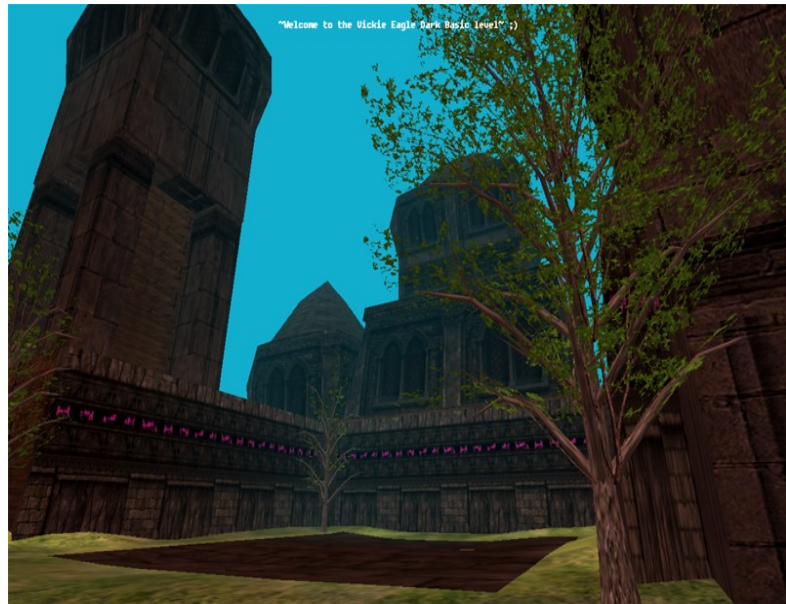


Mastering Truespace 7

How to move your Truespace models in Dark Basic Pro

by Vickie Eagle

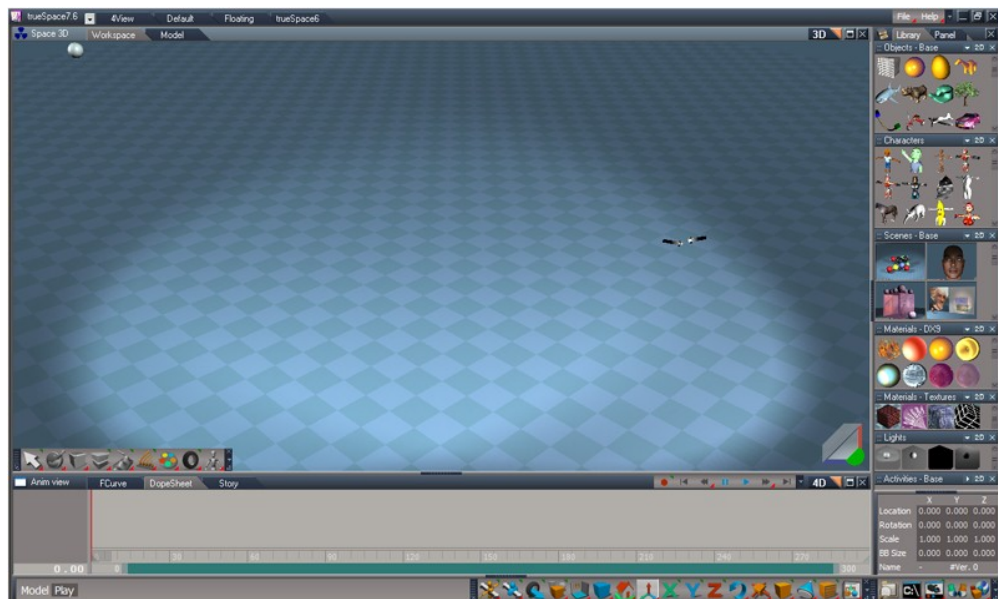
Welcome Dark Basic Users to the Vickie Eagle Truespace Tutorials, In this first tutorial we are going to build some basic landscape models and move them into your Dark Basic Pro engine . The Techniques you will use here can be applied to any number of applications for game development. I have spent several weeks studying the construct of the Dark Basic engine to get a better understanding of how models are loaded and used inside this engine. In the following pages I will reveal what I have learned . To follow along with this tutorial you will need to download Truespace 7 and install it on your computer. Truespace 7 can be downloaded from the official Caligari site at <http://www.caligari.com>



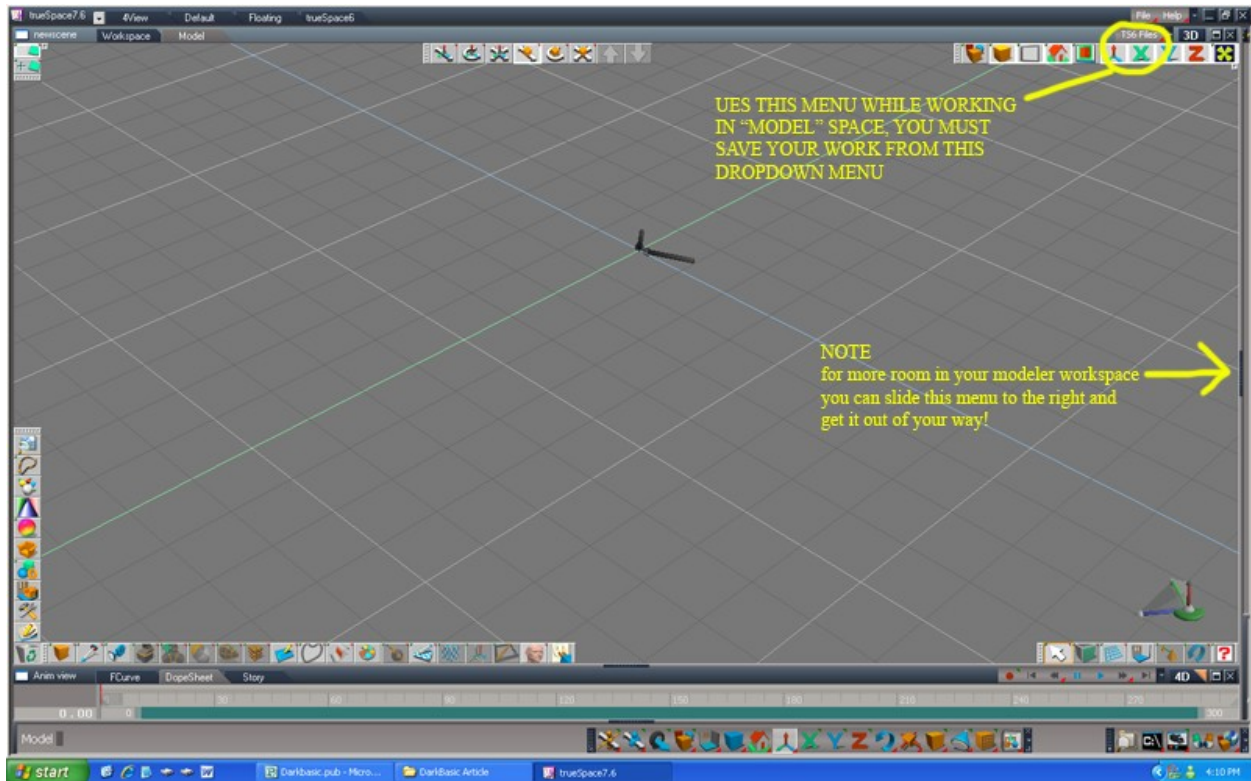
First lets start with some basics of Truespace. Setting up your workspace is an a very important part of getting your work flow going. You must also have a good working tool set that you are comfortable with. In my travels I have learned that most professional video game developers have tool sets they use in order to produce what you see in today's commercial games. Tool sets include modelers, animation programs, Paint programs and file format converters. In this article we are going to discus and work with the modeler which in this case is Truespace 7.6.

One of the first things you will want to do with your modeler is set up the workspace Truespace 7 comes with two environments you can chose to work in. For this exercise we will be working with the “Model” side of Truespace. The other side of Truespace is called workspace which requires a render engine to get the full effect of what it can do with normal maps and .D3D textures, so all of the modeling we will be doing will come from the Model side of Truespace.

Here is a screen shot of the Workspace side of Truespace



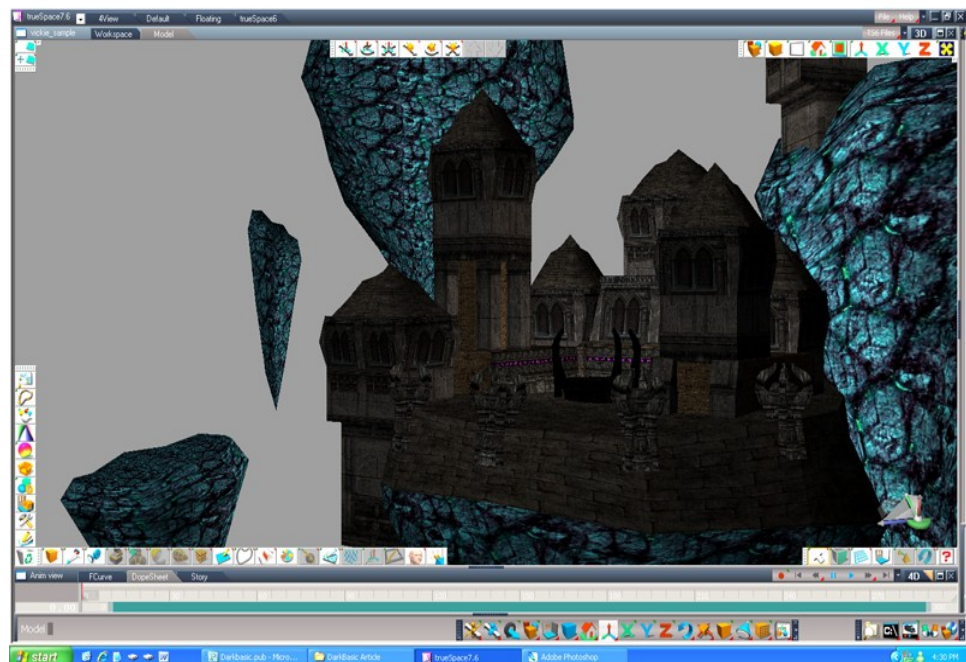
This is a screen shot of the “Model” side of Truespace



This is very important! You must save your work out through the TS6 Files menu while working in the model side.

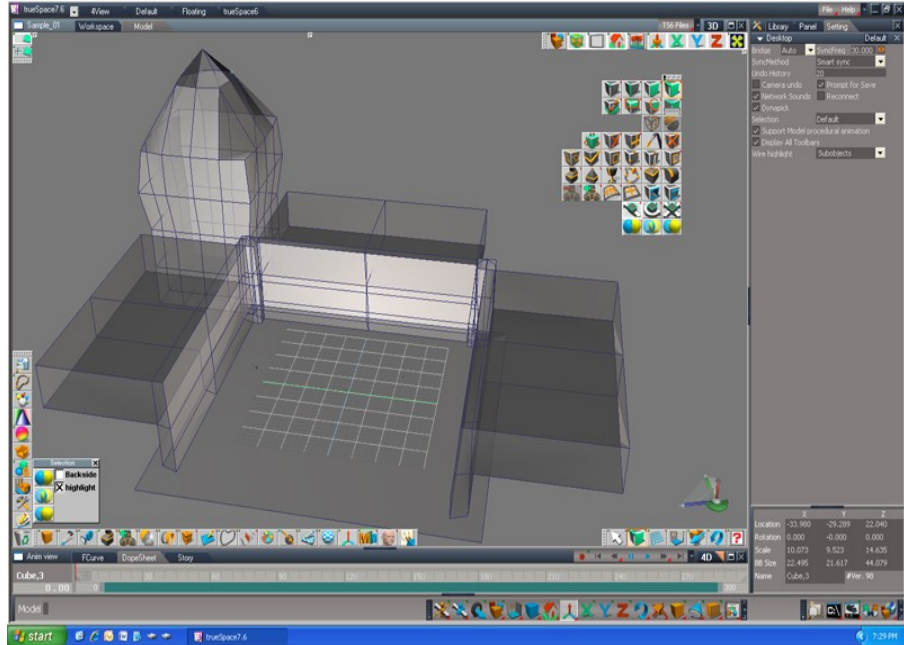


Ok, now you are staring at this screen with a large grid in the middle of it, do not panic! From here everything gets a lot easier. The first thing you will want to do is familiarize yourselves with the tools included with TS 7, and there are a lot of them. One of the best places to get this information is on the official Caligari website where you will find a helpful community and downloadable Video tutorials covering all aspects of the Truespace modeler. It is very important that you watch these videos as it will help you become very familiar with the operation of Truespace. Ok, enough said on that, let's move on! The object of this tutorial is to build this model and move it into Darkbasic Pro



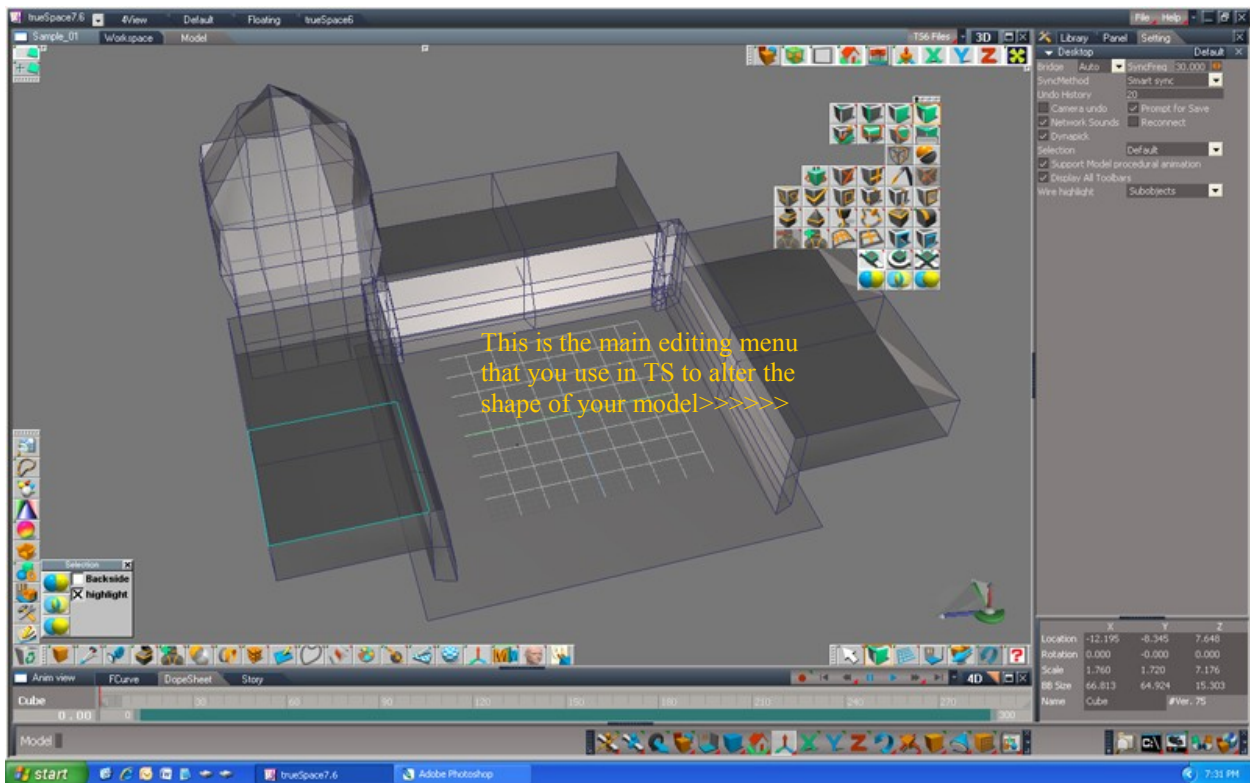
PART ONE: Building your world

I have included the "Sample_01.scn" file for you to load up in Truespace that will give you this model to start with. Simply navigate to the included file open TS (Truespace) make sure you are in the model side, click on the TS6 files tab and once the tab drops click on Load and then Scene. You will then be able to load the model into the 3D environment.



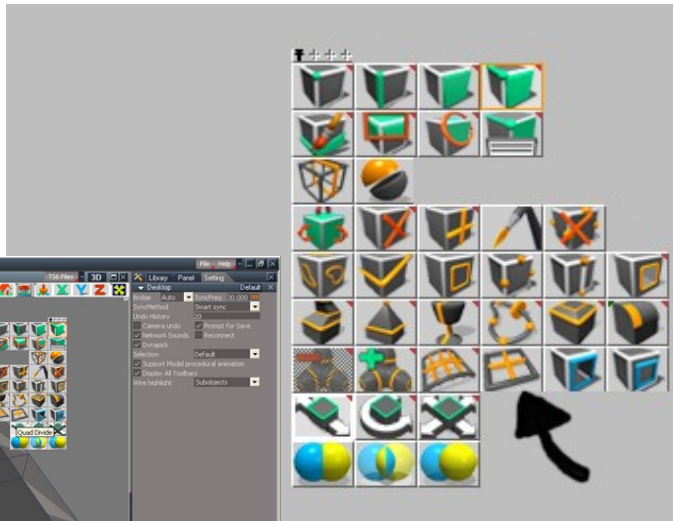
If you did it right you should be looking at the screen above.

Editing the model is fairly simple the tools in Truespace do most of the work for you. One of the main editing tools you will use in TS appears after you right click on the model. Look below to see what these tool look like.

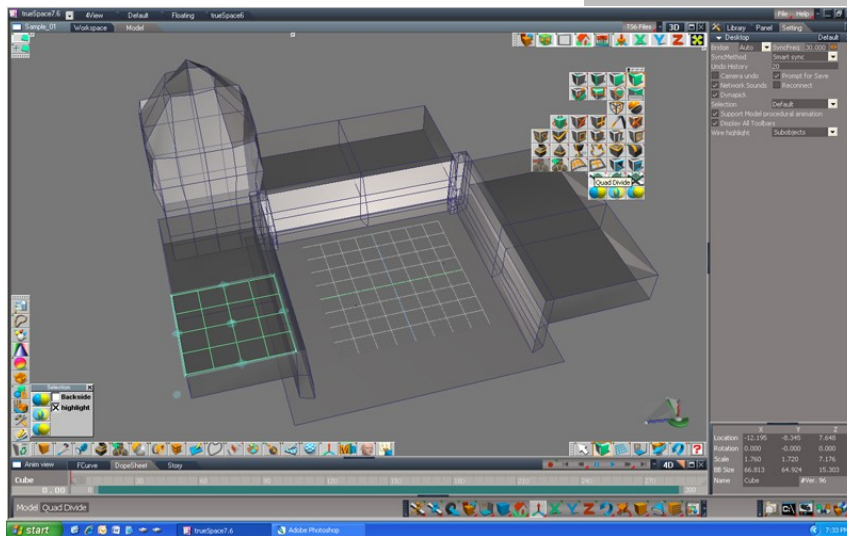


Now right click on the model and the edit menu will appear, once you see it you can edit this model. We are going to start by moving the mouse over the model. You will see that every face (a face is an area of the model) that you move your mouse over will turn green around the edges. To select a face or edge to edit just Left click on it. Once you have it selected you can edit that piece. This is the foundation of how Truespace works. No other modeler works like this. So if you have made models in other modelers then you are use to doing a lot more clicking to get the same face selected for editing. Remember that everything in TS revolves around selecting faces, vertices and edges as in all modeling.

Now once you have selected your face to edit (in this case just use the face I did) we are ready to begin editing this model. Look at the menu at the Right, the black arrow points to a tool called the “Quad Divide tool” if you click this icon twice you should have a face that is divided up to match the image below.

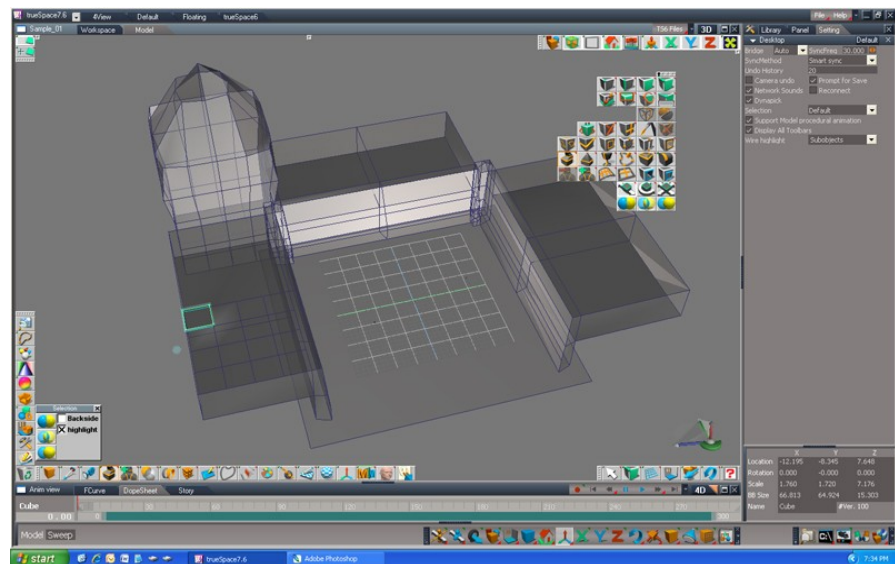


This editing menu is the most important thing to master when you are starting out modeling. Everything that is needed to edit a mesh can be found in these tools.



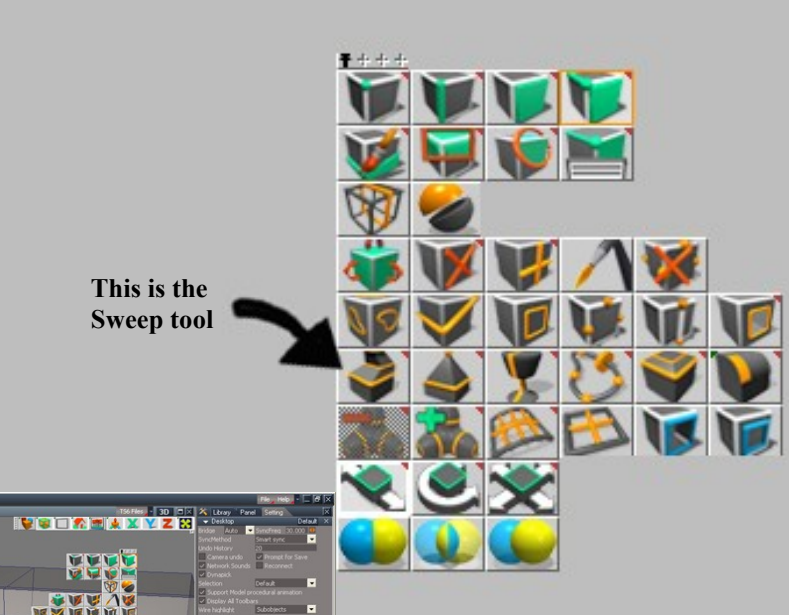
Now that you have your face divided you are ready to move on. First click that Space Bar to clear anything you might have selected then once again Right Click on the model so you can start selecting faces again. Navigate back to the face you divided and select the upper left corner as in the picture on the right.

We are going to add more to this face by using another tool called the “Sweep” tool. The Sweep tool add another face to the one you just selected. You can set how high the sweep will be by Right clicking on the sweep icon and opening its submenu. But that’s a little advanced , lets keep it simple.

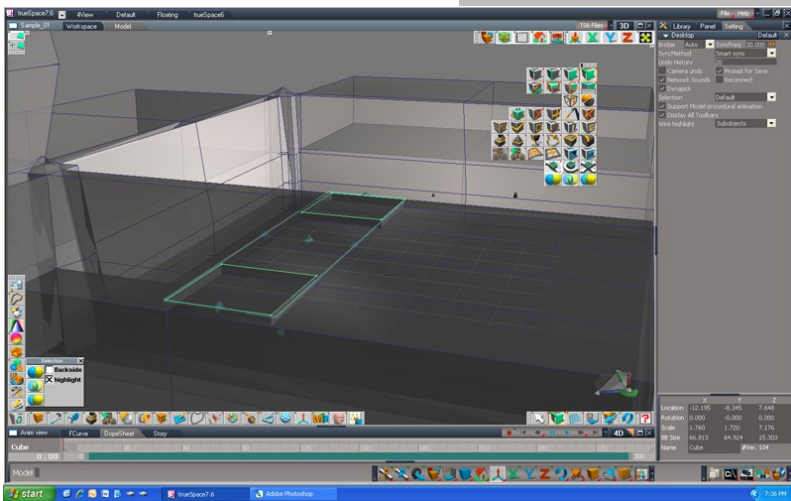


Funny story, I had to go back and watch the way I used these tools so I could write this tutorial because I do it so fast I never think about it. For me its like molding clay if that makes any sense.

Now that you have your face selected I want you to hold down your “Shift” key and select the face just opposite of the one you just grabbed. This is a neat trick that will allow you to work with mutable faces at the same time. Its really a big time saver for anyone doing production modeling and common practice with anyone that works with models. Now click the Sweep Icon once. This will make the new faces.

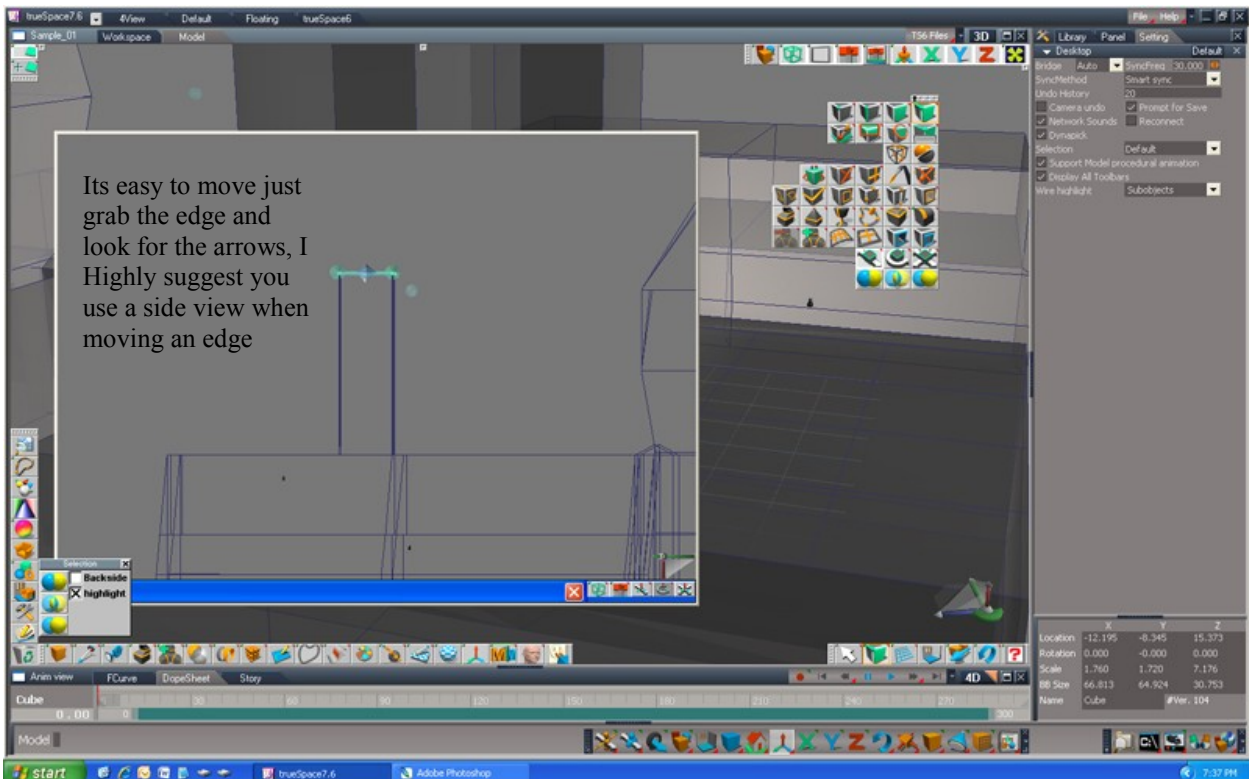


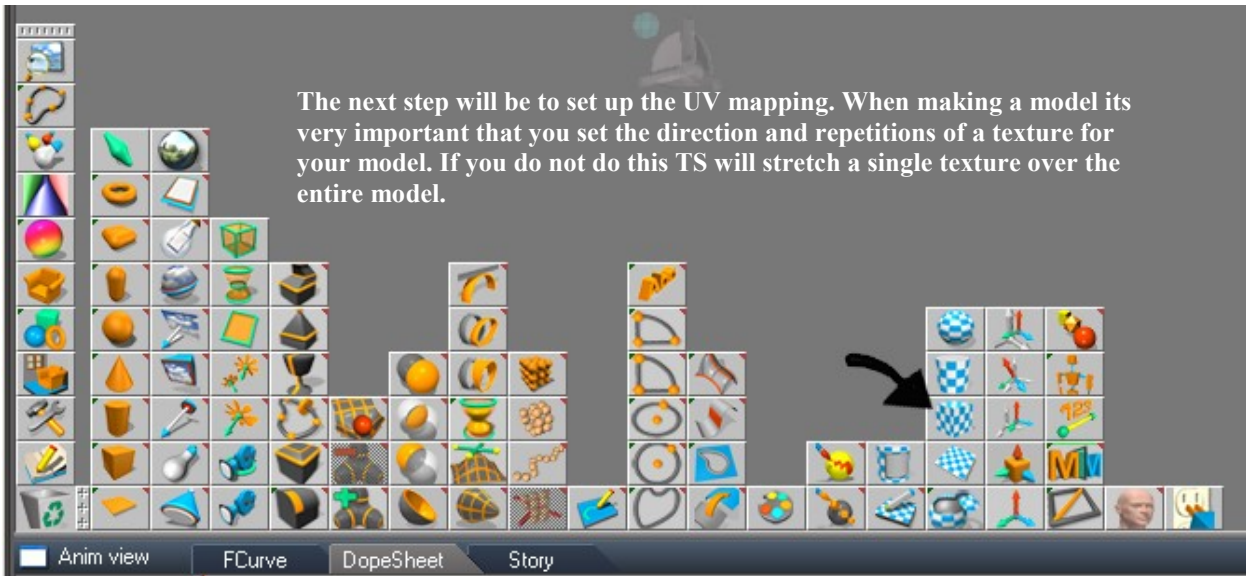
Look below , your model should look like this with two faces selected.



NOTE:
The better you get at using the above tools the easier its going to be for you to make very cool models.

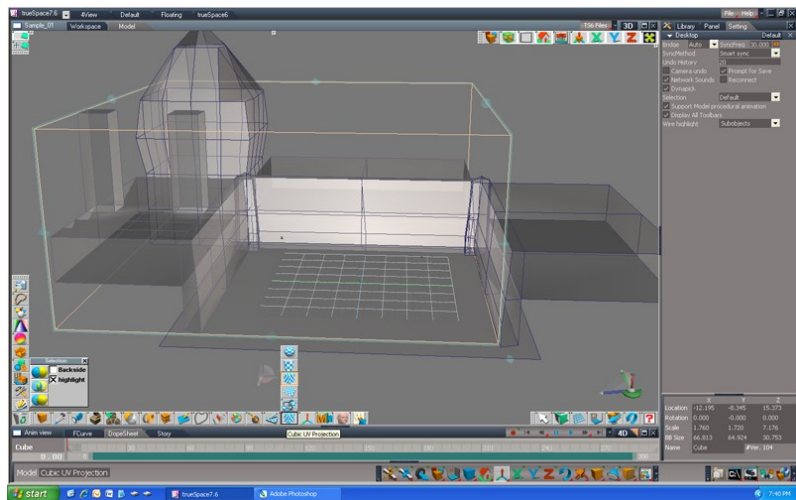
Now grab the edge of your newly created face and move it upwards





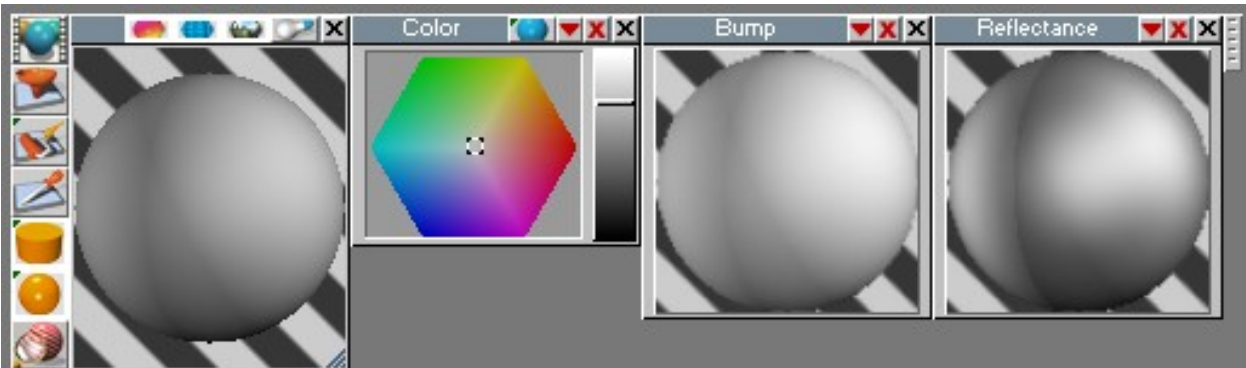
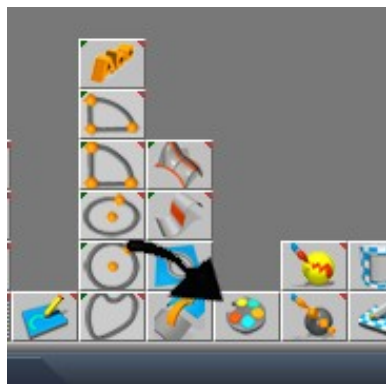
Now press the icon shown in the screen shot above to set the UV mapping to a box shape. This will allow the textures to be placed on the model facing the right direction without being stretched .

Now that you have a UV box you can grab the edges of it an pull the texture into place or have the texture repeated in order to set it up to look natural.



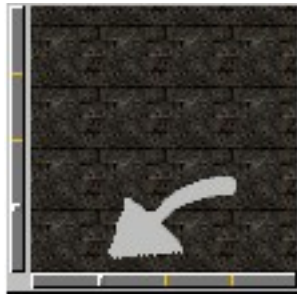
This menu to the left shows the icon you need to select to add your own texture and paint your model. This icon is called the “Material Editor” and does just what it describes.

Below you see the Material Editor, you should see this after you click on the material editor icon

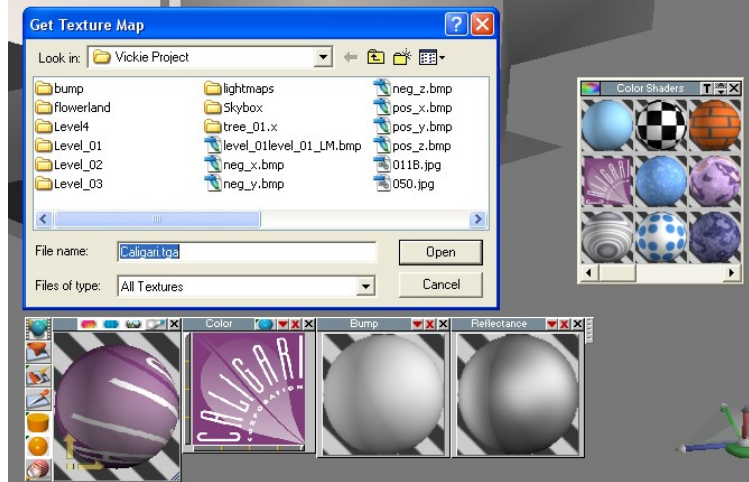


Left click where you see the Caligari logo to open the “Get texture Map” window. From here you can select the texture you want .

After you select your texture map you might want to set the texture repetitions. You can do this by using the little slider bars attach to the texture map window, see below

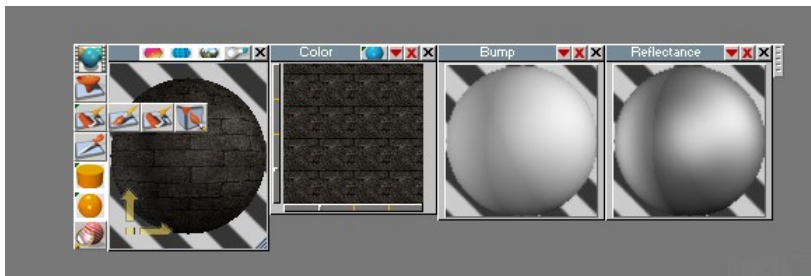


Slider bars >



You should now have the texture selected and the repetitions of the texture set. Remember that your real texture setup is done with the UV editor.

You should now be looking at the window below in your TS model space

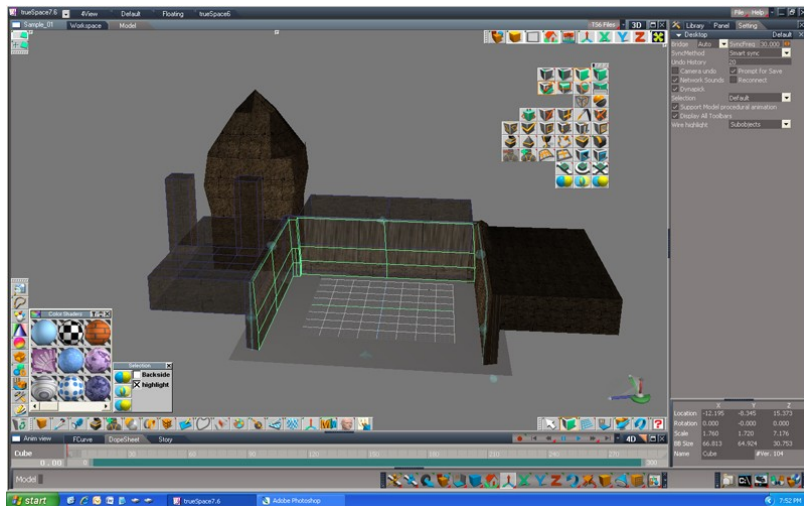


I'm not here to teach you to model so I have went through this pretty fast, but if you will work with the tools I have shown you it will give you it will cut the learning curve way down.

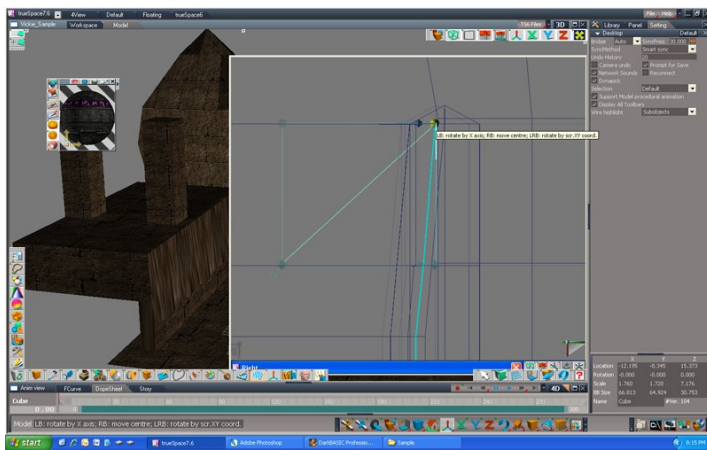
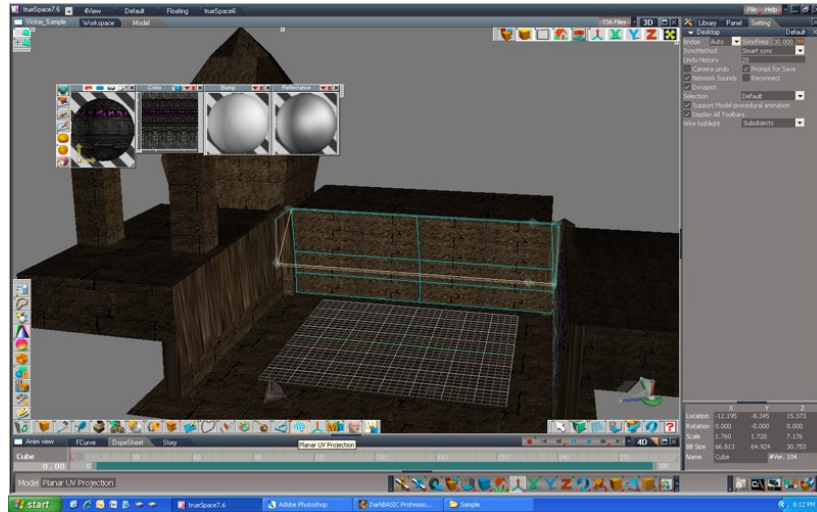


Do you see the little paint brush icon, if you use that tool you can paint your texture onto any face on your model. Very handy if you are making a room that requires several textures. Not to mention the whole model will port right into Darkbasic without having to make any modification.

Now you should have your texture on your mesh and be ready to move it into the Darkbasic engine. Just remember that while you are painting textures on your model you will need to set the UV mapping for each of the areas your are working with. You should do this as you are working with your textures so you don't forget a piece and end up with stretch marks



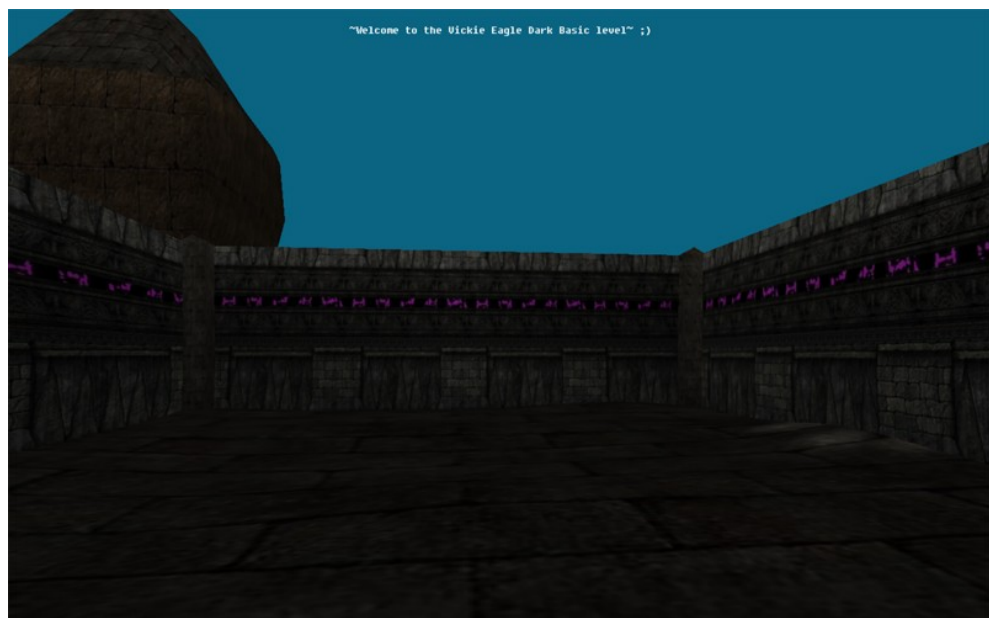
Working with the UV mapping is really easy, you just want to make sure you have your texture facing the right way. So when you are do a wall for instance, use the flat plan UV mapping to target just the area your want.



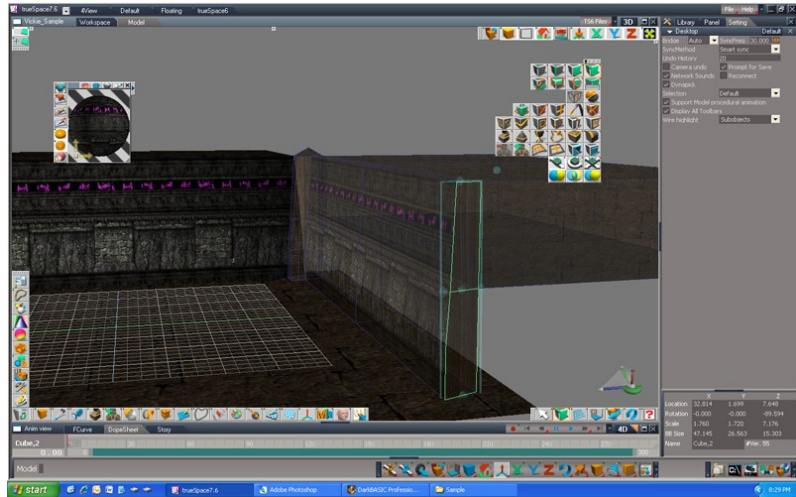
While you are setting up your UV maps you may have to move or rotate the UV map to get it in place where you want it. In this picture you can see how the UV map sits at a 45 degree angle. Simply grab the edge and pull it down using the rotate ball located at each corner of the UV map. You will work with this tool a lot if you make models so it will not take you long to master how it works. Always remember to save your work often while manipulating your model because modellers do crash.

Now using the “LOAD OBJECT” command in Darkbasic Pro load the model you have been working on and take a look at your work!

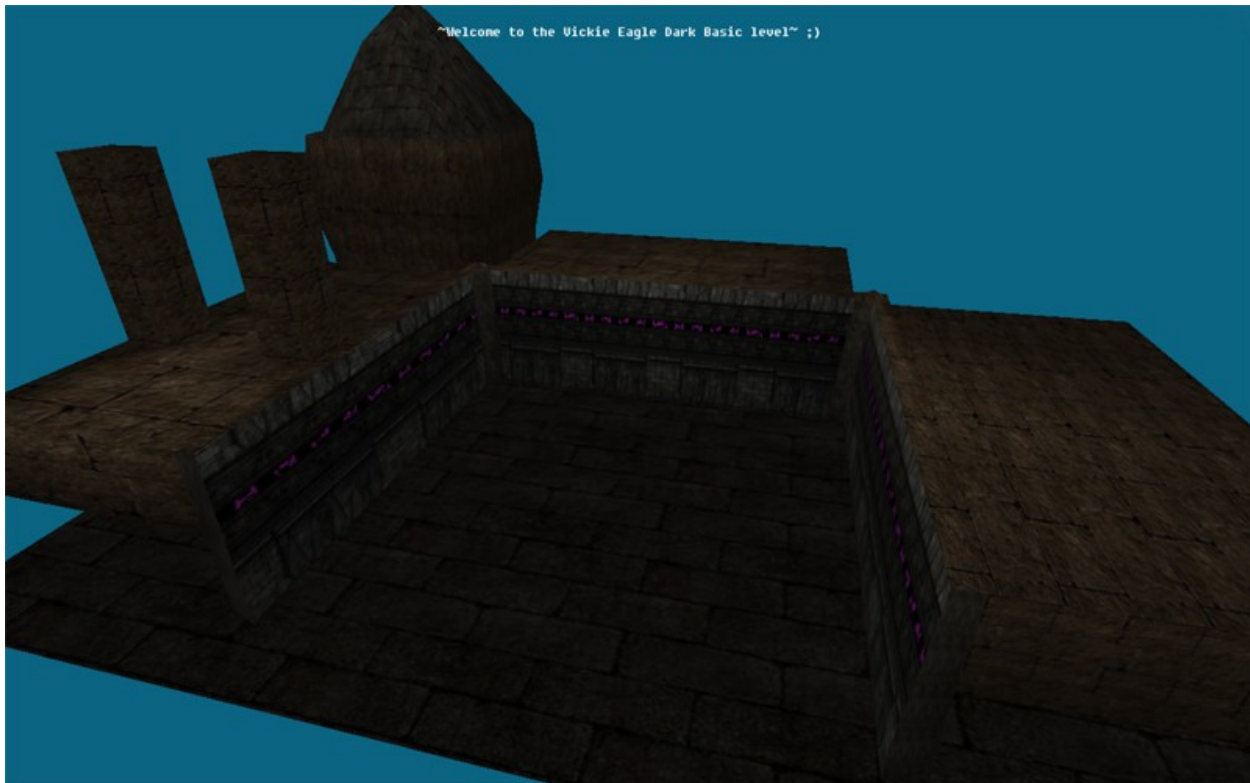
It should look something like this!



Now before you start adding more to your model again make sure all your UV mapping is set. You don't want to have to come back later and fix thing you missed, to do that makes it hard and modeling should be fun like working with clay. These little details make all the difference in the world.

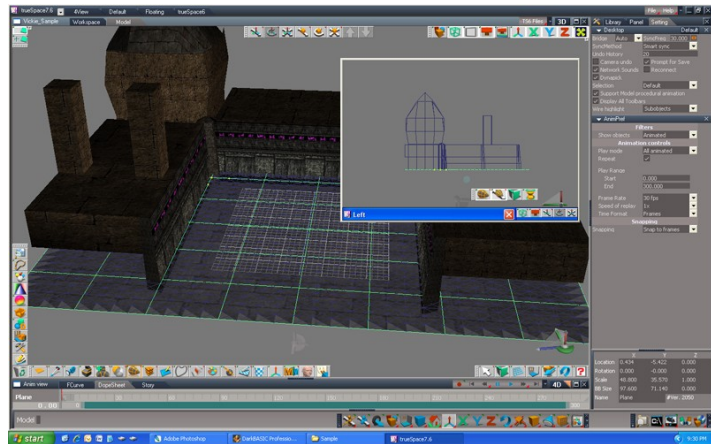


Now you have your UV mapping set and you have loaded your model into Darkbasic pro. Its all so easy! You could build an entire level and load it into Darkbasic Pro strait from Truespace with one line of code.

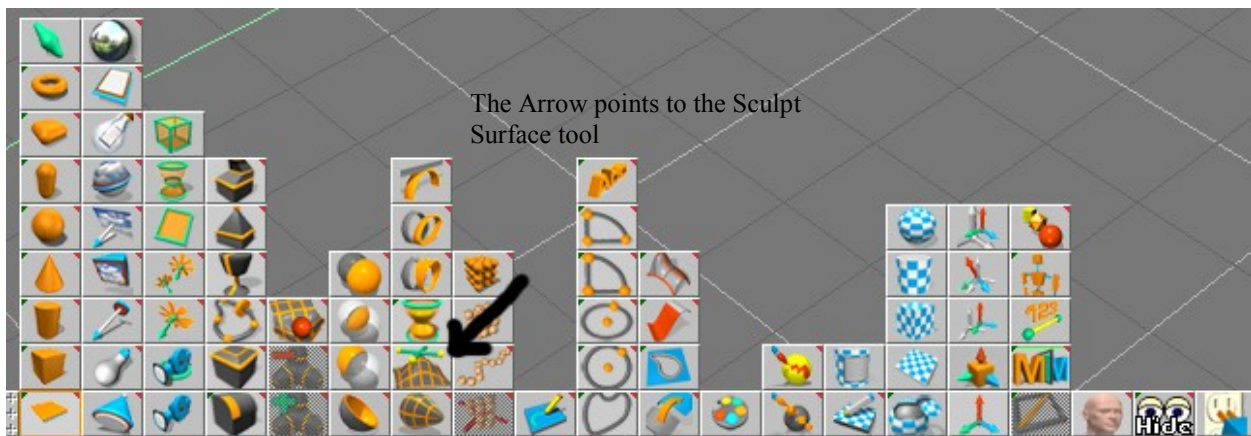


Now that we have a basic building put together lets take and add some more models to it so we can load the whole thing with a few lines of code. I have found that it is a lot better and faster to load your other models into Truespace so you can place the models where they are suppose to be rather than use code to set the position of the models. Of course if you are making a game where it requires you to know the exact location of a model this will not work for you. But if you are placing trees or other buildings its perfect.

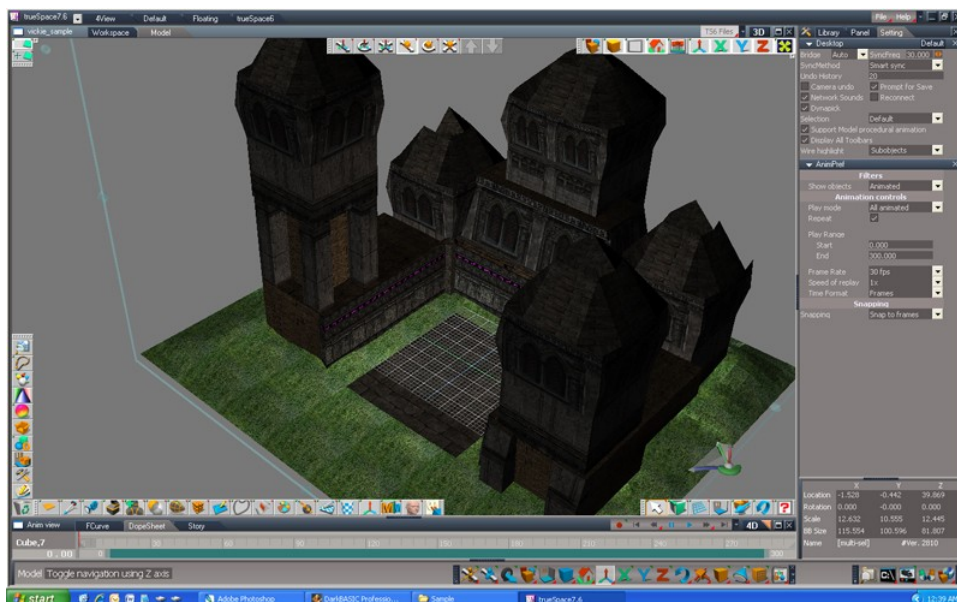
Now before I start adding other models there is one more thing I want to do. I am going to bend the ground to make it look more natural and then paint it with a grass texture. I have included all the models and graphics with this tutorial so you can practice with them. To bend the ground and make high spots and low spots use the same method you read about in the beginning of this tutorial. Again I will say that the foundation of modeling revolves around the manipulation of vertices



Once I divided the ground into several smaller faces I used the “Sculpt Surface” tool to bend the ground into the shape I want. You guys are going to like this tool its really fun to use. But you need to remember this. The “Sculpt Surface tool” sets your mesh into an animated state, so to get out of it just click on the sweep tool and a box will pop up and ask if you want to remove the animation from the model. Just say yes and you will be able to get your edit menu tool bar back.



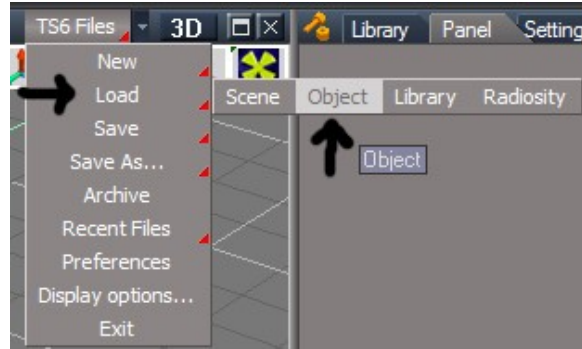
Now you should have a ground mesh that has some shape to it rather than a flat plain



The last thing I want to cover in this tutorial is how to add more models to your existing level you just created. You really don't want to make everything in the same project because you may want to add shaders to items, and to add shaders the models need to be separated so you are not applying a shader to the entire level

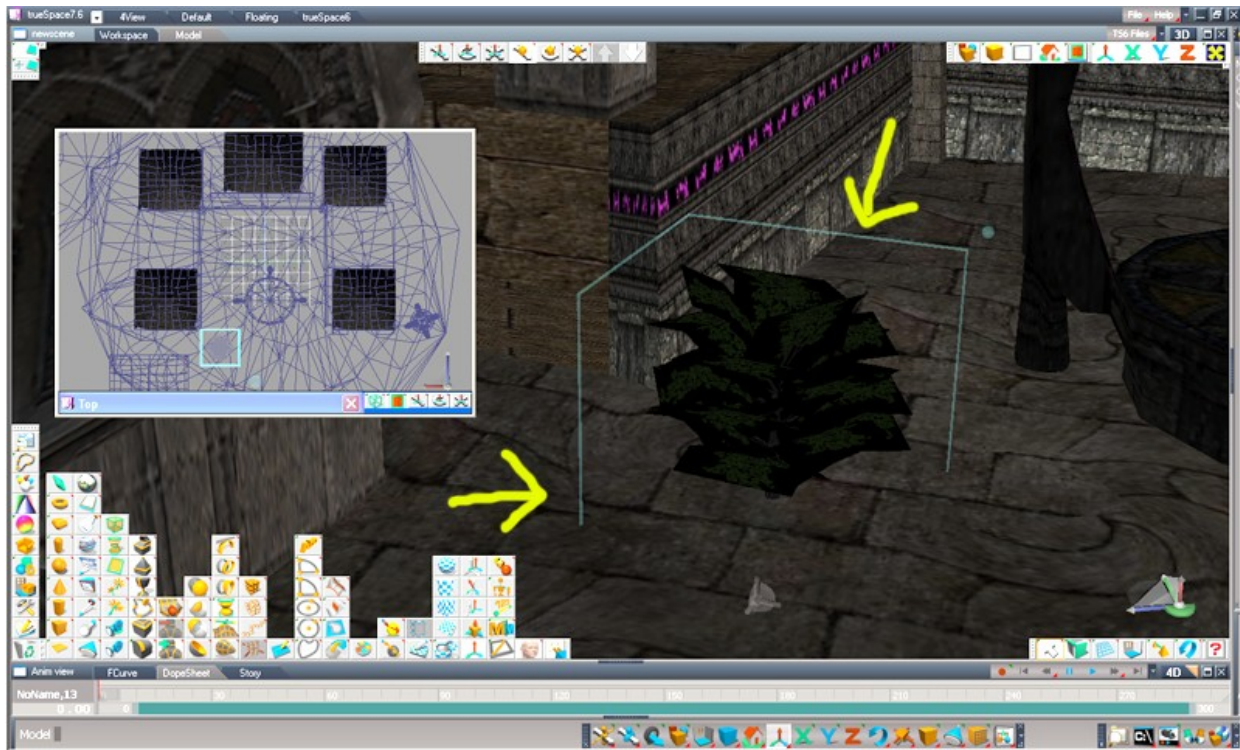
Adding other models to your lever is a breeze with TrueSpace. Just use the load object, this will open a menu that will allow you to chose the format you want to load. I always use .X or 3ds or just the standard .Cob which is native to Truespace. This way you get all the textures and everything moved in to your level.

Once you move your model into your level just set it where you want it to be in the game. It will be the same in Truespace as it will appear in Darkbasic. Don't worry about alpha textures not showing right in TS. When you load your level in DBpro you can set the alpha levels there for that particular model.



Now that you have your models loaded into TS and set in the placement where you want to see them in the game. The next step is to save your level in parts so you can assign alpha textures and normal maps to that parts you want to see them. We will do a alpha textured tree so that I can show you how to save your model to work in DBpro.

Now load the scene file "Vickie_Sample.scn" and then load the "DBtree1.x" file from the sample folder. You should be looking at the scene below. See the blue box that surrounds the tree model? It's the select box that allows you to move and resize the model. Its also a way to let you know you have this model selected. If I save this tree right now with the "Save Object as" function from the TS6Files menu (see above) I will only save the tree model and its location will also be saved. This is the technique you use to save parts of a model so you can add special effects to them like bump maps or alpha textures. Once you save this model as an object you are done with it, do not save it with your whole level. Just select all the other parts of your model and do a save as on it as well to have your level ready to load.



To select multiple parts of a model just hold the "Shift" key down and select each part. Then once you have all the parts selected do a "Save Object as" and save it out as a .X file format.

Now that you have saved your models and are ready to load them into your game we get to the easy part, loading the models into Darkbasic Pro. The code is very simple:

```
`*****  
`MODELS  
`*****  
` Load world model and scale it  
load object "World.x",1  
scale object 1,500,500,500  
`this command make everything more rounded  
SET OBJECT SMOOTHING 1,75  
`-----  
`load object "/DBtree1.x",22  
set object smoothing 22,75  
scale object 22,500,500,500  
SET OBJECT TRANSPARENCY 22,4  
`-----
```

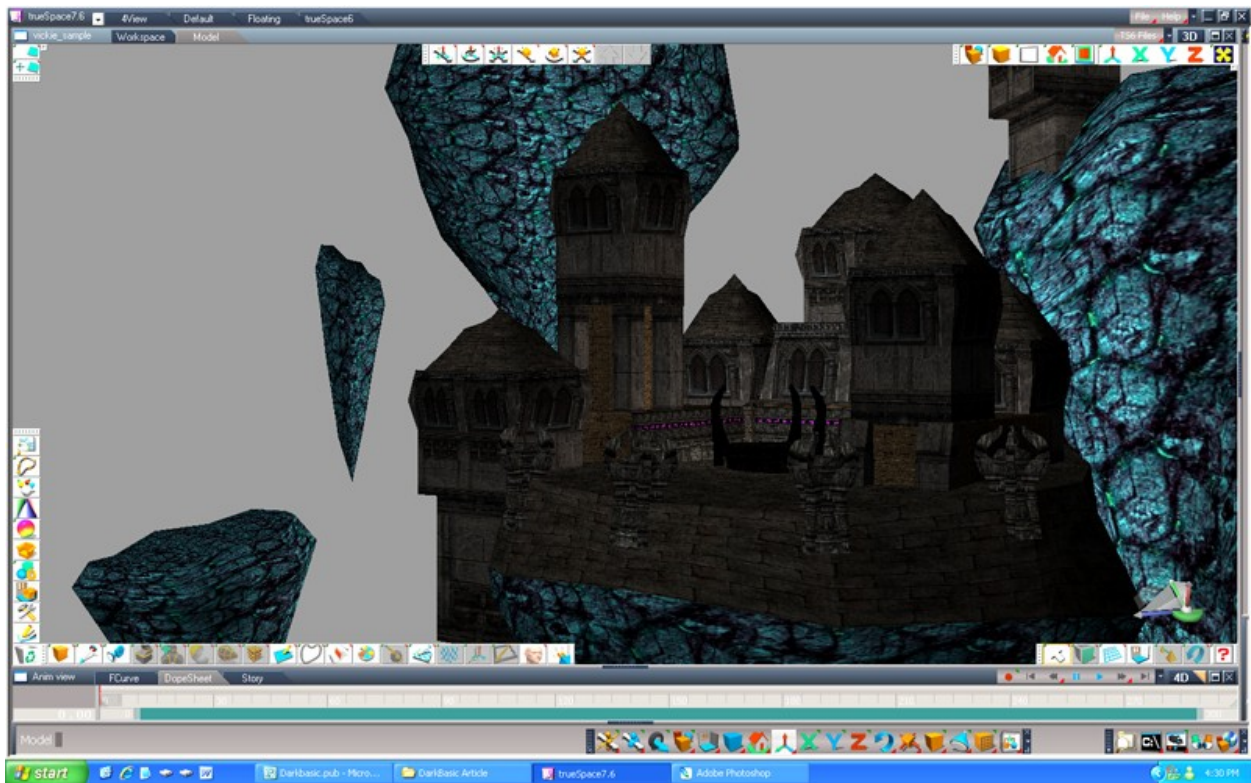
You will want to set the level up just like you see above to get the desired effects.



Now run your level and you should see something close to this picture above! And that's it! You can make anything you dream up. I again cannot emphasize enough how important it is for you to go through the Truespace tutorial library. There you will find techniques used by the pro modelers at no cost to you! Those videos use to cost \$40.00 each. So get them while you can.

I have included the full source and all the models and textures for everything you have seen here, so dig into all those models and make something cool. I would love to see what you guys and girls come up with.

So you made your first Darkbasic level inside Truespace 7.6, its now time to expand on what you have learned from this tutorial and add more pieces to your world to bring it to life. All media you see in this tutorial is included so you will be able to take it apart.



And again, everything to make this level is included, so experiment with the model and get familiar with building worlds and soon you will be really fast at it . Make sure you watch the tutorial videos on the Caligari site, they will help



I hope you enjoyed this tutorial and that you found it helpful in your quest to become a better game developer. I have really enjoyed working with Darkbasic and look forward to doing more with this engine.

Always~
Vickie Eagle

Everything I have included with this tutorial can be used in any of your Darkbasic games under an open license and may be altered or added too in order to make more custom levels and object, you may not sell these models included with tutorial as single models or in a model pack or as an altered version with a different name. Thank you.