

Going at a Good Clip!

by Dave Mercel

This blog post covers a New Feature - Clip Boxes
Some uses of clip boxes for pointclouds include:

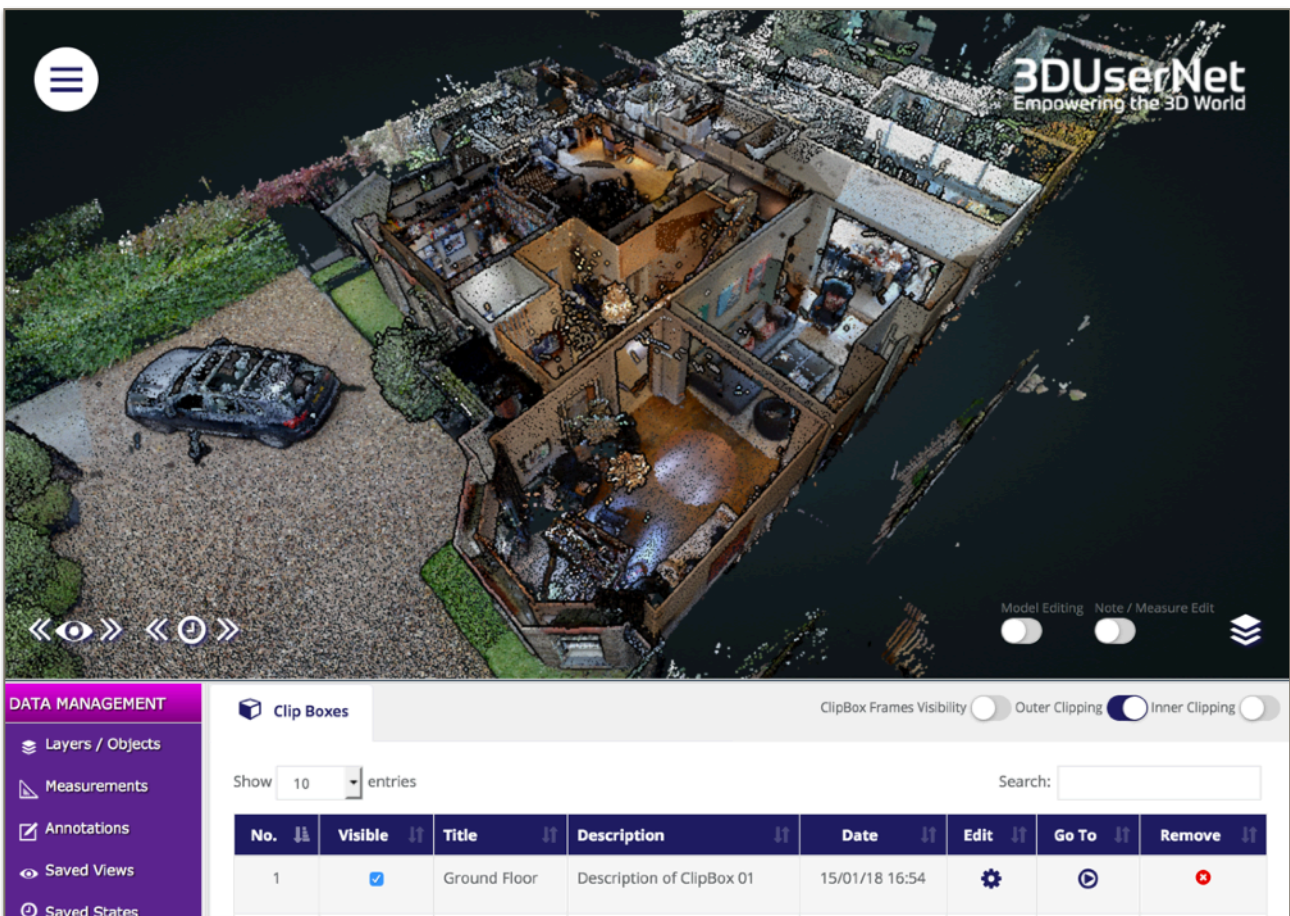
- Segmenting Data into smaller areas
- Removing Unwanted Noise from the scene
- Creating Plan Views
- Creating space for new Designs

The tech world moves fast and generates a lot of data. Take point clouds as an example. When I first started using a scanner capturing 100,000 points seemed to take an age. Now we can capture 5 times that in less than a second which is amazing, but sometimes having lots of data can get in the way and cause us to lose focus on what we really need. We don't want to remove the data, but we need to be able to use it more sensibly. One solution.....Clip Boxes!

We have added a new clip box feature to **3DUserNet** to help our users get to what really matters, communicate their point (the puns have started already...) more clearly to customers and improve the look of their pointcloud data in the 3D viewer. We think having this capability in a web browser is just awesome and it even works on mobile devices too.....you say *what???*...yep, on mobile devices too! So what can we do with this new capability? Let's take a look.

SLICE AND DICE

One of the great things about using clip boxes is that we can partition our projects into more manageable pieces. For example I can now take an entire building such as a house and create a clip box for each room or floor. Then I can toggle the visibility of the clip boxes to enable me to see just the rooms or floors that I need at any given time.



The screenshot displays the 3DUserNet software interface. The main view shows a 3D point cloud of a house with a clip box applied to the ground floor. The interface includes a navigation menu on the left, a toolbar at the bottom, and a data management panel at the bottom right. The data management panel shows a table of clip boxes with columns for No., Visible, Title, Description, Date, Edit, Go To, and Remove.

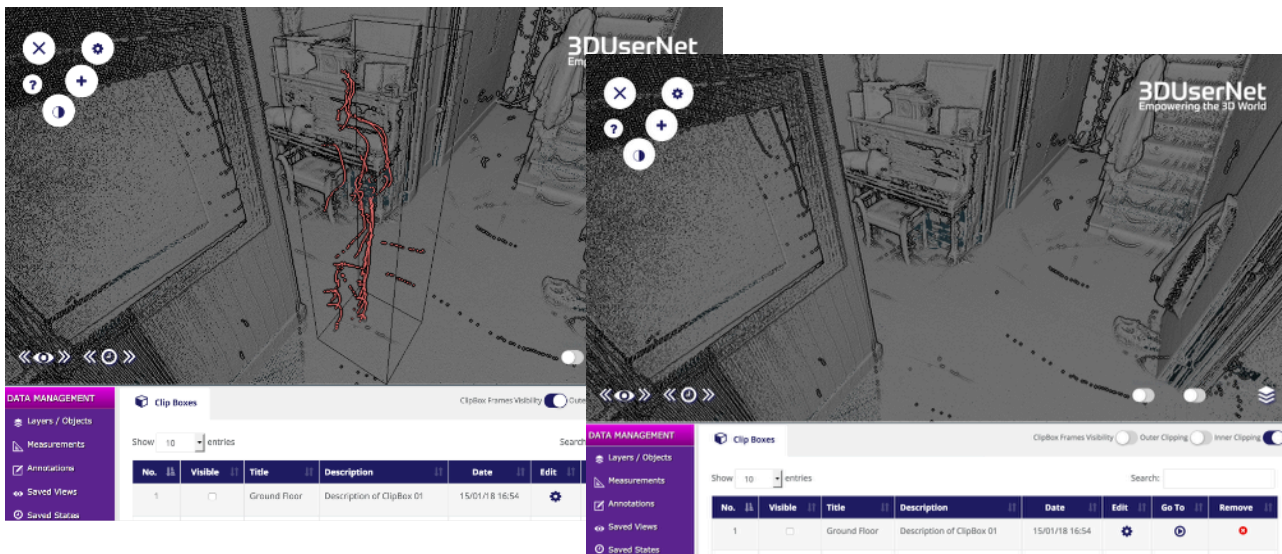
No.	Visible	Title	Description	Date	Edit	Go To	Remove
1	<input checked="" type="checkbox"/>	Ground Floor	Description of ClipBox 01	15/01/18 16:54			

The other bonus here is that I can save the visibility settings when I create a 'State' of my project so I can easily create a state for each room or floor too, to save me having to keep pressing the visibility toggles. Marvellous!

CUT IT OUT!

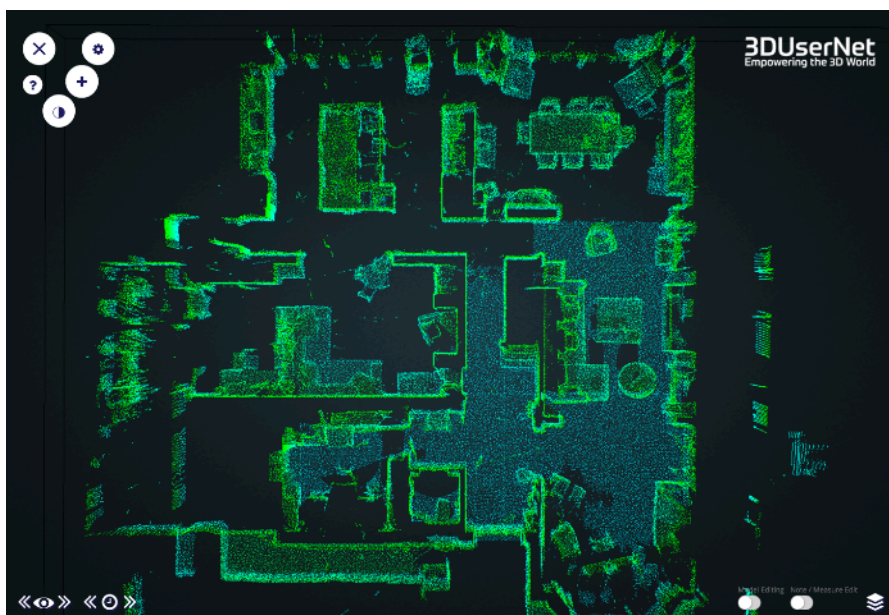
If I could count the number of times I have cleaned my scan data only to find a pesky pedestrian or vehicle 'whisp' still lingering once I come back to it the next day it would probably equal the number of times I wish I had a fix for it! Well now I do.

If you find a stray bit of data in your pointcloud once you have uploaded it to 3DUserNet, you can simply add in a clip box around the data, sizing as required and simply toggle to 'Inner Clipping' and the offending data will vanish before your eyes.....Expelliarmus (As a famous wizard might say).



I HAVE A CUNNING PLAN

Sometimes we just need a horizontal section through our data to help us understand the layout of it and give us a 'Plan' view. Whilst strictly speaking this isn't exactly a plan (as it will not be orthographic) I can create what I need by making a very broad, but not very tall, clip box to show me a plan section of the property. Just what I needed!



INTELLIGENT DESIGN

We aren't just interested in what the world looks like now, but how we can change it for the better and improve things. Clip boxes to the rescue, as we can use them to take away the area we are changing (using inner clipping) and give us space to put in a new design.



Or maybe a couple of new designs. We can then share them with the client and see what they think, before we go ahead and finalise it. Bellissimo!!

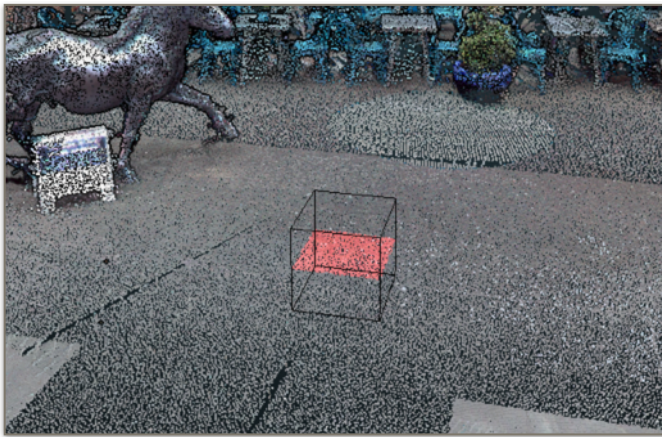


ADDING A CLIP BOX

This is so easy my children can teach the dog how to do it! We start by selecting the 'Add ClipBox' button from the tools menu.



You click on your data where you want the box to appear and you see it get inserted there. Then you can give it a name and description if you want to.



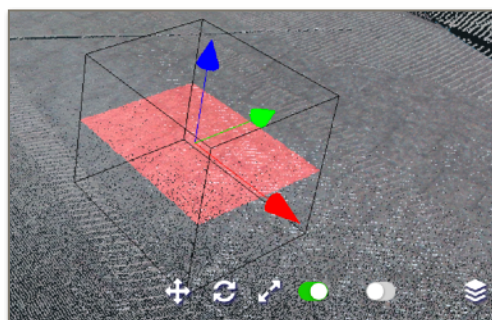
Add Clip Box

Title
ClipBox 01

Description
Description of ClipBox 01

Cancel Save ClipBox

We can use the model edit toggle to allow us to move, rotate and scale the clip box to exactly how we want it. We can even edit these values manually by using the Data Management 'Clip Boxes' tab where we also get to toggle the visibility of each clip box too.



Edit Clip Box Radians Degrees

Title
ClipBox 01

Description
Description of ClipBox 01

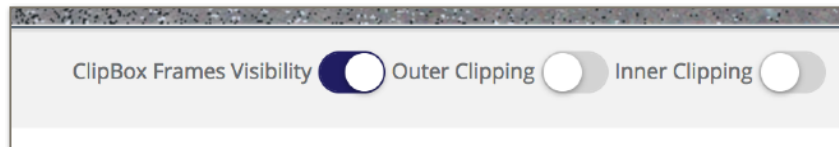
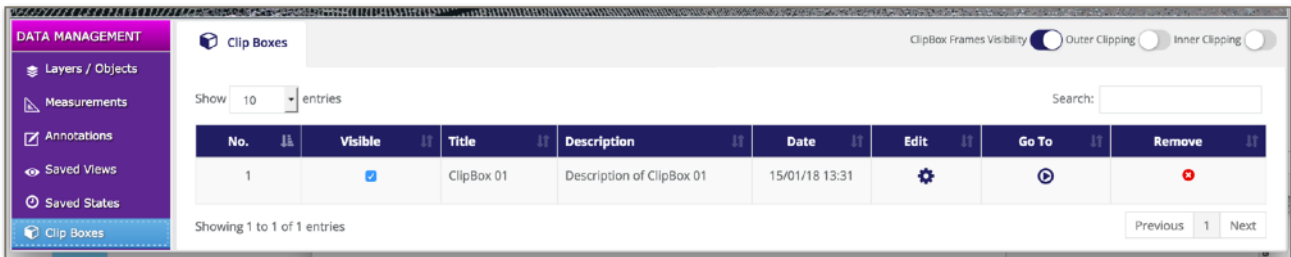
Position
-67.268 22.088 25.857

Rotation
0 0 0

Scale
0.61 0.61 0.61

Cancel Save

In the Data Management Clip Boxes area you will see three toggles where we can toggle Outer Clipping (Removes everything outside clip boxes) / Inner Clipping (Removes everything inside clip boxes) and Clip Box Frame Visibility (to remove the bounding box).



So there you have it. Just some of the ways you can start to enjoy this new feature to save your time and money when using and sharing pointclouds. Let us know how you get on with it and any improvements you can think of as we want you to love **3DUserNet** just as much as we do.

Have Fun.