

Content:

[Introduction to the Bézier Bridge and Stairway Builder](#)

[Fields of use](#)

[Facts](#)

[Limits](#)

[Technically](#)

[Requirements](#)

[User guide to the Bridge and Stairway Builder](#)

[The Procedure](#)

[Preparation](#)

[Dialog Button Functions](#)

[Note:](#)

Introduction to the Bézier Bridge and Stairway Builder

Dora Gustafson, Studio Dora ©2009

Places objects equally spaced, along a smooth curve.

The curve can be anything from a straight line to a complex curve in space: a fifth order Bézier curve.
Comes with one stairway case and one bridge case.
A tutorial for each case is included.

Fields of use

This Bézier tool is designed for building Bridges and Stairways

Facts

The tool is a script that places objects: Planks, along a smooth Curve.
The Curve is connecting two points in space.
The Planks will be equally spaced on the Curve, like Steps on a stair.
Any Plank will point along the Curve (the tangent direction).

The script itself is contained in one prim: The 'Origo' or 'point0'
'Origo' will rez from 1 to 5 more prims: point1, point2, ... point5
The Curve will connect Origo and the highest numbered point
The positions of the other points determines the curve in space.

The 'Origo' must also contain a 'Plank', an object supplied by the user.
The 'Plank' is the object the Builder will place along the curve in multiple copies.
The 'Plank' may be offset in order to replace it's prim center with a virtual center.
More about this on the 'tips and tricks' card.

Limits

Upper size limit: the space defined by a region: 256m × 256m × 4096m.
The Builder can make Builds in any scale, from tiny to region wide.
The number of Planks is limited to 2000.

Technically

The curve used is a Bézier curve.
A curve order from order 1 to order 5 can be selected.
A detailed, mathematical description, can be found on the Internet.

Requirements

The tool user must be familiar with the Second Life Edit Tool!

The Second Life Edit Tool will be used to place and move prims in space.

It may also be used to link a building into one object.

User guide to the Bridge and Stairway Builder

Dora Gustafson, Studio Dora ©2009

The Procedure

The elements used to build with are single prims or linked sets of objects. They are referred to as 'Planks'

1. Rez an 'Origo' prim. The rezzed prim will be marked: '0'. The tool will rez some numbered prims.
2. Click the Origo prim
3. Click "Replace" in the dialog.
4. If the outcome is satisfying, continue with step 6.
5. Otherwise rearrange one or more of the numbered prims, then continue with step 3.
6. The building is made. Click "Fix" to remove scripts from all Planks

Preparation

1. The Plank can be any SL object.
2. The Plank name must be no more than 24 characters long.
3. Equip the Plank with the script: 'Plank script'
i.e. drag the 'Plank script' into the Plank's inventory.
4. Equip the Origo prim with the Plank object
i.e. drag your Plank into the Origo's inventory.
A max of 12 Planks in the Origo can be selected from the tool's menu.
5. You must specify the number of Planks you want on a Curve, with a number in the Object Description

'Plank' center offset: See the 'tips and tricks' card

Dialog Button Functions

"Do", will make the Build

"Undo", will remove all Planks

"Replace" combines "Undo" then "Do" dialog buttons:

1. Removes all Planks, like "Undo"
2. Makes the build, like "Do"
3. Reopens the dialog window for your convenience

"Fix" this button will remove the 'Plank script' from all Planks.

It will also remove the numbered, tool prims from the world(they can be restored with the RCL button)

"Axis" with this button you can choose which object's main axis shall follow the Curves direction.

"Axis" toggles between: X, Y and Z.

When you toggle axis you will see 'prim0' rotate to show the setting.

Hint! you may manually rotate the 'prim0' to obtain a rotation different from the 3 main axis.

The axis used is always prim0's vertical axis.

"Mode" with this button you can toggle between 3 modes, that Planks are placed on the Curve.

'Stairway' Mode: The selected axis is pointing along the curve in the horizontal plane only, so all Planks are horizontal.

'Bridge' Mode: The selected axis is pointing along the curve. It always has a perpendicular axis that is horizontal.

'Fixed rotation' Mode: All Planks have same rotation as the Origo prim. Planks are not pointed along the Curve.

"Turn" Will turn the plank 90 degrees around the axis pointing along the curve

If the plank is on edge, use "Turn", then "Replace"

If the plank is upside down, use "Turn" twice, then "Replace"

When you press "Turn" the 'prim0' will turn around it's vertical axis.

"Temp"

is used to make temporary Planks. It is useful if you run out of prims on the parcel you are on.

"RCL-n"

When you press "Do" or "Replace" the actual positions of the points are saved on a memory stack.

The button "RCL-n" will cycle through saved prim positions.

The stack has four levels: n= 0, -1, -2, -3; 0 being the actual level and -3 being the oldest.

"Elements"

Opens a sub dialog, where you can pick one Plank from a max of 12 contained Planks.

"In Line"

Will place all the prims: point0, point1, ... point5 on a straight line.

'point0' and the highest numbered point will not move, they define the line.

"More"

Opens a second menu dialog. In this dialog the order of the Bézier curve can be set.

There are 5 orders to choose from.

1.order. The curve is a straight line connecting 'prim0' and 'prim1'

2.order. The curve from 'prim0' to 'prim2' is attracted by 'prim1'. The curve is in one plane described by the 3 prims.

3. 4. and 5.order involves 4, 5 and 6 points and gets more and more flexible and more hot to handle. All of these curves may be 3 dimensional.

"Dump"

Will write data in the chat window.

Data are: Scale of prim0, the positions of prim1, prim2, etc. relative to prim0.

These data may be copied and saved on a note card.

The data on the note card will be preset data, when the card is in the Origo prim's inventory and the tool script is reset.

"RESET"

You can chose: "Default", "From Card" or "Ignore"

"Default" will erase whatever you were doing and rez 'point0' and 'point1'

"From Card" will set the Builder to the presets on a note card if a note card is present.

"Ignore" will cancel "RESET"

Note:

When the dialog window is not open it can be opened in two ways

1. Touching the Origo prim (click it)
2. Saying "reopen" on the chat