

## Stairs, bridges and rivers

### Introduction to the need for collidables

Many a place needs a simple elegant way to change elevation. Not the ungainly jumping about... or the portal scripts... we need stairs. Have you been struggling to get this darned flipping stairs to line up properly? Do you have come in properties where all looks nice except you need to remember to jump over each stair or be trapped in it? Have you spend days in growing bewilderment.

Well, so have I... I have been busy with decorating for some time. I believe to have been the first to implement the portal script to get outside the free zaby, I developed the matrix building system, however I kept fighting with stairs. Finally I had enough... locked myself up for a few days walking into a series of collidables, marking the exact positions in an xl spreadsheet, trying to unlock their hidden secrets. This was before the days of the red lines. I published a tool that created a box equivalent to the collidable... and for the first time I was able to see what had been eluding us all for so long. Suddenly it became clear we all had been doing stairs the wrong way around. No wonder it was such a horrible pain. Historical building a stair was almost a voodoo method of trial and error, blood, sweat and tears. Over time many decorators told each other in secret meetings the golden numbers "29.4 degrees" which somewhat allowed for a bit of guidance. Still most, even now, will spend a good amount of days if tasked with the need to make a simple two level stair.

However since RLC is a math oriented program, we clearly can work out the methods either by math or by using some simple rules and skills. This document teaches that method. With it you should be able to create elaborate stairs within minutes. You too can overcome the trouble stair building has been.

Please let me also take a moment to introduce myself to you. My name is Peter, sadly no longer into anything sporty, however the nickname stuck for some reason. Like you I came to RLC out of curiosity, and I stayed because I fell in love with many friends and building. To me, you are not just a client, you are not just income either; you are a friend with a passion to build. I know that desire that is in your eyes. Let me help you cordial to become proficient your next level of greatness.

### Notation

In all documents I use short version of position, rotation and or scale.

So: Position 1000x 23y 5000z is to be read as On the position tab: X: 1000 Y:23 Z:5000

So: Rotation 0xz 90y means: Rotation tab: X: 0 Y:90 Z:0

Please get used to type by numbers. It is faster and more accurate. Avoid using the bugged color arrows. Better use the small up down arrows in the box itself.

## The rules

There are a few fundamental rules, some are well understood... others are empirical, they just work that way. That said: it is still a rule. Almost all cases where I am asked to come fix stuff it is a simple matter of not following the rules.

- 1) We are 570 tall and like to be that amount above any collidable + 1 extra.
- 2) No collidable can be larger than scale 2 in the direction of the stair. No collidable can be smaller in the Y scale than 0.4 (this number varies on some unknown factor of PC speed and RLC bug status. As in it can work at 0.25 for me... might however not work for you and vice versa). The X and Z minimum scale is not fully tested .. however seem to have to be larger than 0.1 ish
- 3) Our avatar refuses to go up vertical (90 degrees) if the step is more than 196 on Y from the base zaby or club
- 4) We do NOT walk on our feet. We glide instead by our neck.

### Rule 1: we are 570 tall and like to be one above a collidable

The above might look like complex at first glance... it is however far from that.

The first rule simply explains how we have to deal with things like portal distance and or scale of objects

An example: given that we like to land on a floor that starts at 1000y and given that its Y scale is 1.5 can we work out the exact portal location?

Solution: We know 1000 .. we know the collidable is scale 1.5 .. so 1.5 times 570 .. we like to be one above that... or shorter: we like to be at  $1000 + 1 + (1.5 \times 570) = 1856y$

### Rule 2: No scale shall be taller than 2xyz or smaller than 0.4y

Rule 2 is really about using the correct collidable for a given need. I suggest the following, not because they are the only ones... simply I understand them well and they work well together.

- Surface\_Water02 -> for huge open spaces. This is the largest object in RLC. So we can stay within the Max Scale of 2xyz. If you need even bigger spaces: use multiples or plan careful how your stairs start
- Flr\_dance -> this resolves to a plane\_01 however we need really the flr\_dance and not the other three similar plane\_01s that exist. This object is mid size... great for floors.
- FlatPlane -> this is a nice small great for normal size stairs and balconies.

How to make bar chairs: Since we know collidables are unstable when they are smaller than 0.1 xz we can use this to make chairs that do not collide yet do sit well.

Try this: make a wall... Scale 0.2x 0.53y 1.5z . Put script chair 2 seat (as you know the 1 seat is bugged) Now make a flatplane Scale 0.01xz 1y . Put the location at exact the same xz as the wall.. and 1y below it Then click.. notice you will sit without falling painful on soft body parts... now take any fitting object and while seated put it under your behind. Stand up and hide the wall. Notice you will be almost impossible to get stuck at a bar.

Small trick: if you do not know the correct height... start with the wall way up... then lower the flat plane

till you sit just right... then stand up and lower the wall to just one above the flat plane.

Variation: why not copy and rotate extra walls around your chair... that way you can have multiple seat positions that clearly show up with the mouse (when your editor is closed)

Advanced: why not have male and female seats. For this make two flat planes collidable and have one thin taller wall for females.. a larger bigger yet lower one for guys... the distance should be about 40y

How to handle a situation where someone else already put half the zaby and now you are asked to create a working bridge. The original deco used a court floor scale 400xz 1y. Answer: create thin wide collidables that follow the rules. So where you need a stair or bridge.. make sure your object is correct sized... resize the court floor to be away from your stuff. Or replace it properly.

### **Rule 3: We cannot go vertical unless it is less than 196y from the base space**

The way we walk is odd. In the granny SDK it is described as moving into a field. Each time the program looks if the point we intend to go to, allows us to go forward and upward. So a wall at 89.99 degrees can be climbed yet 90 degrees not. Clearly this created some odd issues in the basic zaby that needed a forgiving zone. We had to be able to step up the little platform near the fire. So that exclusion zone for the No 90 degrees rule is about 196y above the floor. In a basic zaby the floor is at -548y

Try this... In a zaby make collidable flat plane. Position -345y. You should be able to walk up no problem. Implement this on a bed or couch so you can not only lay there, you can also have someone walk over your back or dance on it. Obvious in a club this is also good fun... do the math though...

### **Rule 4: We do not walk on our feet... we glide by our neck**

Since we really are some odd dot around our neck we need really two things: one soft smooth ramp for our neck to glide over... and one that looks like an optical illusion of a stair. So to help you NOT look at the textures ... On the State look for Fade and put it at 128. This will just show you the object... yet vague enough to force you to look at what really matters: the red lines AT THE TOP

### **Practical part**

The Final tricks will be explained to you in the practical training. We will use a bug in the editor to allow us to quickly line up the props we need to build stairs, bridges and rivers. You will enjoy !

### **Post Script, or why to maintain the secret**

I hope you value my time and energy to discover those tricks... and expect you to keep it a secret. It is in the best interest for you and for a few others to be able to quickly, reliable and repeatable create places that are worthy of a visit. You will find that you will rapid earn back your investment by helping other frustrated decorators who after days of struggle and blaming everyone, except their own lack of this valuable knowledge. Happy building and happy earning with a grin on your face!!