‘Number of Cells’ to be placed (max 5000 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 below – cells have been placed by using 5 m average distance).
6. If you don't want to drop cells on a triangulated surface, tick the checkbox off.
7. Click command button to splatter your cell selection on a terrain model



Directions for Use (DropCellsOnTerrain):

1. Launch the macro by keying in "vba execute CellsOnTerrain.main".
2. Select cells (max 999 cells at a time!) you want to drop on a terrain model.
3. If you want do drop the cells above or underneath the terrain use dZ option.
4. Click the command button to drop the cells on terrain



with best regards

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