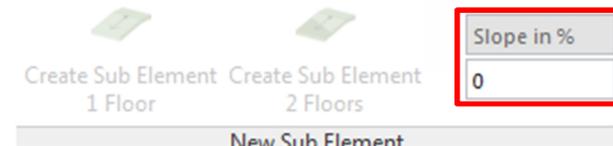
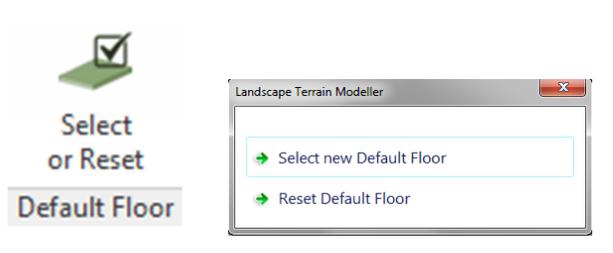




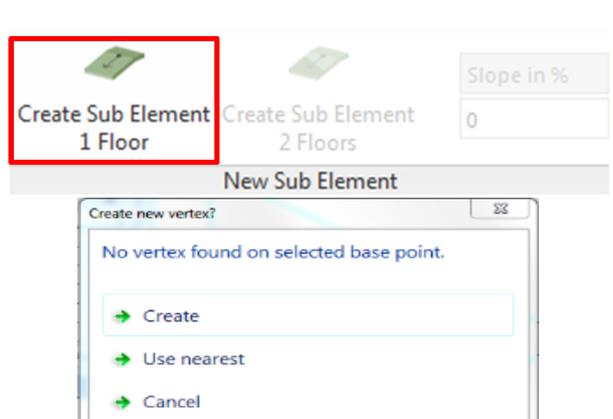
Define slope

 <p> Create Sub Element 1 Floor Create Sub Element 2 Floors New Sub Element </p>	<p>In the Ribbon New Sub Element, the slope must be typed in percentage % (+ Enter). A positive number will create a decreased slope, negative numbers will create an increased slope</p>
--	--

Default Floor

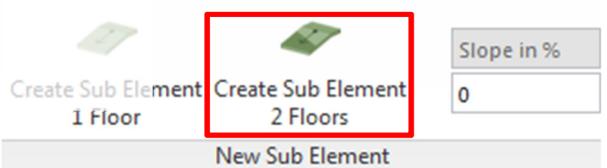
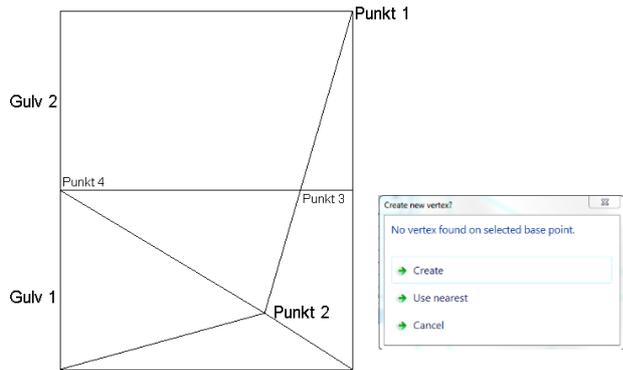
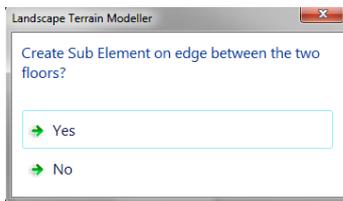
 <p> Select or Reset Default Floor </p>	<p>If there is a lot of work in one specific floor, the function Default Floor can save a lot of selecting. If a Default Floor is selected the step "Select the floor to modify" can be ignored. When working in other floors than the Default Floor, the function must be reset or a new floor must be selected as Default Floor</p>
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Create Sub Element

	<ol style="list-style-type: none"> 1: Define Slope 2: Select the floor to modify 3: Select the basepoint for the calculation The selected point must be a Sub Element or a point on a line. If the selected point isn't a Sub Element, the user will be prompted to select if the nearest point is to be used or to create a new Sub Element 4: Select the position for the new Sub Element
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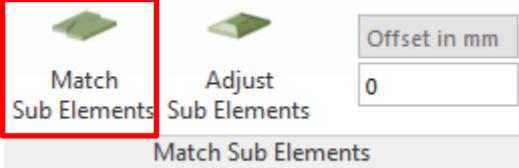


Create Sub Element, with basepoint in another floor

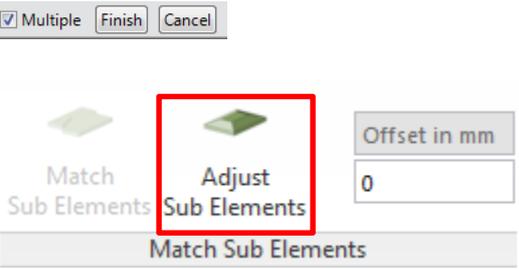
<p>Point defined by decrease</p>  <p>Create Sub Element 1 Floor Create Sub Element 2 Floors</p> <p>Slope in % 0</p> <p>New Sub Element</p>	<p>1: Define Slope</p>
	<p>2: Select the floor in which to create the new Sub Element Floor(1) (Default Floor)</p> <p>3: Select the floor where the basepoint is located Floor(2)</p> <p>4: Select the basepoint for the calculation The selected point must be a Sub Element or a point on a line. If the selected point isn't a Sub Element the user will be prompted to select if the nearest point is to be used as basepoint or to create a new Sub element</p> <p>5: Select the position for the new Sub Element Point(2)</p>
	<p>The user will be asked if a new Sub Element is to be created where the line between the basepoint and the placement for the new Sub Element intersect with edges of the two floors Point(3)</p> <p>Note: If the two floors do not intersect the point will not be created.</p>
<p>TIPS:</p>	<p>If a plane slope is wanted on floor(2) the point(4) It can be set to the same elevation as point(3) by typing the slope 0 and insert a new Sub element in point (4), with point(3) as base point.</p>



Match Sub Elements

	<p>Two floors sharing the same edges can be modified so the Sub Elements will have the same elevations, or with the same distance in elevations.</p> <ol style="list-style-type: none">1: Type the elevations offset2: Select the floor with the right elevation3: Select the floors to be modified
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Adjust Sub Elements

	<p>The Sub Elements will be adjusted with the distance typed in the Offset in mm box</p> <ol style="list-style-type: none">1: Type the elevations offset2: Select the floor(s) in which to adjust the Sub Elements3: Press Finish (selection) in the upper left corner4: Draw a window around the Sub elements to Adjust
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Unify Slope

	<p>1: Select 2 Sub Elements and a point in a line</p> <p>The slope between the two selected Sub Elements will be registered and the elevation in the 3rd point is calculated. If the 3rd point is a Sub Element the elevation is changed. If the 3rd point isn't a Sub Element the user will be prompted to Create a new Sub Element.</p>
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Match Floor to Grating

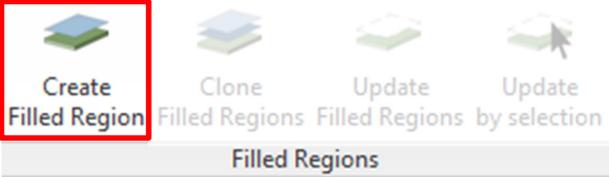
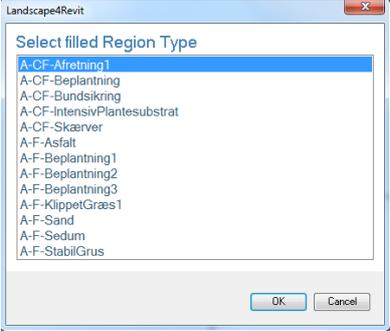
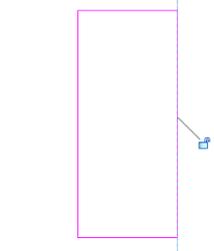
	<p>Match Floor to Grating will create Sub Elements around a Family to match the Family's elevation.</p> <p>1: Make sure the family is in the right elevation 2: Select the Family 3: Select the Floor (If the Family isn't hosted in the floor)</p> <p>Note: If a Yes/No Parameter named "Circular" is present and checked in the Family the function will create 16 Sub Elements around the family. If the parameter isn't in the family or is unchecked the family is considered a square and 4 Sub Elements will be created around the family.</p>
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Sub Elements in real Levels

	<p>The Sub Elements in the selected floors will be set to real Levels and the floor will keep the attachment to the Level</p> <p>1: Select the floor(s) in which to adjust the Sub Elements 2: Press Finish (selection) in the upper left corner</p> <p>Notes: If the Sub Elements in the floors have been reset, the offset From Level, must be set to 0 to get the floor in the right position again.</p> <p>Placing a new Sub Element after using this function: Set the Elevation to 0 and then correct the elevation on the Sub Element.</p>
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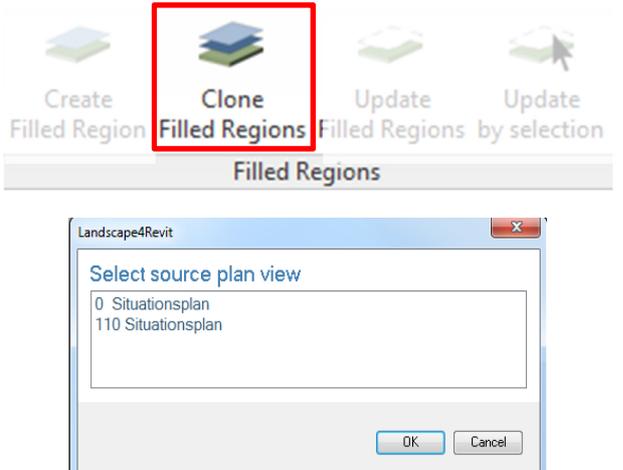


Create Filled Region

	<p>If the floor has different slopes the graphical presentation in Revit isn't always useful. Create Filled Regions to compensate.</p> <p>1: Select the floor 2: Select the filled Region Type</p>
	<p>The Filled Region is created with the same extension as the floor. The Floor and the Filled Region will be connected to use the Updated Filled Region.</p> <p>All openings inside the floors must be created with the Revit function "Vertical Opening". In that way, the openings will be recognized by the function Filled Region.</p>
	<p>If the opening touches the bounding line of the floor. It is important that the line of the opening and the bounding line of the floor is aligned.</p>
<p>Note: Filled Regions not created by the function Create Filled Region in this APP, will not response on the function Update Filled Region</p>	



Clone Filled Region

	<p>If one or more Filled Regions are created in one view and the same Filled Region connection to the same floors is wanted in a new view, use the Clone Filled Region Function.</p> <ol style="list-style-type: none"> 1: Make sure the view to create the Filled Regions is Active 2: Select the view from where the Filled Regions must be cloned. <p>To keep the connection between the filled Region and the floor to use the Update Filled Region, it is important to use his command instead of copy the Filled Regions</p>
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Update Filled Regions

	<p>If one or more floors are changed to another extension, the Filled Region (created by the create Filled Region function) can be updated by following the floors new extensions.</p> <p>By selecting Update Filled Regions, All Filled Regions in the project will be updated to the floors extension to which they are connected.</p> <p>Note: By using the Update Filled Regions Function any changes in the filled region, e.g. Rotation or moving the pattern will be reset.</p> <p>Tip: To find the right place for the pattern in the Filled Regions after the use of Update Filled Regions Draw one or more refplanes where the pattern is located. Use the Align command to align the pattern to the refplanes.</p> <p>Use Update by Selection to update only the selected Filled Region</p>
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Spot Elevations

	<p>This function will place a Spot Elevation</p> <ol style="list-style-type: none"> 1: Select if you want to create or delete spot elevation 2: Select the Floor(s) on which you want Spot elevation 3: Press Finish (selection) in the upper left corner. <p>Note: The function will use the default Spot Elevation Tag Insert a Spot elevation manually to change default</p>
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TopoSurface to Floor

	<p>This function will convert a Topography into a Floor</p> <ol style="list-style-type: none"> 1: Select a Topography 2: Select a Floor Type from the list <p>Note: The Sub Region must be inside the Topography. Boundary loop inside another loop, can make the Floor unstable, use opening instead. Building Pads are ignored by this function</p>
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Find Coordinate

	<p>This function will create a cross on a specific coordinate</p> <ol style="list-style-type: none"> 1: Type in coordinate values for both directions 2: Change the size of the cross, if necessary
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Slope text on faces & edges

Identity Data	
Minimum_Slope	2.500000
Maximum_Slope	16.000000

Slope text on faces & edges will place text notes on faces and/or edges on the Floors.

1: Select if you want to create or delete text notes
2: Select the Floor(s) on which you want slope texts
3: Press Finish (selection) in the upper left corner.

The first time this function is used in the model 2x2 parameters are loaded and attached to floors.
 Minimum_Slope
 Minimum_Slope_Type &
 Maximum_Slope
 Maximum_Slope_Type

For each Floor Type or Instance you can type in a Minimum and/or a Maximum slope.

If the slope is less than the value in Minimum_Slope(_Type) the texts will be **red**.
 If the slope is greater than the value in Maximum_Slope(_Type), the slope texts will be **orange**. next time the function is used

If there are values in both e.g. Minimum_Slope and Minimum_Slope_Type the value from the instance, Minimum_Slope will be used.
 When the function is used again the old slope texts will be deleted.

Note:
 The Slope Texts are for QA only and they will NOT be automatically updated if the Floor geometry changes.
 The function will use the default Text type
 Insert a Text manually to change default text Type

Known issues:

The functions will work on Floors only.

Floors and openings must be created in **one** closed loop only.

Floors with complex geometric forms can cause LTM not to compute.

Some Topographies with complex forms can make it impossible to create the floor or edit the floor boundaries.

Alternatively, these can be divided using Split Surface to avoid very large complex floors.