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Subject: W3D Blender

Posted by [yesfish](#) on Tue, 22 May 2012 19:08:42 GMT

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I'm making a W3D blender suite that should enable Blender to become a legit way to author renegade content. This addon is planned to both import and export w3d files as well as render the materials in a way that's similar to the game engine.

Get "Revision A" import preview, and first code release!

[https://github.com/huwpascoe/w3d\\_blender](https://github.com/huwpascoe/w3d_blender)

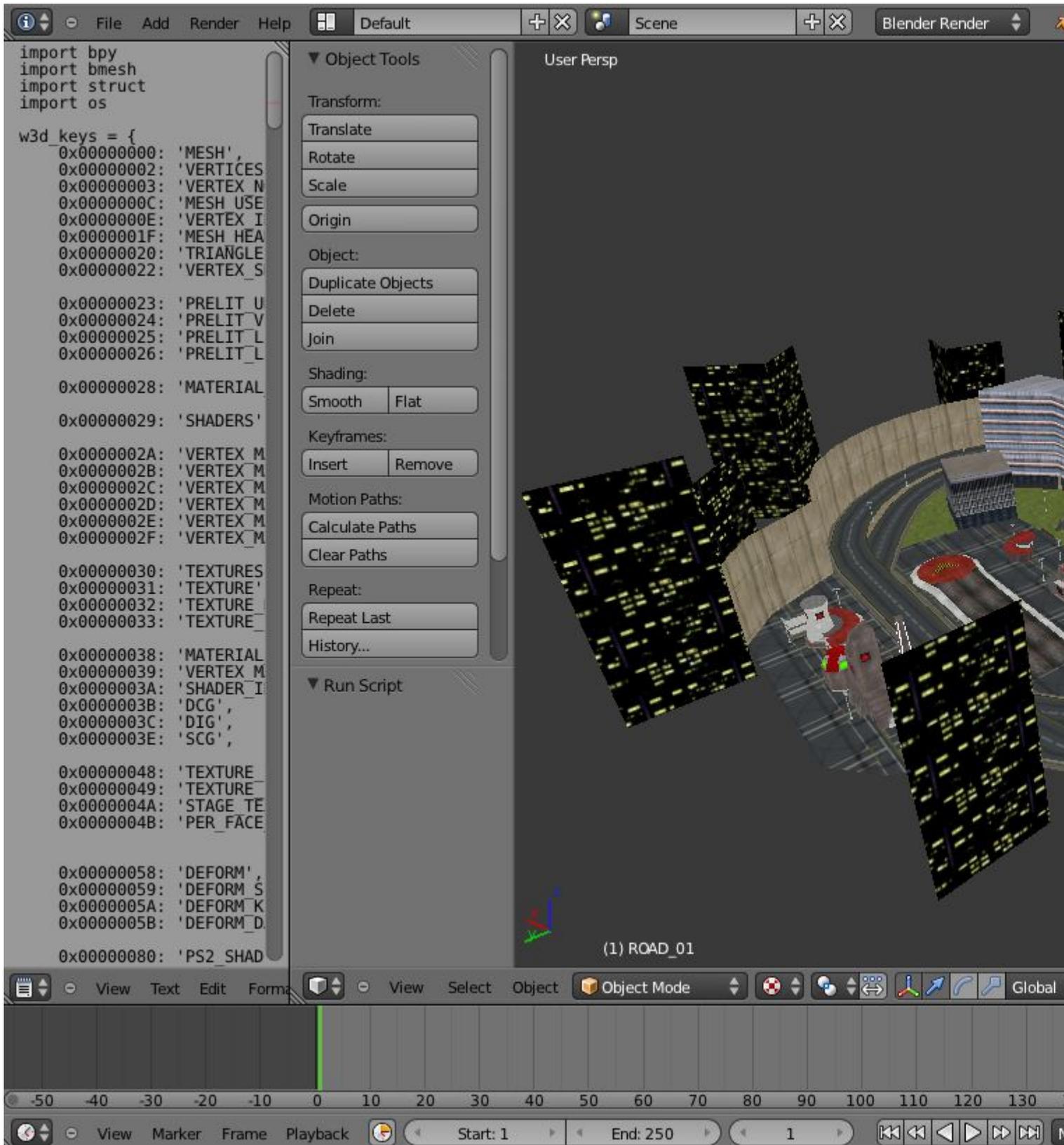
canyon

glacier\_flying

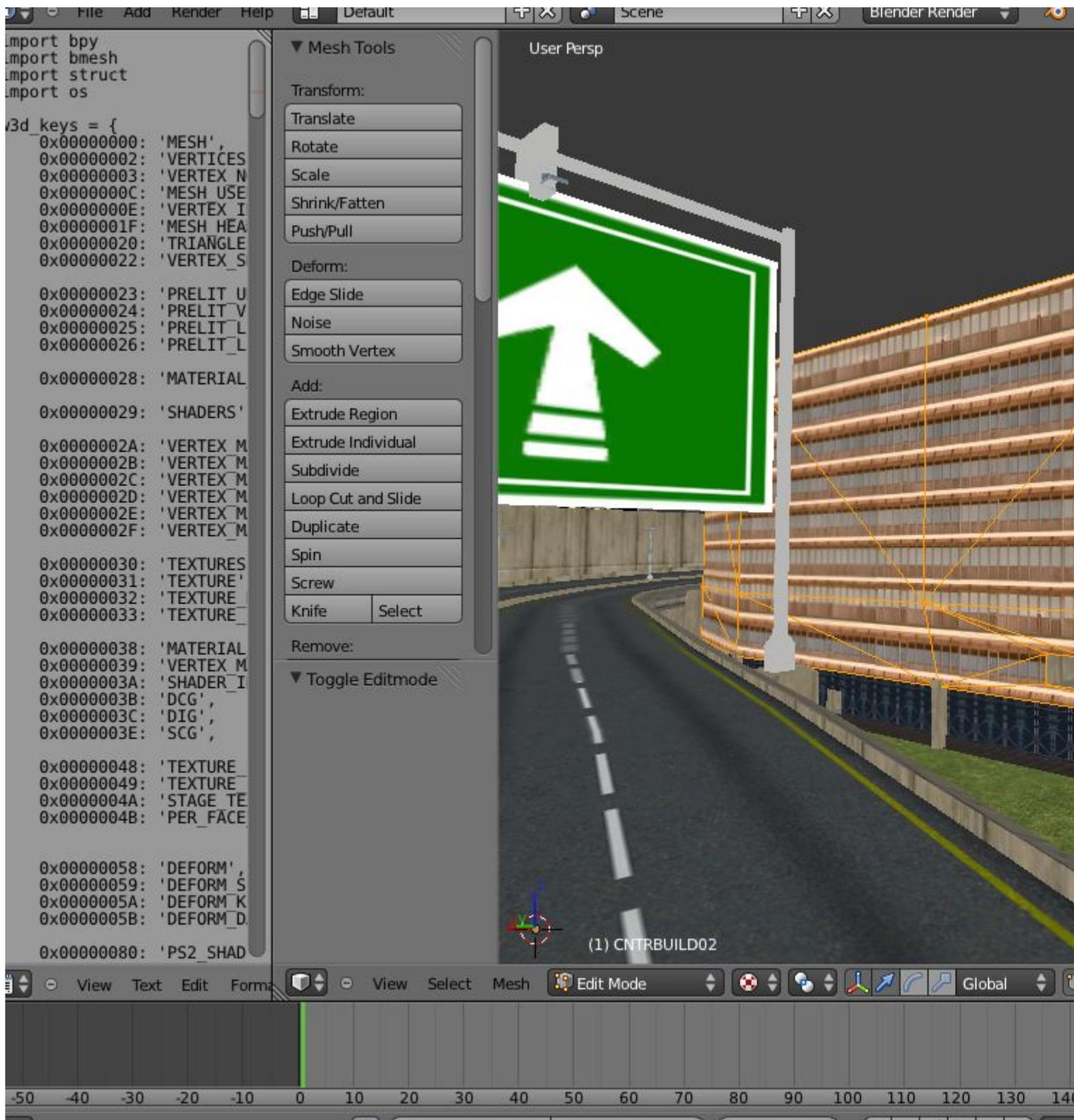
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### File Attachments

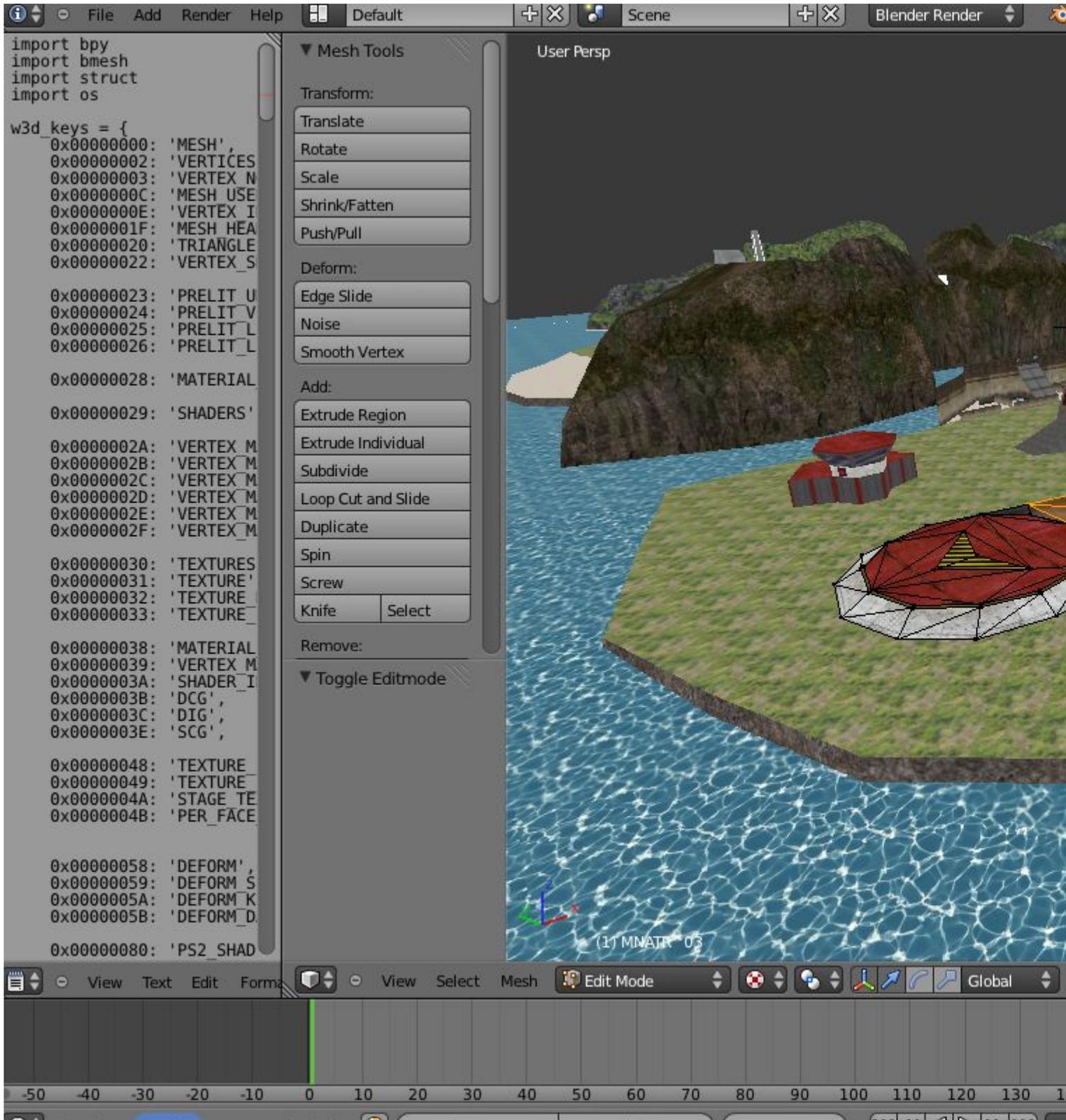
1) [w3d1.JPG](#), downloaded 1198 times



2) [w3d2.JPG](#), downloaded 1202 times



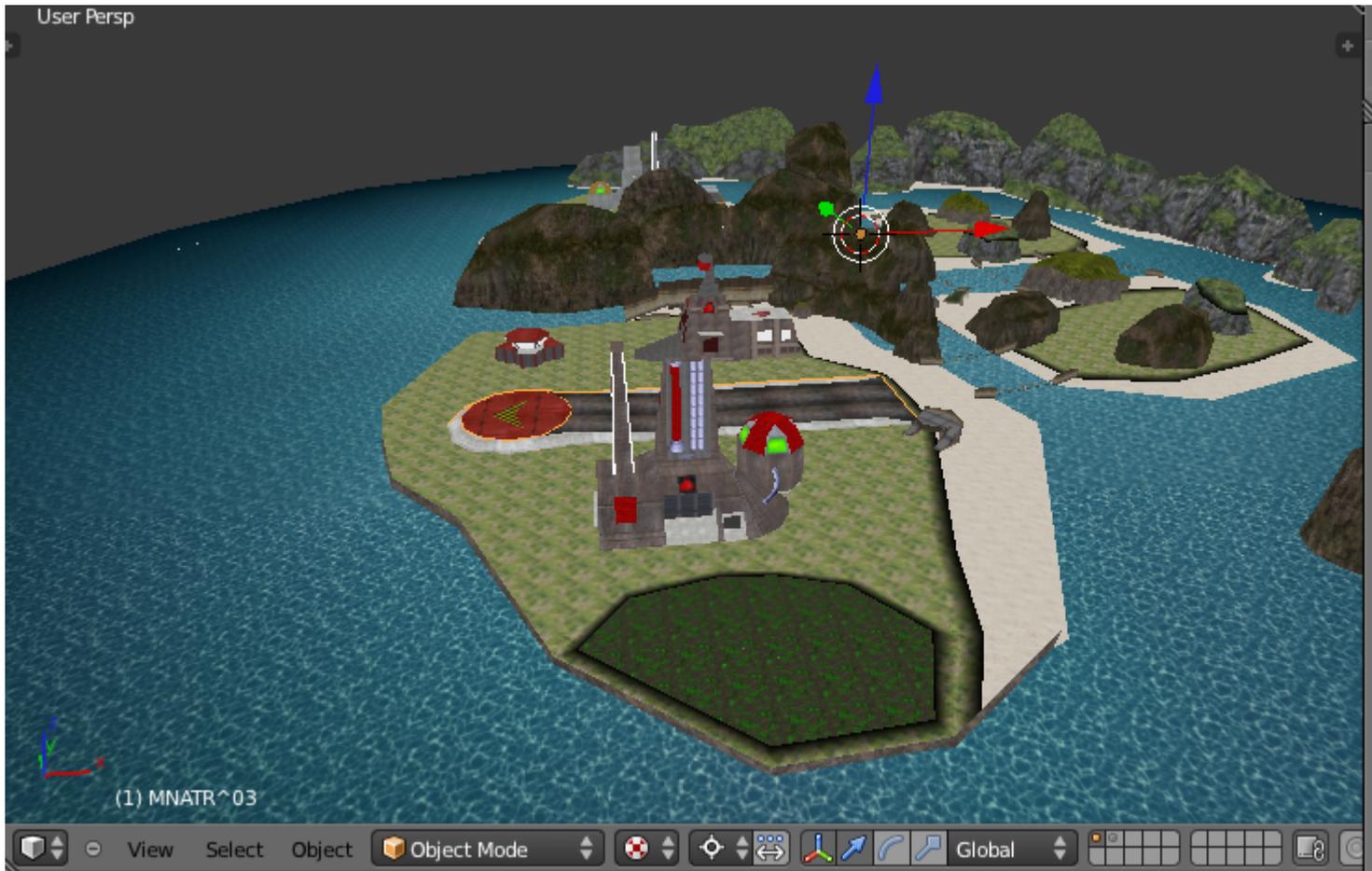
3) [w3d3.JPG](#), downloaded 1418 times



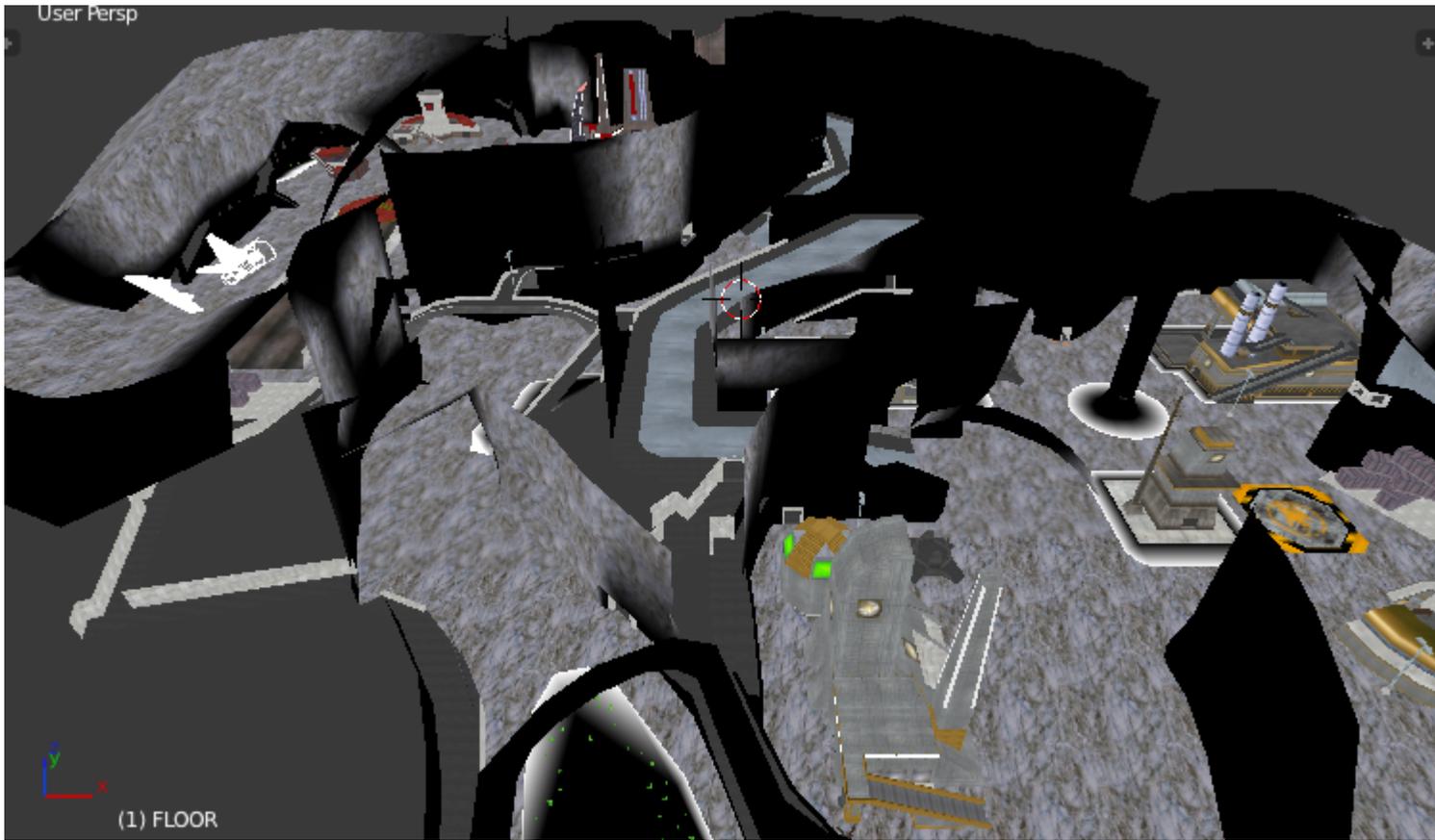
4) [w3d4.JPG](#), downloaded 1196 times



5) [w3d5.PNG](#), downloaded 939 times



6) [w3d6.PNG](#), downloaded 2244 times



7) [canyon.JPG](#), downloaded 2782 times



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Subject: Re: W3D Blender  
Posted by [Omar007](#) on Tue, 22 May 2012 19:33:44 GMT  
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I can't really help you here but I just have to say that that is really awesome!

I hope you get this working

Now someone please help this guy

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Subject: Re: W3D Blender

Posted by [Aircraftkiller](#) on Tue, 22 May 2012 21:22:06 GMT

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What benefits would Blender have over a pirated copy of 3DS Max 8? Blender's interface has always been annoying.

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Subject: Re: W3D Blender

Posted by [yesfish](#) on Tue, 22 May 2012 22:23:13 GMT

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Both blender and max are annoying in different ways IMO. I'm doing this because it's fun. Maybe I'll make a 3dsmax9+ kit in future if it works out. : p

Progress tonight: Materials can have multiple textures. Material vertices don't blend - so they're actually per face, duplicating vertices at borders.

Looked into the duplicate materials. They seem to be perfect duplicates. My favourite test subject, the airstrip, has: concrete, tarmac, cement, lightmap, concrete, tarmac, cement, lightmap.

What's still not clear is why. I thought, maybe it duplicated for every shader, but then you have other models which have varying numbers of material pieces...perhaps it could even be RenX weirdness?

Something interesting though. Ignoring the duplicates, materials don't overlap... except for the lightmap, which blankets everything. Lightmaps could well be a special feature that they've just shoved in there, if that turns out to be the case then it can be treated as such.

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Subject: Re: W3D Blender

Posted by [Gen\\_Blacky](#) on Tue, 22 May 2012 22:39:43 GMT

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Omar007 wrote on Tue, 22 May 2012 12:33I can't really help you here but I just have to say that that is really awesome!

I hope you get this working

Now someone please help this guy

^

very cool yesfish I hope you see this project through. Do it for the lulz.

---

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Subject: Re: W3D Blender

Posted by [Mad Ivan](#) on Wed, 23 May 2012 00:14:24 GMT

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Good luck with with this yesfish and keep us updated! I think jonwil and Saberhawk are the best people to talk with, when it comes to W3D

Aircraftkiller wrote on Tue, 22 May 2012 14:22 What benefits would Blender have over a pirated copy of 3DS Max 8? Blender's interface has always been annoying.

IIRC, 3DS Max 8 uses MaxScript \*only\* for scripting. Blender and newer versions of Max (and Maya) support Python, which (apart from being a very lovely language and by what I can tell what yesfish is writing the W3D suite in) is widely used and easy to learn, so people making W3D content would have access to a pretty big database of free scripts (and could make some of their own, tbh).

I personally haven't tried Blender yet, and I'm not sure how it's features will interact with the W3D stuff, but depending on how yesfish pulls it off you could make use of the built-in game engine (which, I've been told, is the feature that makes it stick out, when compared to other modeling packages).

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Subject: Re: W3D Blender

Posted by [Mauler](#) on Wed, 23 May 2012 03:49:53 GMT

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Cool stuff man! I would be very interested in a newer version of W3D tools for recent versions of Max. Keep up the good work

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Subject: Re: W3D Blender

Posted by [yesfish](#) on Thu, 24 May 2012 02:04:42 GMT

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Latest update.

99% sure the duplicate VERTEX\_MATERIALS are an exporter quirk and can be ignored.

Here's the theory: Mesh is broken into triangle patches by duplicating vertices. Each patch gets its own custom layering.

every patch:

  every pass:

    vertex material link

    shader link

    texture link

    uv map

All those links there are mix and match, you get a large sandwich of information. Which is great, if you're a game engine.

So I think the best way to get anything meaningful is to treat each uniquely layered patch as a separate material, on export, re-combine and sandwich everything. It seems this is how RenX works.

Will post further updates when I have something new to show. Probably by early next week.

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Subject: Re: W3D Blender

Posted by [Jerad2142](#) on Thu, 24 May 2012 14:13:21 GMT

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Aircraftkiller wrote on Tue, 22 May 2012 15:22: What benefits would Blender have over a pirated copy of 3DS Max 8? Blender's interface has always been annoying. I have yet to find a copy of 3DS Max 8 (legal) as they upgrade only seem to sell the most recent release. And all the pirated torrents seem to contain viruses.

This will allow people who have things against pirating and aren't rich, or just don't want to risk getting a virus, to mod for renegade in something outside of RenX.

Plus I'm sure there are plenty of people that just hate 3DS Max's GUI.

And you never know, better import tools might come out of this in the end (ones that actually assign imported materials); and god knows that'd be nice.

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Subject: Re: W3D Blender

Posted by [yesfish](#) on Tue, 29 May 2012 09:35:20 GMT

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Seems that I lied, no images this time. It turned out to be a little more difficult and also life suddenly got busy but since last time I've managed to create a function that transforms all those layers into materials.

There are three rendering options which are simultaneously present to support different quality modes. Vertex Lit, multi-pass, multi-texture. Anyone know which is considered the 'best'? My instincts say multi-pass as it matches directly with RenX material editor. But multi-texture looks like it was added after multi-pass. Multi-texture is also a little weird, it could be an issue.

Plan of development from here:  
processed materials to blender materials  
uvmaps and vertex colors to blender  
clean up code and make it a module  
release first source preview

Second version should have object hierarchy, w3d exporting and hopefully some full GLSL previews of those w3d materials.

From there it's lights, all those other nodes and attributes and the final boss: vertex weights and animation.

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Subject: Re: W3D Blender  
Posted by [iRANian](#) on Tue, 29 May 2012 09:41:01 GMT  
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What documentation are you using?

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Subject: Re: W3D Blender  
Posted by [Mad Ivan](#) on Tue, 29 May 2012 18:00:34 GMT  
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Awesome stuff so far, yesfish!

Might I suggest using github (if it's not too much)? I haven't done any 3D stuff myself, but maybe people in general could contribute or fork from the project that way?

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Subject: Re: W3D Blender  
Posted by [reborn](#) on Tue, 29 May 2012 21:23:20 GMT  
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Really very interesting stuff. I'm surprised I've not seen @saberhawk sniffing round this thread...

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Subject: Re: W3D Blender  
Posted by [yesfish](#) on Tue, 29 May 2012 22:21:27 GMT  
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My documentation is this source code by Jonathan Wilson:

<http://sourceforge.net/projects/rentools/files/w3dview/>

After studying the source for a few hours, I'd got 3D models loaded. Then I started on the materials and 2 weeks later, same place, lol. Figuring out Blender has taken the majority of the time of course as this gleaming open source API has worse documentation than a dead proprietary format.

Github is the hip place to be so yeah that's probably the best place.

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Subject: Re: W3D Blender  
Posted by [yesfish](#) on Fri, 01 Jun 2012 16:47:03 GMT  
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First preview will be ready next week I think.  
See original post for latest screens.

Now samples passes into materials, UVMaps, vertex color maps, vertex alpha maps (not sure what to do with them so set white = transparent, black = opaque. might swap them in future), optionally ignore lightmaps, sorts hidden / VIS objects into layers and is a proper addon.

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Subject: Re: W3D Blender  
Posted by [reborn](#) on Sat, 02 Jun 2012 06:31:57 GMT  
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---

You don't just come along on May 22nd 2012 after a game has been around for so long, and just suddenly be so awesome and knowledgable.  
Who are you?

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Subject: Re: W3D Blender  
Posted by [Distrbd21](#) on Sat, 02 Jun 2012 08:57:31 GMT  
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What does it matter if he is, adding more stuff to the game that is so old???

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Subject: Re: W3D Blender  
Posted by [Ethenal](#) on Sat, 02 Jun 2012 17:50:24 GMT  
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DistrbdSt0rm21 wrote on Sat, 02 June 2012 03:57What does it matter if he is, adding more stuff to the game that is so old???  
He's obviously praising him, not putting him down...

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Subject: Re: W3D Blender  
Posted by [saberhawk](#) on Sun, 03 Jun 2012 03:10:23 GMT  
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yesfish wrote on Tue, 29 May 2012 02:35  
There are three rendering options which are simultaneously present to support different quality modes. Vertex Lit, multi-pass, multi-texture. Anyone know which is considered the 'best'? My instincts say multi-pass as it matches directly with RenX material editor. But multi-texture looks like it was added after multi-pass. Multi-texture is also a little weird, it could be an issue.

---

They are actually lighting modes and not exported from RenX. The WW workflow was to export something from "RenX" and bring it into a lightmapping tool (which wasn't released), calculate the lighting for the level and transform the bare material/shader/etc chunks into copies configured for each lighting type.

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Subject: Re: W3D Blender  
Posted by [yesfish](#) on Sun, 03 Jun 2012 14:31:31 GMT  
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Now available for download. If you want to play with it and point out all the problems, you can find it at the start of the topic.

Thanks saberhawk. In light of that information, I think the best way to go is to ignore multitexture, try to load multipass and fall back to vertexlit. Some meshes seem to have materials missing so I'm thinking perhaps they don't support PRELIT\_MULTIPASS.

(I bet I'll end up having to parse MULTITEXTURE though )

reborn wrote on Fri, 01 June 2012 23:31 You don't just come along on May 22nd 2012 after a game has been around for so long, and just suddenly be so awesome and knowledgable. Who are you?

Why I'm yesfish! You may remember me from jelly in such scenarios as. "Shotgun triumphs over ramjet yet again" and "flaaametaaaank~"

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Subject: Re: W3D Blender  
Posted by [yesfish](#) on Fri, 08 Jun 2012 17:16:44 GMT  
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Things are getting a little weird now

The goal is in sight now yet some things are very mysterious. meshes pulling bone data from other files without any reference to them other than making wild guesses about filenames, level of detail meshes that reference the same hierarchy, there's no differentiation between matrices or bones and aggregates that give dr moebius exchangeable heads. It's like a taco inside a taco inside a Taco Bell inside a KFC inside a mall inside your dream.

The big picture is just out of reach. Could it be some super hierarchy of models that transcends .w3d and .mix files? Will keep slugging it, but any more info is appreciated.

### File Attachments

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1) [w3dclown.JPG](#), downloaded 2207 times



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Subject: Re: W3D Blender

Posted by [saberhawk](#) on Sat, 09 Jun 2012 06:20:18 GMT

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yesfish wrote on Fri, 08 June 2012 10:16It's like a taco inside a taco inside a Taco Bell inside a KFC inside a mall inside your dream.

Welcome to Renegade

C\_AG\_GDI\_MOBO explicitly pulls in C\_GDI\_MOBI\_ which explicitly brings in the hierarchy from S\_A\_HUMAN and implicitly brings in the 4 LOD meshes C\_GDI\_MOBI\_L0 to L3 (the HLOD from

these is ignored). It also explicitly pulls in C\_GDI\_MOBI\_HEAD and attaches it's HLOD to "C HEAD" from S\_A\_HUMAN. One convention to note is that the file name of a W3D file needs to be the name of the primary object inside it, and that other files can be brought in using the dotted names (ie C\_GDI\_MOBI\_L3.BODY3 loads c\_gdi\_mobi\_l3.w3d and grabs the BODY3 mesh.) Renegade itself handles this by having an "Asset Manager" which can load things on demand if they haven't already been loaded, otherwise it just makes a copy.

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Subject: Re: W3D Blender  
Posted by [yesfish](#) on Sat, 09 Jun 2012 18:06:27 GMT  
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Aha! So the HLOD is basically some magical botched resource puller. Mix that with aggregates and that's the complete picture...

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Subject: Re: W3D Blender  
Posted by [yesfish](#) on Sun, 24 Jun 2012 20:58:31 GMT  
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---

Stuck.

Importing, fine. Still need to do the object attributes and some material shader values. But you get a complete picture of the scene.

Exporting, even though wdump reveals a structure that's as standard as any mesh and even though you can then reimport the exported mesh into blender and it works FINE, open it in w3dviewer and watch the materials disappear.

And I'm sick of Blender's shitty API. Features you'd expect are missing, features that are there are hidden or undocumented or don't work the way they should. e.g. BMESH the new n-gons structure has a whole neat set of polygon splicing features, but can't even triangulate a mesh. And I'm going to have to add all this missing functionality myself if I want to finish this thing - but at this point I'm sick of the whole attempt. Getting Blender to work has been far worse than trying to get my head round W3D.

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Subject: Re: W3D Blender  
Posted by [Omar007](#) on Sun, 24 Jun 2012 22:50:46 GMT  
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Awww  
You where making such progress

Guess we have to hope for the Blender API to improve.

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Subject: Re: W3D Blender

Posted by [NACHO-ARG](#) on Mon, 25 Jun 2012 15:50:33 GMT

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never liked blender but what you have done so far is really awesome man, dont give up, you will find the way to sircunvent the any obstacle you may find soner or later.

---

Subject: Re: W3D Blender

Posted by [Mauler](#) on Sun, 22 Jul 2012 18:44:06 GMT

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I'm very eager to find out if you plan on creating a Max version of these tools, as they would benefit people with the newest versions of Max.. I would use the hell out of it

---

Subject: Re: W3D Blender

Posted by [yesfish](#) on Mon, 11 Feb 2013 20:57:27 GMT

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Sorry I haven't been on here for a while.

Last summer my forever sketchy sleep problems became chronic. I live in the UK, healthcare is free, but it is SLOW. 4 months waiting time for a doctor to tell me that "yep, you're tired" kind of slow. With very limited waking energy to spare, life has had to come first.

So I'm thinking, if everything goes okay, in a few months I might have some time to work on it again, with an improved plan:

1) Separate the w3d interpreter part into an xml<->w3d python module that you could use in 3ds max or blender, etc. which should fix a bunch of issues and make it a general purpose tool for all modders wanting to do stuff.

2) figure out the many issues with Blender and the w3d format and get the damn thing exporting workable models.

"The sleeper must awaken!"

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Subject: Re: W3D Blender

Posted by [Mauler](#) on Mon, 11 Feb 2013 22:00:20 GMT

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Thanks for the reply, and take care of yourself first! I really look forward to hopefully work with newer versions of max for W3D

I have also talked to Abjab, he said he will release his latest W3D tools to myself with intent for

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hopefully create a new set of w3d tools for latest max versions. Not sure when that will happen, but soon

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Subject: Re: W3D Blender  
Posted by [Abjab](#) on Thu, 28 Mar 2013 03:00:15 GMT  
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In case anyone still interested, here's my latest w3d tools (2006) where I left them.

unzip to your 3dsmax or gmax base folder.  
tested on max 5 only.

feel free to modify or use part(s) of my script for your own work

EDIT:

Might not be the latest, found this script from 2007

just overwrite (max)/scripts/startup/Abjab's-W3D-Importer.ms with Abjab's-W3D-Importer.ms (2nd link).

EDIT:

or download: [Abjab's-W3D-Tools-Latest.zip](#) (third link)

I don't have max or gmax on my pc so can't try'em out, no clue if they even work as is.

### File Attachments

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- 1) [Abjab's-W3D-Toolsv001.zip](#), downloaded 427 times
  - 2) [Abjab's-W3D-Importer.ms](#), downloaded 387 times
  - 3) [Abjab's-W3D-Tools-Latest.zip](#), downloaded 458 times
- 

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Subject: Re: W3D Blender  
Posted by [Abjab](#) on Tue, 02 Apr 2013 01:32:19 GMT  
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Oh boy, I just installed gmax...

This version ain't completed, won't import as is, plus few other things missing like buttons for texture browser and hierarchy builder.

I'll make a "quick" fix for this and will update the link above when done.

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Subject: Re: W3D Blender  
Posted by [Mauler](#) on Tue, 02 Apr 2013 06:57:38 GMT  
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nice thanks!

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Subject: Re: W3D Blender  
Posted by [yesfish](#) on Thu, 09 May 2013 01:08:48 GMT  
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Here is a working prototype of the xml<->w3d python module I mentioned in the last post. The purpose of being a standard library and reference for the format...

[https://github.com/huwpascoe/w3d/blob/master/w3d\\_elem.py](https://github.com/huwpascoe/w3d/blob/master/w3d_elem.py)

Currently can only w3d->XML files. The code is much nicer than what I was doing last year but I know the format well now.

Every chunk is defined in a simple array and read with a small set of functions. Once it's done you'll be able to both use it to read-write w3d files (if you have a python project) or use it as a reference for the format.

So neat and clear!

```
{
  'name'      : 'mesh_user_text',
  'code'      : 0x0000000C,
  'attrib'    : [['', 'string']]
},
{
  'name'      : 'vertex_influences',
  'code'      : 0x0000000E,
  'subname'   : 'id',
  'subattrib' : [['', 'uint16'], ['_padding', 'uint8', 6]]
},
{
  'name'      : 'mesh_header3',
  'code'      : 0x0000001F,
```

```
'attrib'      : [  
    ['Version', 'version'],  
    ['Attributes', 'uint32'],  
    ['MeshName', 'name'],  
    ['ContainerName', 'name'],  
    ['NumTris', 'uint32'],  
    ['NumVertices', 'uint32'],  
    ['NumMaterials', 'uint32'],  
    ['NumDamageStages', 'uint32'],  
    ['SortLevel', 'sint32'],  
    ['PrelitVersion', 'version'],  
    ['FutureCounts', 'uint32'],  
    ['VertexChannels', 'uint32'],  
    ['FaceChannels', 'uint32'],  
    ['Min', 'vector3'],  
    ['Max', 'vector3'],  
    ['SphCenter', 'vector3'],  
    ['SphRadius', 'float32']  
    ],  
},
```

Still todo:

enter and/or figure out remaining unimplemented chunks (52 left to go)  
verify that I correctly guessed the format of the vaguely commented chunks  
check data formats (right now everything is barfed out as a string)  
XML -> w3d function  
utility functions, make it a module.

I don't know when it will be finished.

---

Subject: Re: W3D Blender  
Posted by [Mauler](#) on Thu, 09 May 2013 02:42:23 GMT  
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wow great stuff! keep going buddy

---

Subject: Re: W3D Blender  
Posted by [yesfish](#) on Sat, 20 Jul 2013 03:18:41 GMT  
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[https://github.com/huwpascoe/w3d/blob/master/w3d\\_elem.py](https://github.com/huwpascoe/w3d/blob/master/w3d_elem.py)

The library can now do both w3d->xml and xml->w3d. I'm so happy, it can convert to and from

files already without any data loss!\*

It just needs a bit of a cleanup, some testing and perhaps some detective work to verify every chunk of the format before I can declare it OK.

\*random junk left by C++ exporters that don't initialize their structs to 0 is lost.

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Subject: Re: W3D Blender  
Posted by [Mauler](#) on Sat, 20 Jul 2013 07:20:21 GMT  
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Good stuff man! I wish I could get a grasp on coding things  
anyways looking forward to future updates

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Subject: Re: W3D Blender  
Posted by [yesfish](#) on Sun, 21 Jul 2013 06:07:38 GMT  
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---

<https://github.com/huwpascoe/w3d>  
This is the link to the repo itself as the last file was removed. (for some reason I can't edit previous posts)

Thank you to saberhawk for their contribution with the new shaders.

Here's what's left

No idea what to do about these  
animation\_channel  
bit\_channel  
compressed\_animation\_channel  
compressed\_bit\_channel  
soundobj\_definition

Can't find these for some reason, will keep searching  
lodmodel\_header  
lod  
collection\_header  
placeholder  
transform\_node  
texture\_replacer\_info

Any opinions on these?

obsolete\_w3d\_chunk\_hmodel\_aux\_data  
obsolete\_w3d\_chunk\_shadow\_node

I have no info on them other than what they're called, and that they're obsolete. Do these show up anywhere in westwood games at all? Should I include them?

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