



# **Capture Reference Manual**

**Updated for Version 2.11**

**Written by Joe Bleasdale**



# Introduction

*capture*  
*polar*

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## Introduction



This manual should serve as one of the primary tools for installation and operation of the Capture software. Capture Sweden's e-mail support and online web forum are available as important complements to this manual.

<http://www.capturesweden.com>

Please visit our website for regular software updates and important product information. Also make sure to notify us if your e-mail address is changed, since e-mail is our primary communication channel.

### Microsoft Windows XP / Vista / 7 installation



Capture is easily installed from the MSI installation package available from our website. Prior to any installation it is recommended to make sure that you have the latest version of the installation package.

Once you have downloaded the MSI installation package, simply double click it to launch the installation. If you are given the option to install "For everyone" or "Just for me", we recommend using the "Just for me" option.

Should you perform an administrative installation on a computer used by multiple users, you must use the "For everyone" option.

However be careful to always use that since Microsoft's Installer system in Windows is known to get confused otherwise.

### Mac OS X installation



Capture is distributed as an ".app" package available from our website. Once downloaded, it can be run from any location.

When run, the latest version of the library is automatically installed if necessary (hence it's possible to have multiple versions on a system, but they will all always use the latest version of the library).

## The license key file

Capture licenses are offered on a personal basis, which means that it is possible to use the key-file on more than one computer. As a result of that, it is also necessary to unlock the key-file on each computer, so that we can keep track of your Capture installations.

If you have purchased a Capture license and received a key file, you will need to install it. This is done from inside Capture; Open the **Licensing** dialog from the **Tools** menu and click on the **Install key file** button.

Once you have installed your key-file on a computer, you also need to unlock it. If you have access to the internet you can click on the **Unlock over the internet** button, otherwise click on the **Unlock manually** button and follow the instructions on-screen. The manual unlocking process may take some time as it requires manual attention from the Capture Sweden staff, but we will help you as promptly as possible.

## Demo version limitations

The demo version of Capture comes with two (and no other) limitations:

- The Save function is disabled.
- The software will only run for 90 minutes.

There are no limitations in terms of console or media server connectivity or the number of universes available for visualization.

## Library updates

Library updates are continuously available on our website, <http://www.capturesweden.com>. If you have requested library additions, this is where you will download an updated library package when we have notified you of completion of your request. Each release of Capture also contains the latest available library package.

## Support

Support to our customers is offered through e-mail and our online web forum at <http://www.capturesweden.com>. Under extraordinary circumstances we may also communicate with you over telephone, Skype or MSN.

If you have any questions regarding functionality or operation, please e-mail us at [support@capturesweden.com](mailto:support@capturesweden.com).

If you have questions regarding the library or if you are missing fixtures, please e-mail us at [library@capturesweden.com](mailto:library@capturesweden.com).

For fastest possible assistance, please make sure to e-mail us at the appropriate e-mail address.

Here are some things we will always ask you to do before helping you out:

- If you are a Microsoft Windows user, make sure that you have all the latest applicable service packs and hotfixes from Windows Update. If you experience problems related to on-screen graphics, also make sure to defragment your hard disk since it appears to affect some drivers.
- Check that you have the latest drivers for your computer components and your graphics card in particular.
- Check that you have installed the latest version of Capture and the latest library update.





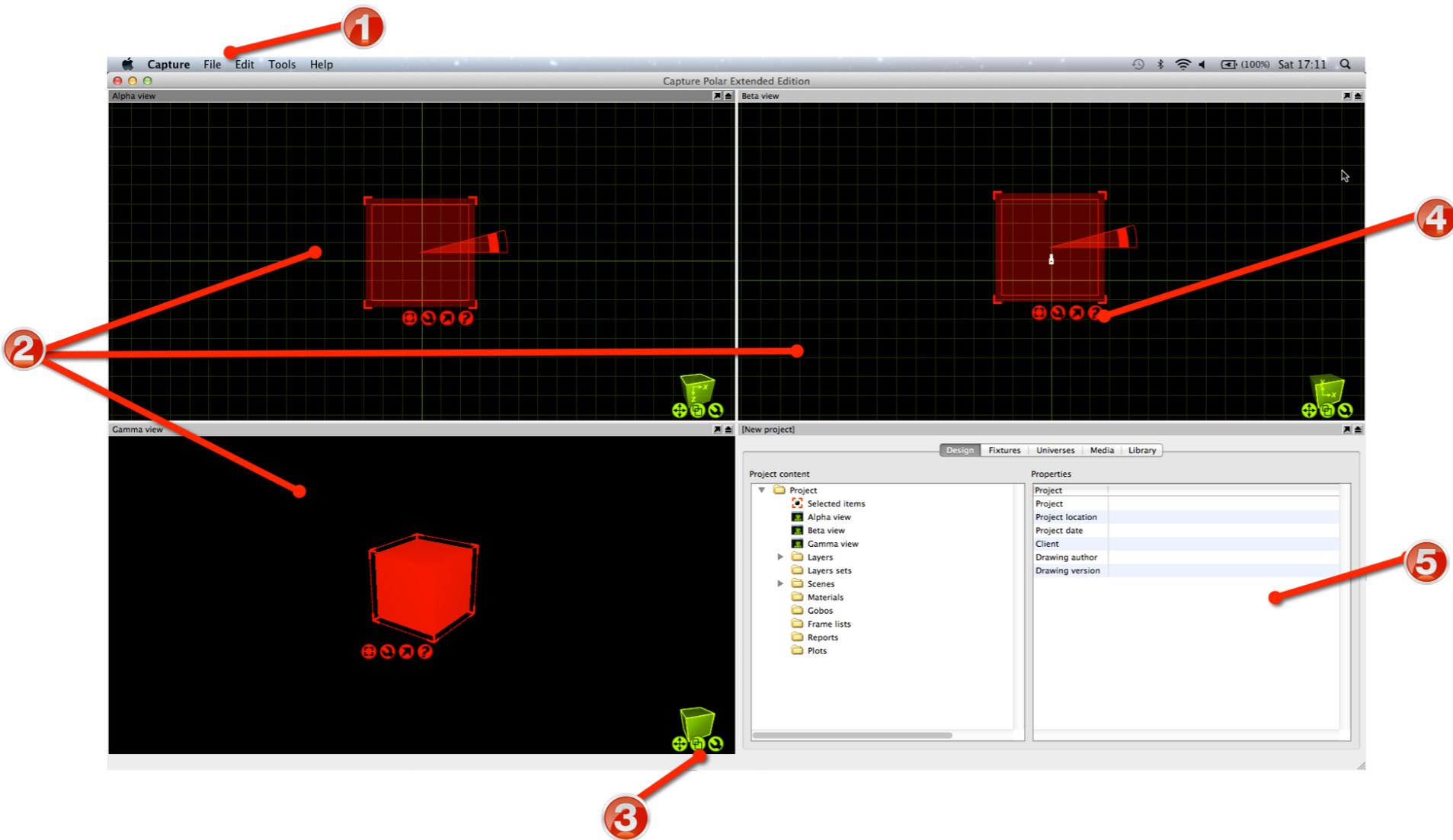
**Software Overview**

*aperture*

*polar*

# The Capture Interface

The image below shows the main areas of the Capture Interface.

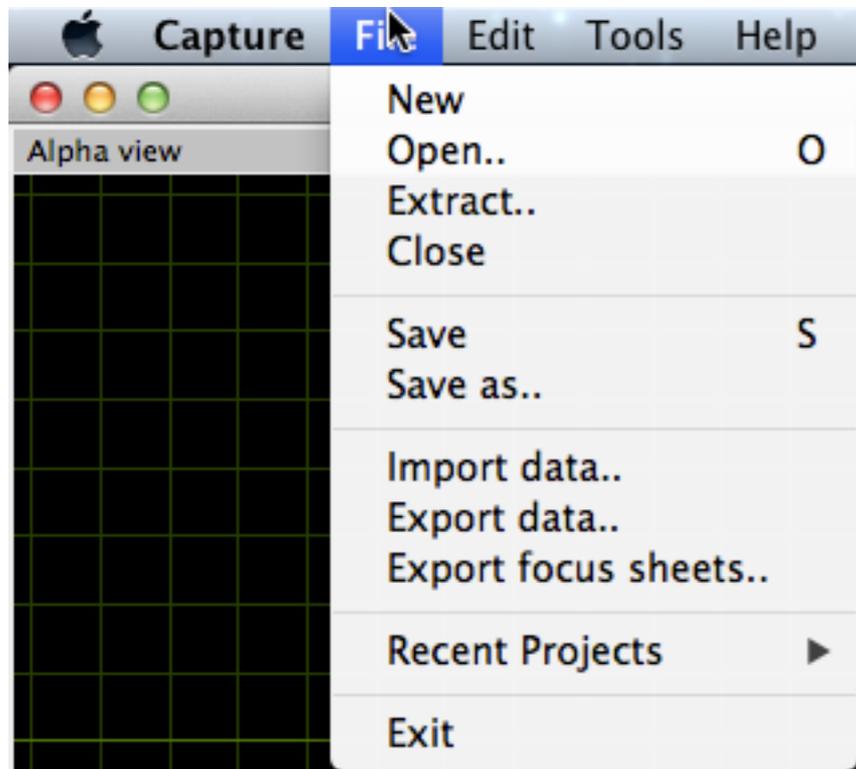


1	Main Menu
2	Simulator Views
3	Simulator settings
4	Navigator
5	Project Window



## Main menu

The main menu is available at the top of the main window. It has been kept minimal in order to reduce confusion.



In the **File** menu you will find the basic commands for **opening, saving** and **closing** Capture project files. Note the variety of different file types available in the **Open** and **Save** dialogs – they allow you to import and export DXF and DWG files, open older Capture project files and creating project presentation executables.

The **Extract** feature is used to open up other project files in parallel and allows you to copy items from other projects into the project you are working with (which is done using the arrow navigator button).

The **Save as presentation** feature is a shortcut to the Save dialog, with the "Capture Presentation Files" file type preselected. It creates an executable file that will launch your project, which is embedded in the executable file, and show the Alpha view. Presentations cannot be used to edit project files, they merely serve as a viewing and presentation tool.

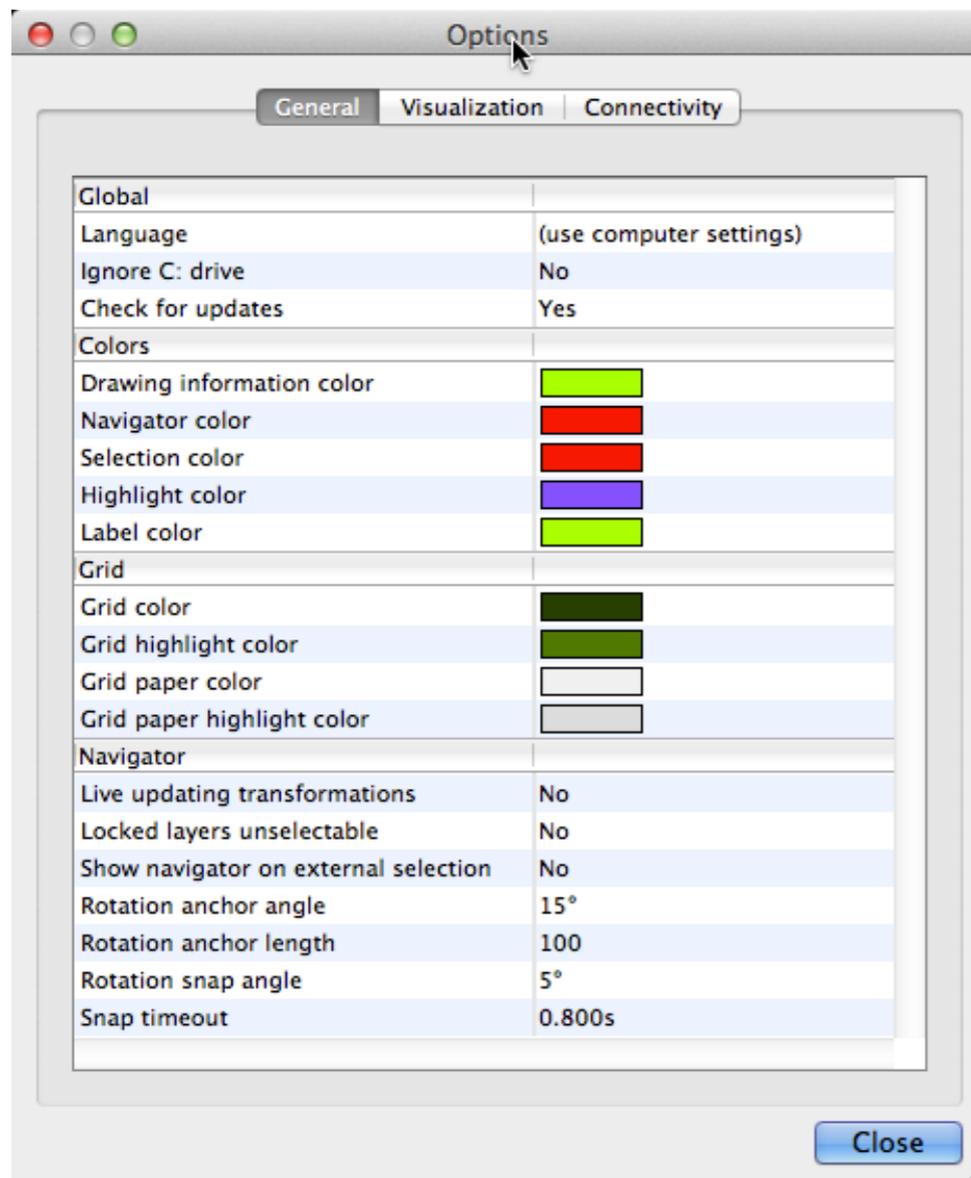
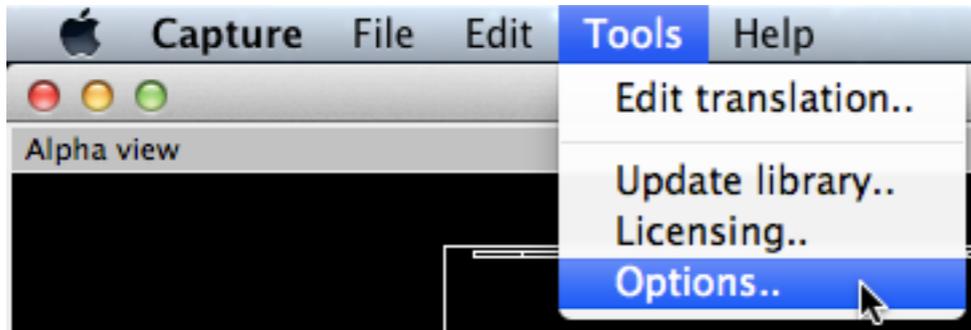
The **Export focus sheets** feature creates a set of images, one per fixture (or as configured in the configuration dialog presented), giving you a view out through the aperture of the fixture. It requires you to pick a folder into which the images are placed.

In the **Edit** menu you will find access to the unlimited **Undo** and **Redo** commands.

The **Tools** menu gives you access to the **Options** window and the **Translation** window.



## Software Options



The software options are available through the **Tools / Options..** menu command and are split in three categories - General, Visualization and Connectivity.

Under the **General tab** you can change the language of the user interface in Capture. By default it will follow the settings of your computer.

The **Ignore C: drive** options is important on Microsoft Windows machines that have their Windows installation on a drive other than C/:

Turning on the **Live updating** transformation option causes all simulation views to update at once when moving or rotating objects.

**Locking layers** is a useful way of preventing accidental modification of fixed items such as the house of your venue. The **Locked layers un-selectable** option takes it one step further and prevents you from even selecting such items.

The **Show navigator** on external selection is a feature from users with controllers than are capable of selecting fixtures. Unless this option is enabled, fixtures selected from a controller will only highlight as red and not display the navigator with the command buttons.

The size of the navigator's rotation anchor can be changed with the **Rotation anchor angle** and **Rotation anchor length** options. The snapping rotation angle can be set with the **Rotation snap angle** option.

The navigator's snap function is enabled with a small delay to prevent accidental snapping as well as giving the user an option whether to snap items together at all or not. This delay is set with the **Snap timeout option**.



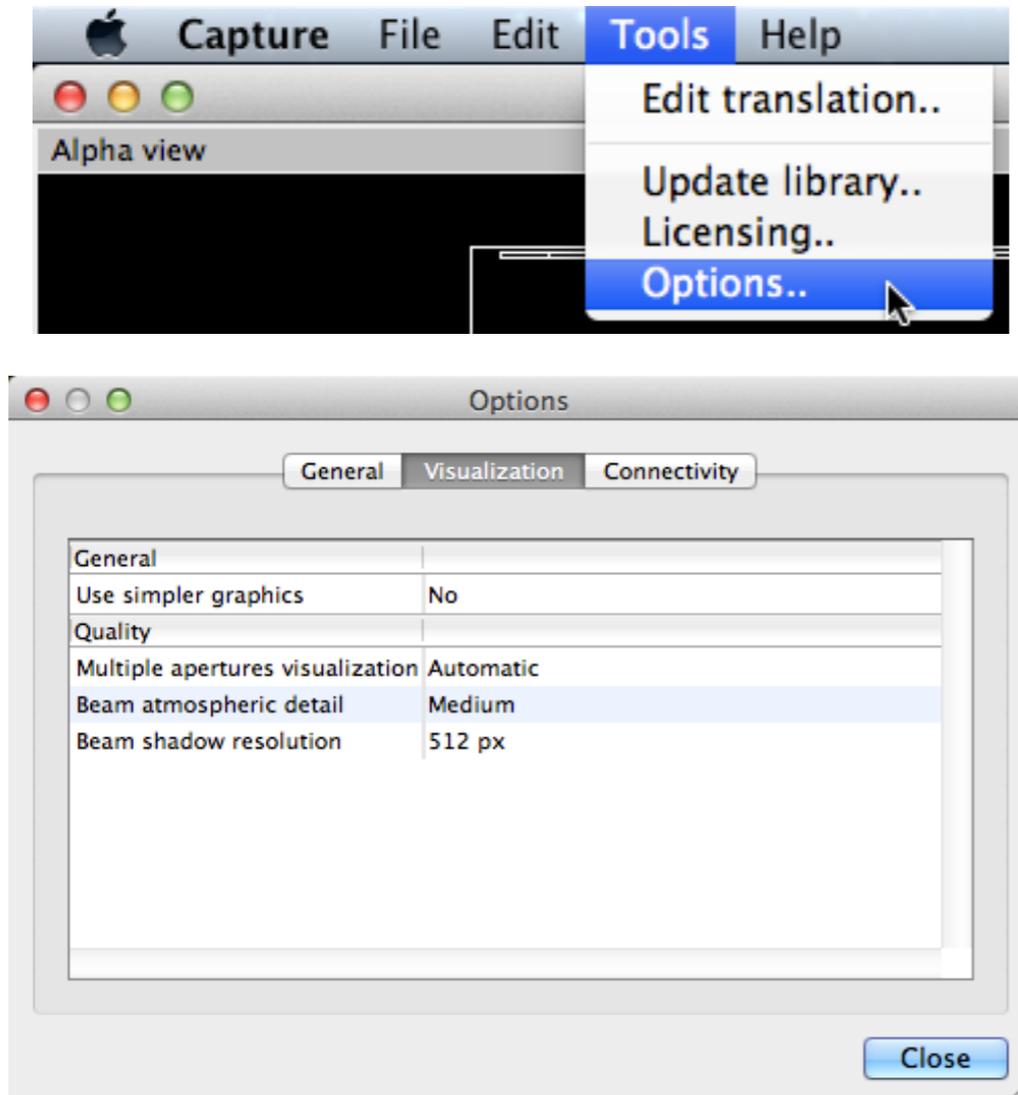
## Software Options

Under the **Visualization** tab you can manually revert the graphics used for lighting simulation to the style used in Capture 2005 using the **Use simpler graphics** option. If your computer is not capable of presenting the new graphics introduced in Capture Polar, this will be done automatically.

The **Multiple Apertures visualization** option controls the rendering of multi-aperture (striplights, BB-7, multi-LED moving heads) beams.

The **Beam Atmospheric Detail** option allows you to control the level of detail created by a beam passing through the smoke/haze in the atmosphere.

The **Beam shadow resolution** option allows you to lower the resolution of shadows created by beams.



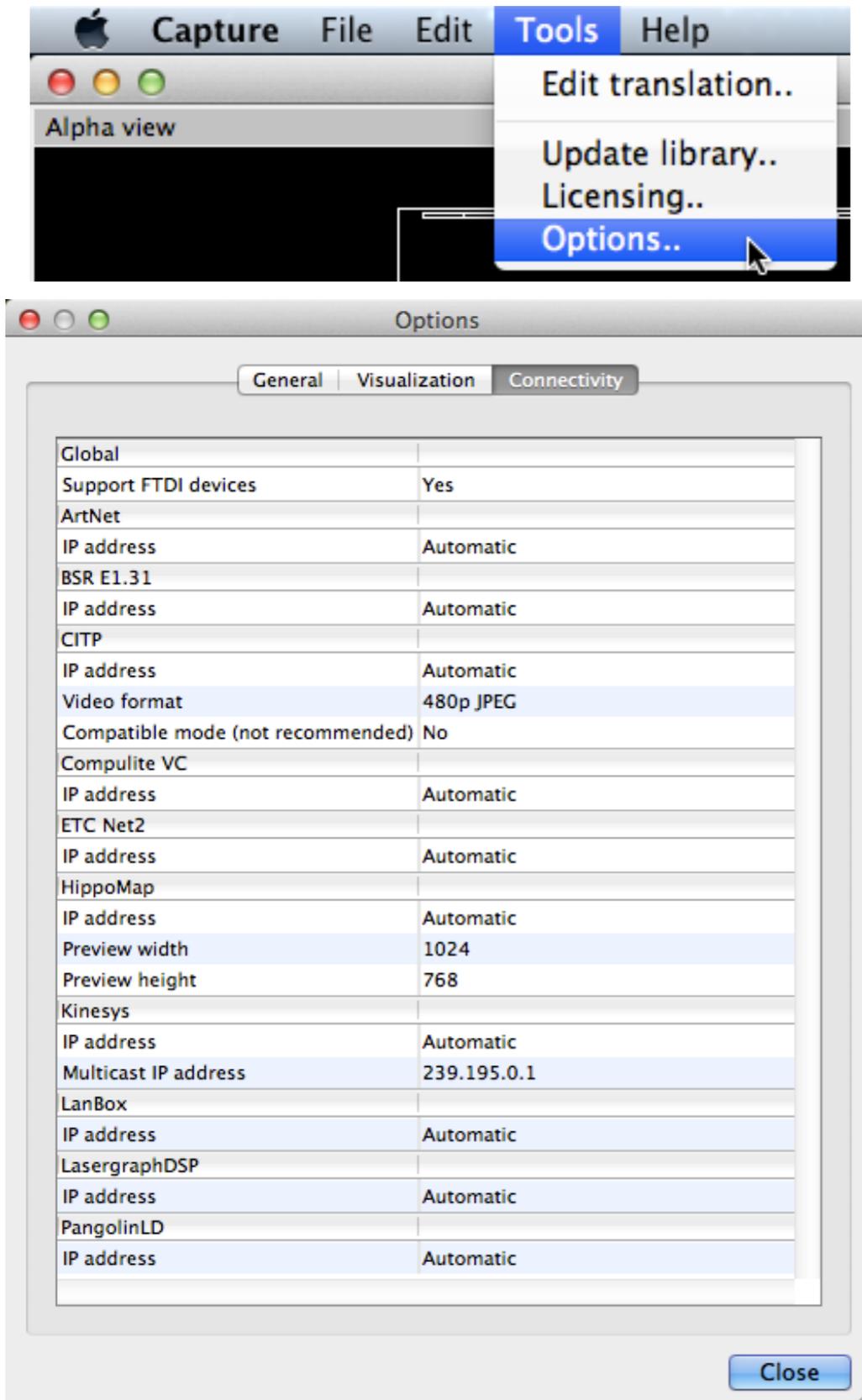
## Software Options

The **Connectivity** tab contains options for controller and media server connectivity. It can be important to set the Preferred network address on a machine with multiple network addresses, but unless you are connecting to older equipment it is not encouraged to enable the Compatible CITP mode as it may make it impossible to connect to newer equipment.

You may also alter the **incoming video format** for CITP communication.

By default, Art-Net, sACN (E1.31), Compulite VC, ETC Net 2, HippoMap (HMap3), Lan Box, Lasergraph DSP and PangolinLD are all set to **Automatic**. On rare occasions when a machine has more than one network adapter, it may be necessary to change **Automatic** to a specific IP address available under the relevant protocol.

**Connectivity Options** may also be accessed by right clicking in the **External Universes** section of the Project Window.



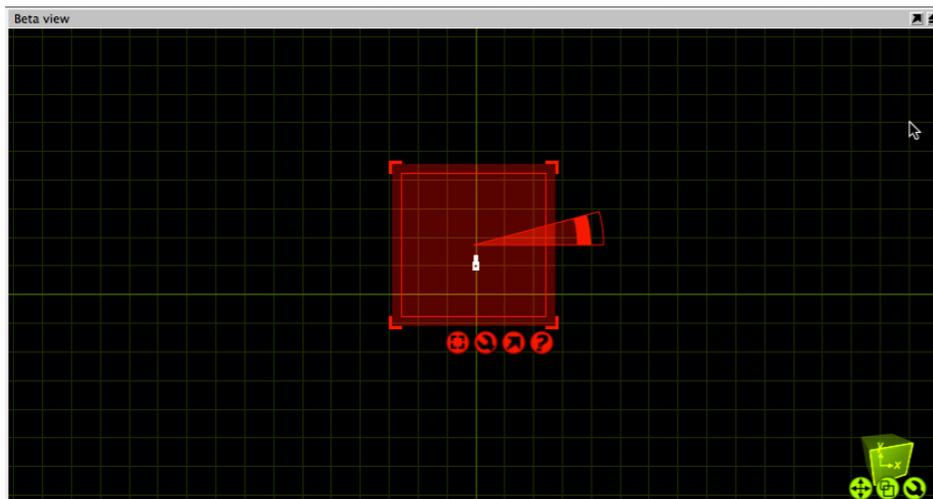
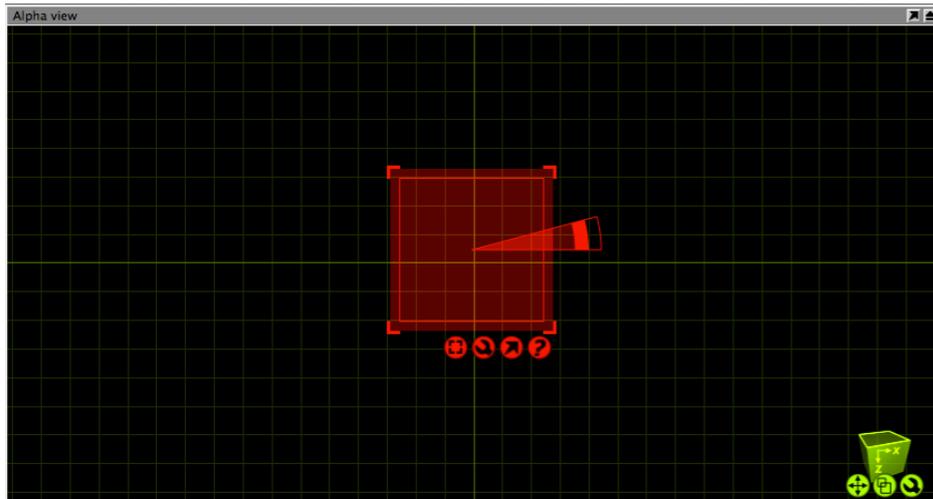
## Keyboard Shortcuts

The following globally applicable keyboard shortcuts are available:	
<b>O</b>	Open project
<b>S</b>	Save project
<b>Z</b>	Undo
<b>Y</b>	Redo
The following simulator view specific keyboard shortcuts are available:	
<b>1</b>	Orthographic top
<b>2</b>	Orthographic front
<b>3</b>	Orthographic section
<b>4</b>	Perspective
<b>5</b>	Orthographic
<b>Q</b>	CAD
<b>W</b>	Live
<b>E</b>	Paper
<b>F9</b>	Level handle toggling
<b>Return</b>	Show the properties of selected objects
<b>G</b>	Group selected objects
<b>B</b>	Break groups in selected objects
<b>T</b>	Translate selected objects
<b>C</b>	Clone selected objects
<b>DEL</b>	Delete selected objects

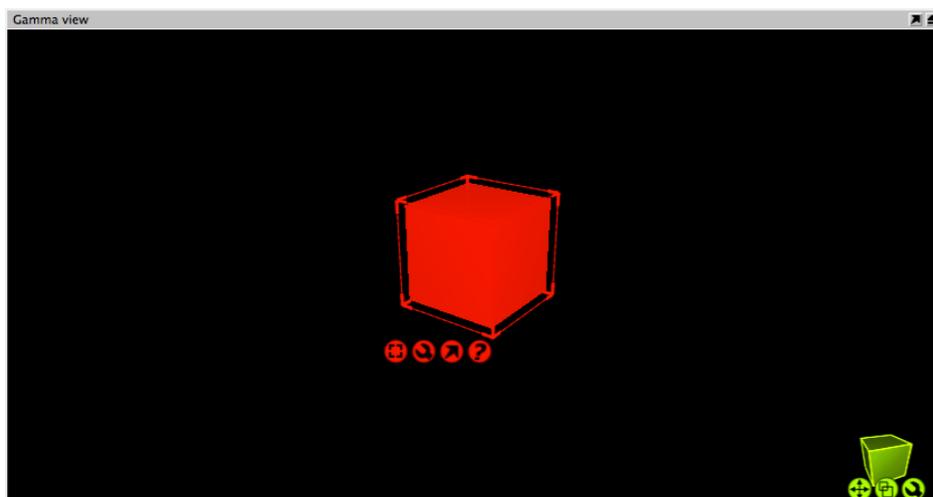


## Simulator View Settings

Capture has three simulator views, **Alpha**, **Beta** and **Gamma**. They can be configured to your liking, the next section will discuss the available modes and options available for the views - but our example here has the Alpha view set to **Orthographic Top** and **CAD mode**. This essentially means you have a “birds eye” view of any objects in the area. CAD mode provides an X/Y centre point marker and a visible grid to aid in object placement.



**Beta View** is set to be **Orthographic Front**, which means the view is looking at the objects “Straight on”, also in CAD mode.

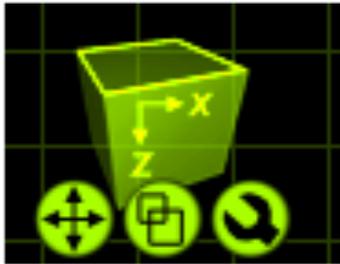


**Gamma View** is set to **Perspective** and **Live mode**. This essentially makes the Gamma view our 3D window.



## Simulator View Settings

As discussed in the previous section, Capture has three simulator views. These views can be configured to the users liking. Configuring a simulator view is done by clicking on the green Navigator Spanner button.



✓ Orthographic top	1
Orthographic front	2
Orthographic section	3
Perspective	4
Orthographic	5
<hr/>	
✓ CAD	Q
Live	W
Paper	E
<hr/>	
✓ Grid	
Labels	▶
Live information	
✓ Cameras	
Hidden objects	
Quality information	
<hr/>	
Zoom to extents	
Save image..	

Orthographic Top	The view is orientated looking down
Orthographic Front	The view is orientated looking forwards
Orthographic Section	The view is orientated looking from the side
Perspective	Option for being able to view an object from any angle
Orthographic	Orthographic is simply also a 3D view, but without the perspective effect of distant objects being smaller.
CAD	CAD View provides an X/Y centre point marker and a grid for placing objects
Live	Live 3D view
Paper	Paper view is used when making plots
Grid	Enables/Disables the grid
Labels	Toggles Labels between "Invisible", "Numbers" and "Handles"
Live Information	Live Information overlays fixtures with programming information like shutter and color mix status.
Cameras	Toggles the visibility of the cameras
Hidden Objects	Toggles hidden objects on/off
Quality Information	Toggles FPS and quality information on/off for the view
Zoom to extents	Replaces the legacy "Reset Camera" option and zooms the camera to a position whereby the whole project is visible.
Save Image	Save an image of that view

## Simulator View Settings

Some view settings are not available in the navigator.

Additional settings for each are available in the **Design tab** of the **Project window**. There is one item per view on the left hand side, and when selected, more properties appear on the right hand side.

The **Layer set** property allows you to choose the layer set to use for filtering out layers in the view (when empty, no layer filtering is performed).

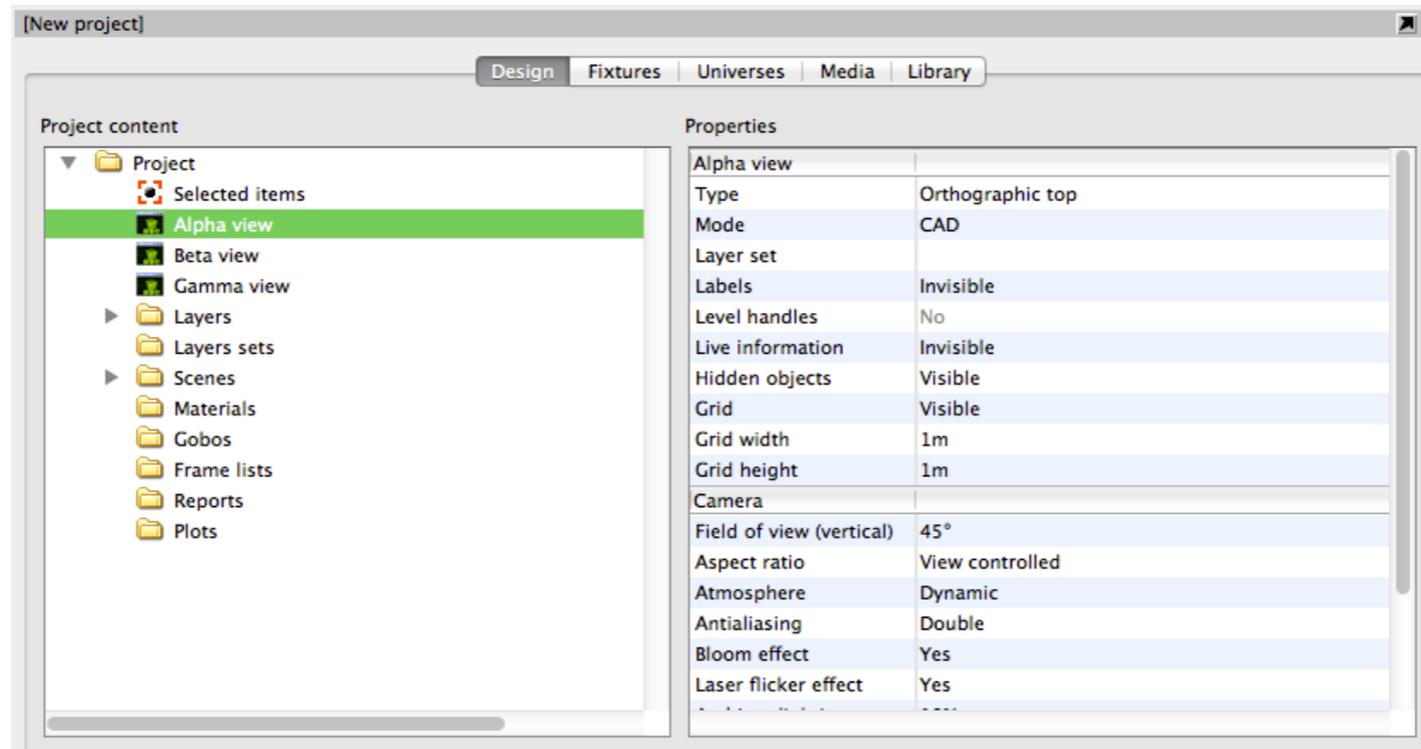
The **Level handles** property modifies the behavior of the labels when in Handles mode so that they show the current dimmer level rather than unit number for each fixture. The keyboard shortcut **F9** can be used to toggle this (when a view is focused).

The **Grid width** and **Grid height** properties determine the distance between grid lines.

The **Vertical field** of view property lets you control lens angle of the view's camera.

The **Aspect ratio** of a view can be set to follow 4:3 as well as 16:9.

The **Brightness**, **Exposure** and **Atmosphere** settings control the look of the view when in Live mode. If you have enabled the "Simpler Graphics" option of Capture, Brightness and Exposure are replaced with **Fixture Lighting** and **Fixture Lighting Differentiation**.



## Simulator Settings

It is possible to control a view using DMX. This is achieved by either manually assigning a Patch universe / channel, by dragging the view from the left hand side of the Design tab to a channel in a universe view, or by dragging the view's camera from a simulator view to a channel in a universe view. The Patch mode option can be used to select the number of channels used by the camera.

Channel	Function	Channel	Function
<b>1</b>	X Course	<b>10</b>	Tilt Fine
<b>2</b>	X Fine	<b>11</b>	Pitch Course
<b>3</b>	Y Course	<b>12</b>	Pitch Fine
<b>4</b>	Y Fine	<b>13</b>	Zoom
<b>5</b>	Z Course	<b>14</b>	Ambient
<b>6</b>	Z Fine	<b>15</b>	Lighting
<b>7</b>	Pan Course	<b>16</b>	Atmosphere
<b>8</b>	Pan Fine	<b>17</b>	Layer Set*
<b>9</b>	Tilt Course	<b>18</b>	Scene*
* 0-3 Slot 1... 4-7 Slot 2... 252-255 Slot 64			

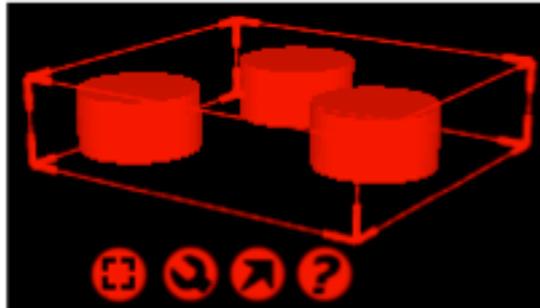
Layer Set and Scene control needs to be additionally configured with their "Control Slot" Properties. It is possible to choose between 64 Layer sets and 64 Scenes.



## The Navigator



*Green – navigation*



*Red– manipulation*

The Navigator is one of the main tools of capture. It is used for two primary functions - Navigation and Manipulation.

The Navigator is present in the bottom right corner of the Alpha, Beta and Gamma views. This Navigator is used to manipulate the view in terms of changing the camera viewing point and zoom within the view as well as accessing the view settings via the spanner button.



As mentioned, the Navigator located bottom right of the views is primarily used for camera manipulation. The First button, a cross with arrows, allows you to move around a view. In a view set to Orthographic Top, Front or Section, holding the button and moving the mouse allows you to move around on the X and Y axis. In one of these 2D views, if you hold the button and move the mouse upwards, the view follows suit and the same if you hold the button and move the mouse left or right. Holding the *Shift* or *Ctrl* keys allows a different style of movement in the 3D views.



The second button is used to zoom in and out on the selected view. Holding the button and moving the mouse up or down will control the amount the camera is zoomed in or out.

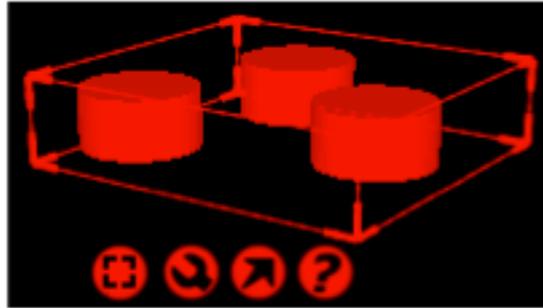


The third button is used to access the settings for the selected view as we discussed earlier. Additional settings for each are available in the Design tab of the Project window.

## The Navigator



*Green – navigation*

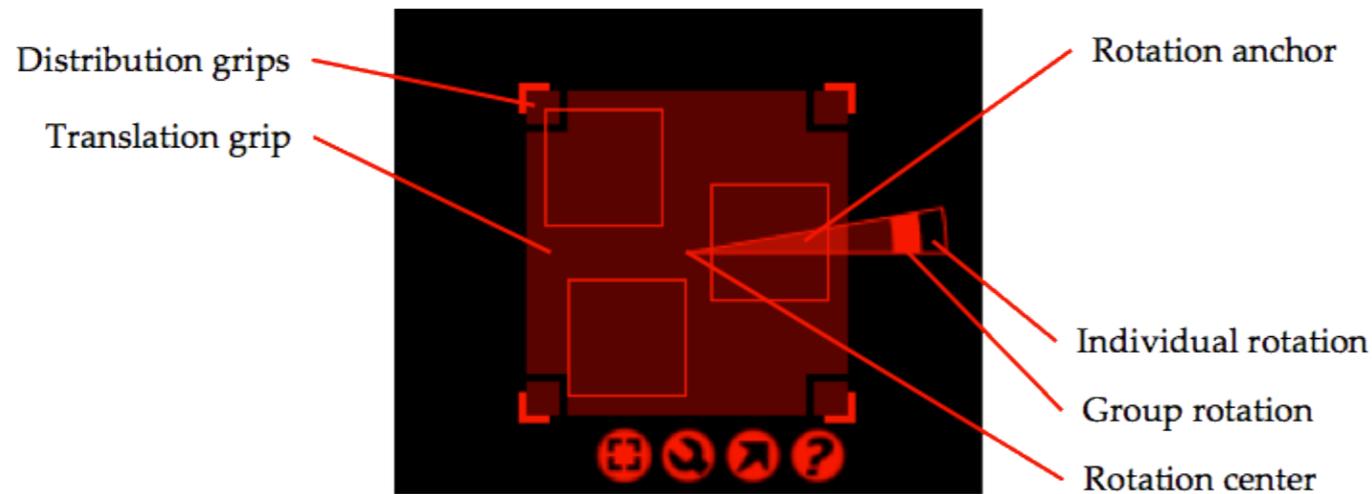


*Red – manipulation*

Whenever you select any objects, within any of the Alpha, Beta or Gamma views within Capture; a second type navigator appears. When objects are selected, they appear red with a red grid around them that has some control buttons below it. This second type of navigator is used to assist in the manipulation of the objects.

Objects can be selected by clicking on them with the mouse. Use the Shift key to add objects to the selection and the Ctrl key to toggle individual object selection on and off. By click-dragging the mouse over a group of

objects, you can select them all at a time. If you drag from the left to the right, the objects must lie completely within the region, but if you drag from the right to the left, it is enough for the objects to be partially inside the region in order to become selected.



Clicking and moving the mouse anywhere inside the Translation grip allows you to move objects around. This area is intentionally large so that it is easy to move items. While moving items, you can enable the ortho mode by pressing Shift key. Snapping in the sense of bringing items to a minimal distance is built in and activated during any translation, but is not triggered until after a short delay. When snapping is activate, the result of the snapping is illustrated with an alternate colour.

Clicking and moving the mouse inside a Distribution grip will allow you to spread out or bring together the selected objects over the given area in a proportional manner. The ortho mode is available here by using the Shift key as well. The Rotation anchor is used to rotate objects. It can be moved around to define the center of rotation and allows for both Individual rotation and Group rotation. Pressing the Shift key enables snapped rotation.



## The Navigator



The first button is a select/deselect button. It allows you to select or deselect everything, with the added "layer" option. Using the "layer" option will allow you to select or deselect everything but only in the current layer. Layers will be discussed in a later chapter.



Properties..  
Sequential unit..  
Transform.. T  
Clone.. C  
Delete

The second button is another options button, but in this instance, pressing it displays a small list of possible operations relevant to the selected object(s). The list that appears is context sensitive, that is to say that selecting a Lighting Fixture will display different options in the list than that of a Truss. Each available option/command will be covered later in the relevant chapters.



The arrow button is used to drag objects out of one view to another. Using this button, the objects won't actually move per se. The button is used primarily for patching fixtures. Select multiple fixtures in the order you wish to patch them and use the drag button to drag them onto a universe in the project window or on an open universe window. This functionality will be covered later in the relevant section.



Fixtures: 2  
Patch used: 3.417, 3.443  
Layers used: Default layer  
Total weight: 72kg  
Total rating: 2kW 388W

The button with a question mark is the Quick Summary button. Pressing it when you have objects selected presents a popup window about the selected objects displaying key data about them.

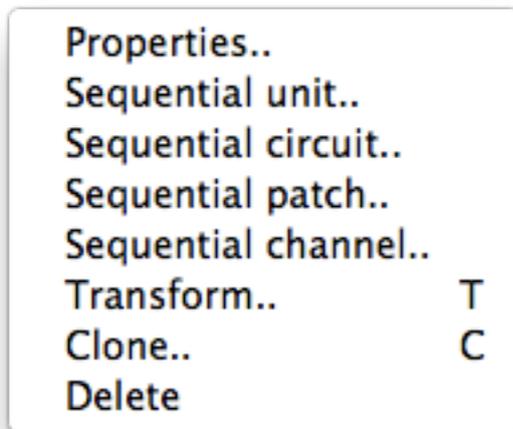


This button is used to open the insertion point dialog and is only visible right after an object has been inserted into the drawing.



This button reveals the fixture control pane and is only visible when at least one lighting fixture is selected and the view is in Live mode.





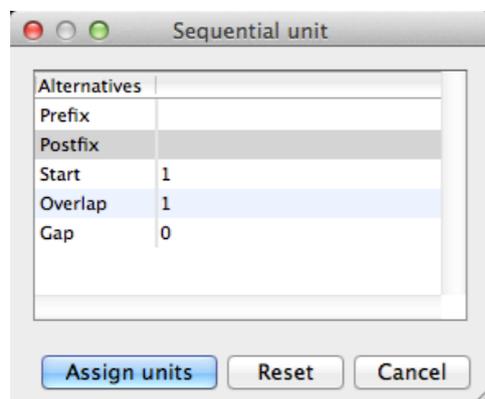
## Sequential Unit

This command allows you to set the Unit property of the selected objects in a consecutive manner. You may specify a Prefix as well as a Postfix to the numbering.

The Start property defines the first number of the range.

The Overlap property allows you to create series such as 1, 1, 2, 2, 3, 3 and the Gap property allows you to create series such as 1, 3, 5, 7.

Notice that if you select objects manually one by one, this defines the order for the numbering. However, if you select them by dragging the mouse over the objects, the order of the objects undefined.



## Sequential Circuit

Sequential circuit essentially works just like sequential uniting – except that you assign circuit numbers to the Channel property of fixtures. You may specify a Prefix as well as a Postfix to the numbering.



This command allows you to sequentially patch fixtures. The order in which you select the fixtures will be the order they are applied to the patch. You may choose the universe and start address by entering the address as Universe.Address. For example, entering 2.1 would have the fixtures start at channel 1 on universe 2. You also have the option of leaving a gap between fixtures if you wish.

## Sequential Patch



Sequential channel essentially works just like sequential uniting – except that you assign fixture numbers to the Channel property of fixtures. Since it is a number and not text, you are not allowed to specify a prefix or postfix.

## Sequential Channel



## Transform

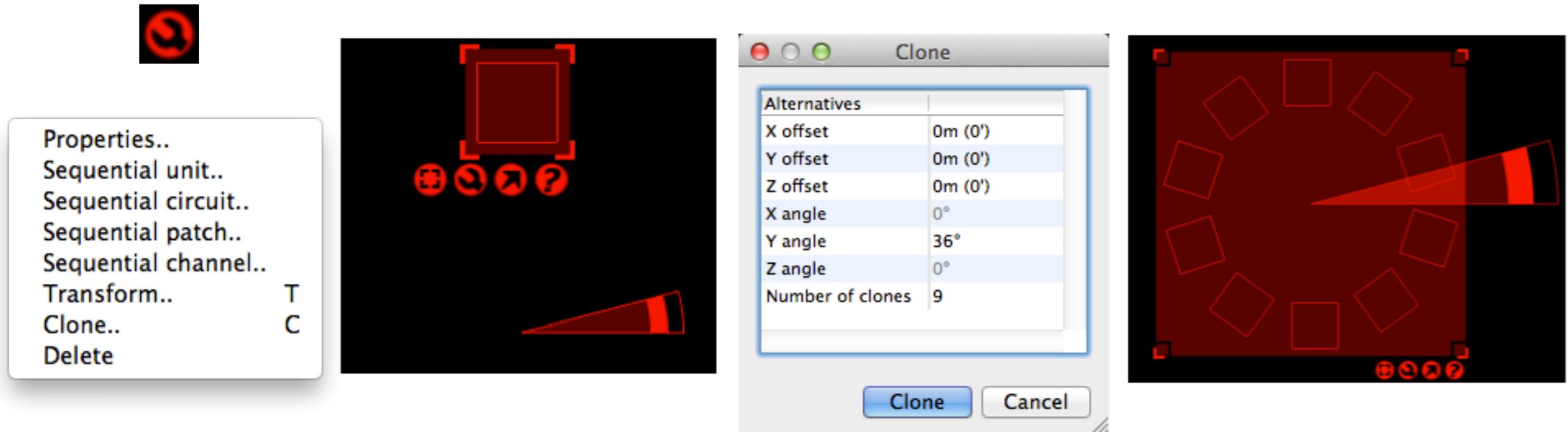
This command allows you to move or rotate by an exact distance or amount of degrees. Use the green navigator cube to guide you with the X, Y and Z directions in the current view. Note that the rotation angle takes the placement of the rotation anchor into account and always performs a Group rotation.



## Clone

This command allows you to create one or more copies of the object or group of objects you have selected. Use the green navigator cube to guide you with the X, Y and Z directions in the current view. The offset values are applied incrementally which means that if you specify two copies with an offset of 2m, the first copy will be created 2m away from the original and the second copy will be created 4m away from the original etc.

Note that the rotation angle takes the placement of the rotation anchor into account. For instance you can create a circle of ten boxes by selecting a box, moving the rotation anchor of the circle, choosing the Clone command, entering an angle of 36 degrees (a full circle of 360 degrees split in ten objects) and 9 copies (since one box already exists, the result will be 10 boxes).

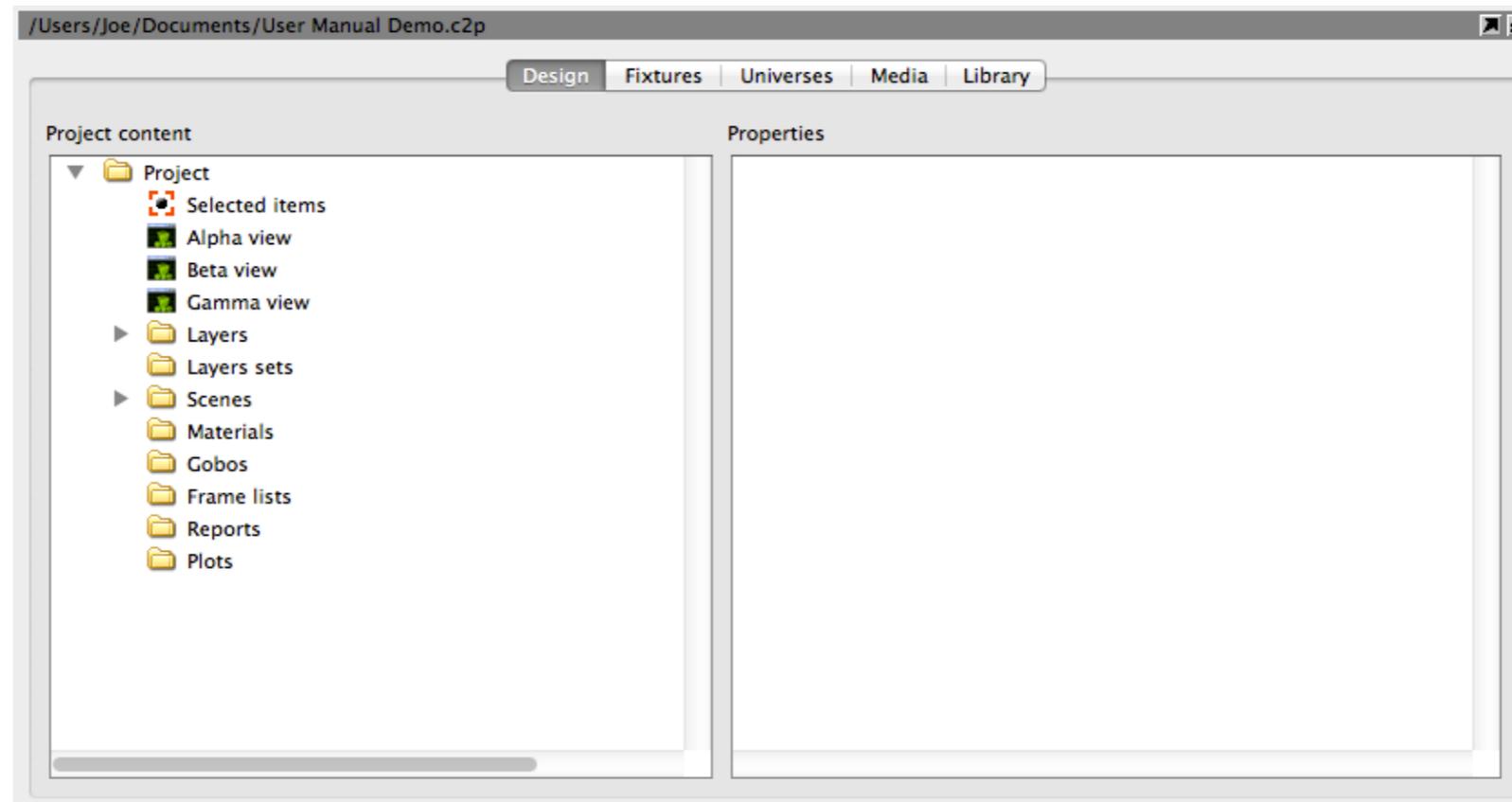


## The Project Window

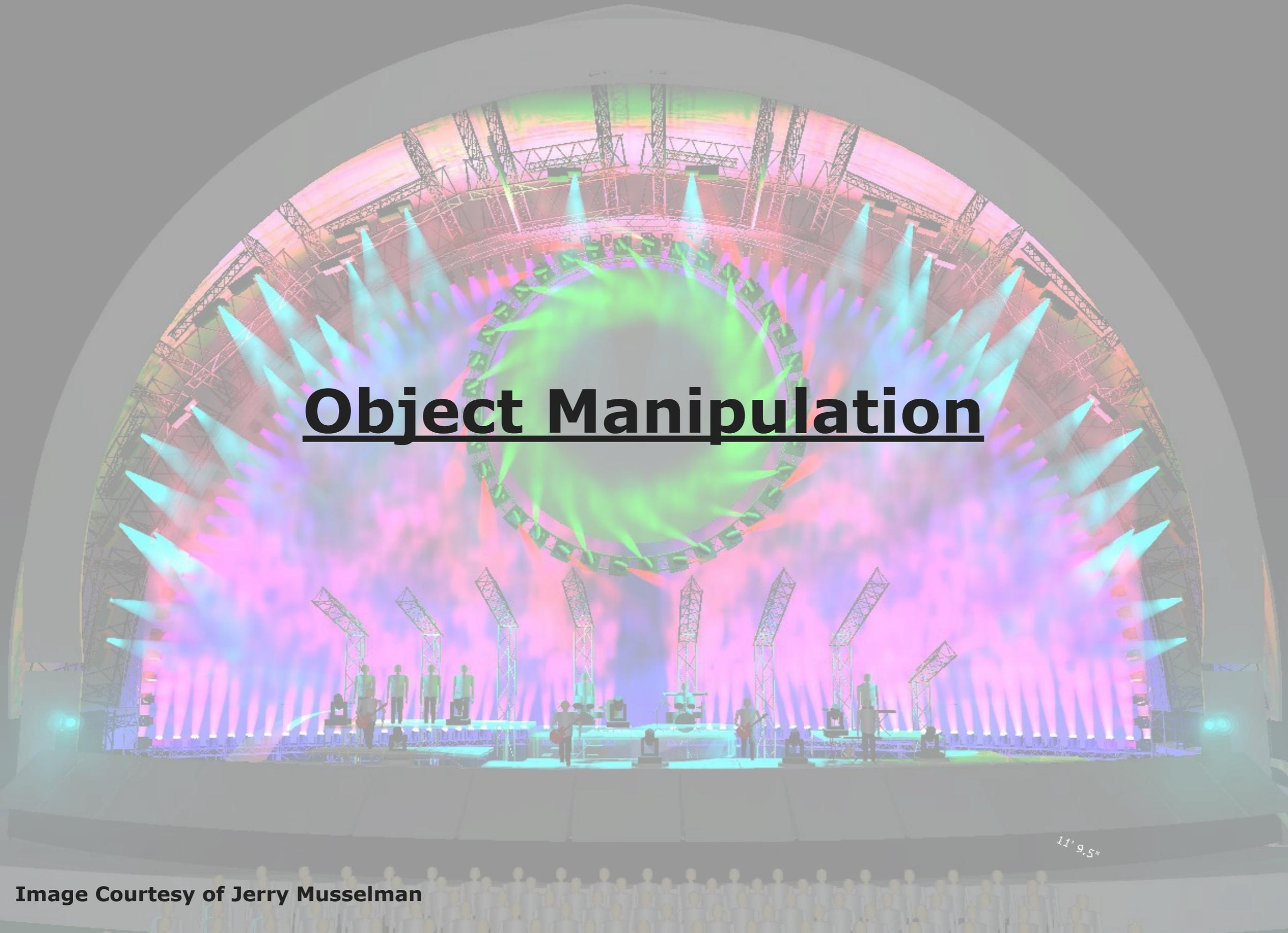
The Project Window is the main information area in Capture. It hosts the properties for the selected items, additional settings for the Alpha, Beta and Gamma Views, settings for Layers and Layer sets, Scene settings, Material settings, Custom Gobo wheels, Custom Frame (color) lists, Reports and Plots.

Furthermore, the window is split into a navigation list down the side with the properties for whatever is selected from that list available on the right. Along the top are some tabs - Design, Fixtures, Universes, Media and Library. Basic examples of the kind of data each tab usually shows is shown in the gallery to the left.

Generally speaking, to add an object of any type to a capture project, it needs to be dragged from the library tab to one of the 2D views. Objects cannot currently be dragged into a 3D view.



# Object Manipulation



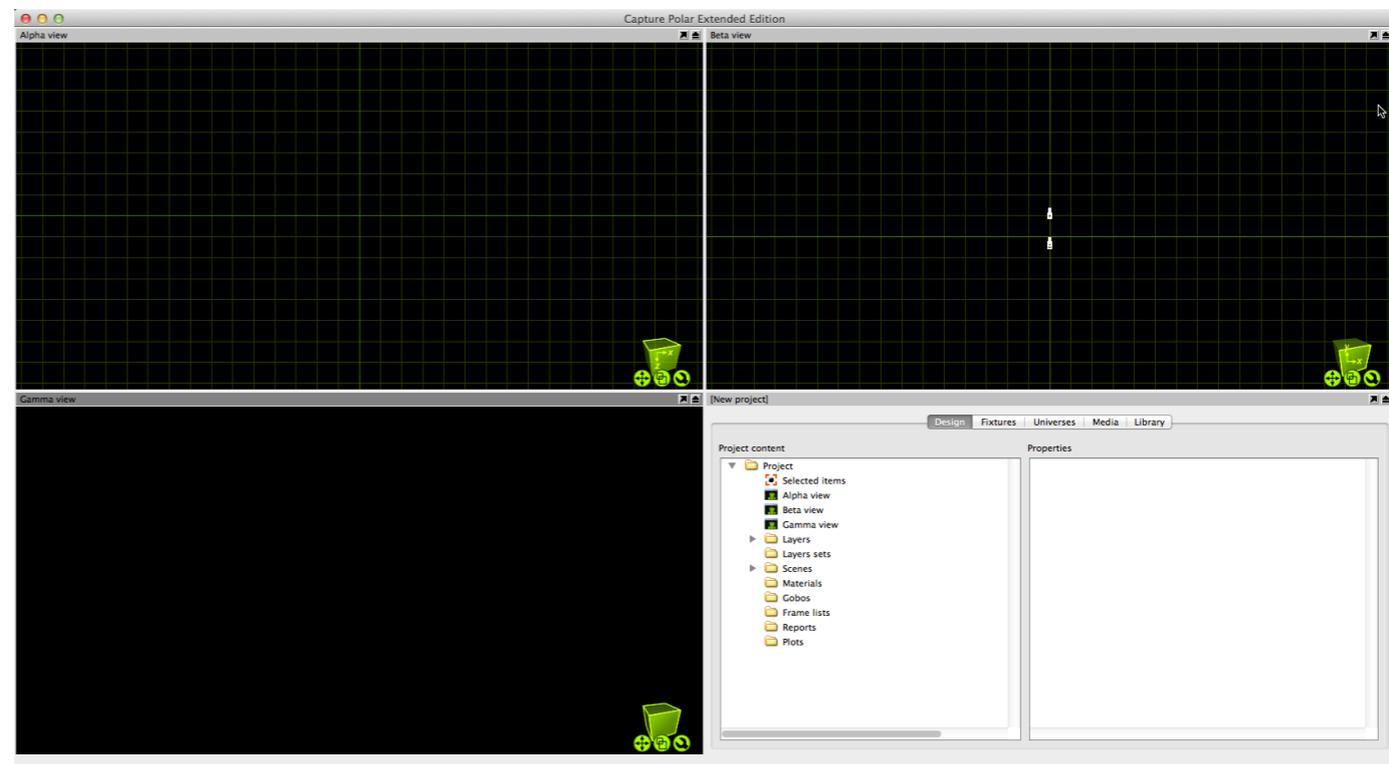
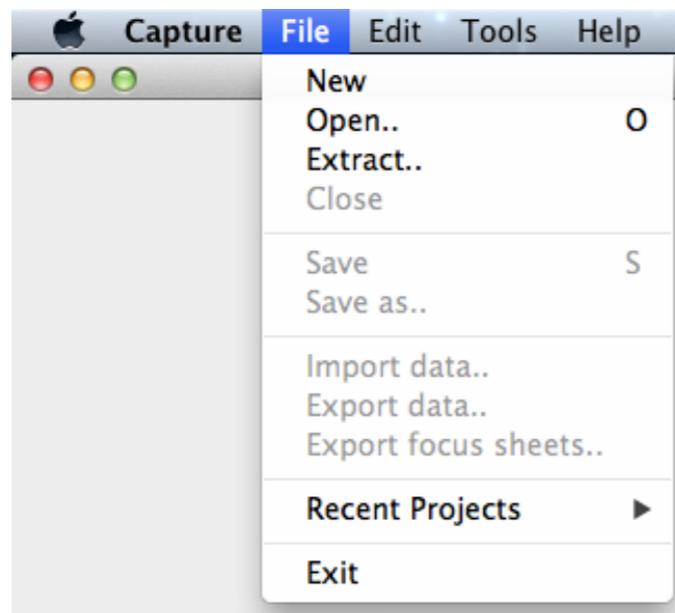
11' 9.5"

## Object Manipulation

Any physical thing in a Capture project file is an object, whether it be a Lighting Fixture, piece of stage deck, LED screen, table or chair - is irrelevant. They are all treated the same in respect to adding them to the project, moving them around, cloning (copying) them, deleting them and accessing their properties.

To explore more about object manipulation, start a new Capture Project. Do this by going to the main menu in the top left corner and pressing **New**.

Leave the Alpha and Beta views with their default settings. Change the Gamma view to **Perspective** and **Live** modes by clicking on the green spanner button and selecting them. Your windows should look the same as the image below.

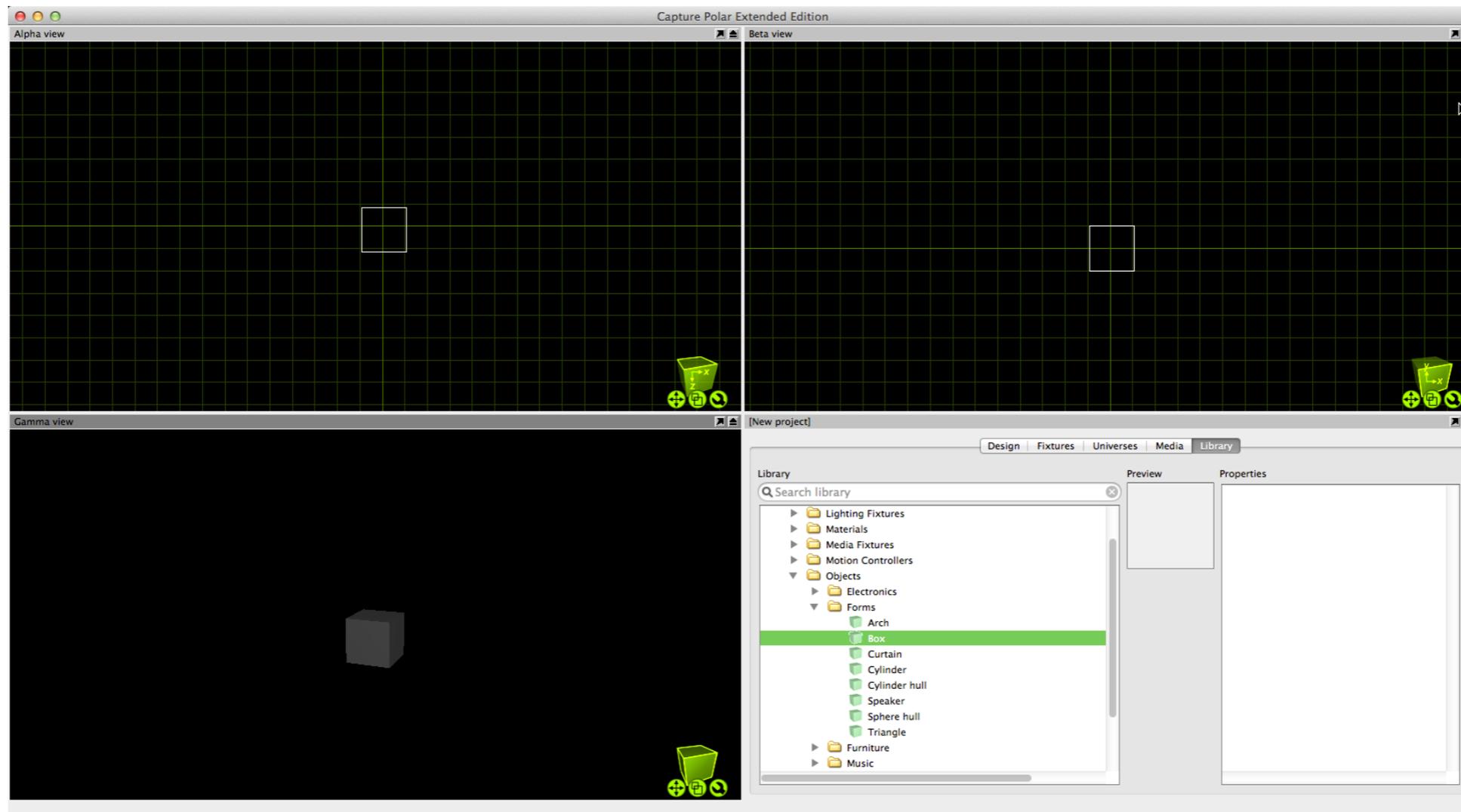


# Object Manipulation

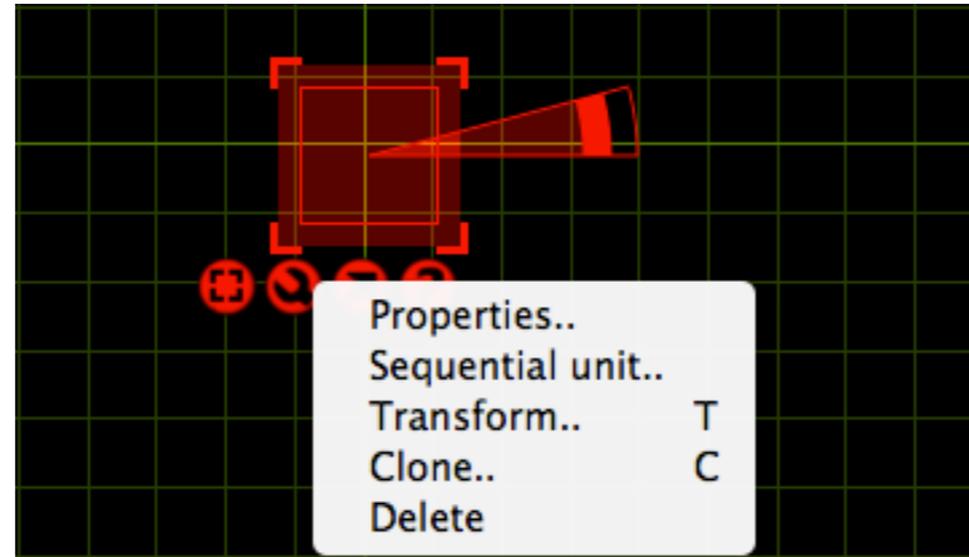
Now we have a clean project file, we can proceed to add some objects to it.

To add an object to the project, we must first locate it from the Library. The **Library tab** in the **Project Window** is where all objects can be located. We want to add a stage floor.

Navigate to the Library, double click on **Objects**, then again on **Forms**. Click on the **Box** form and **drag** it into either the **Alpha** or **Beta** view. Your project should look something like the image below.

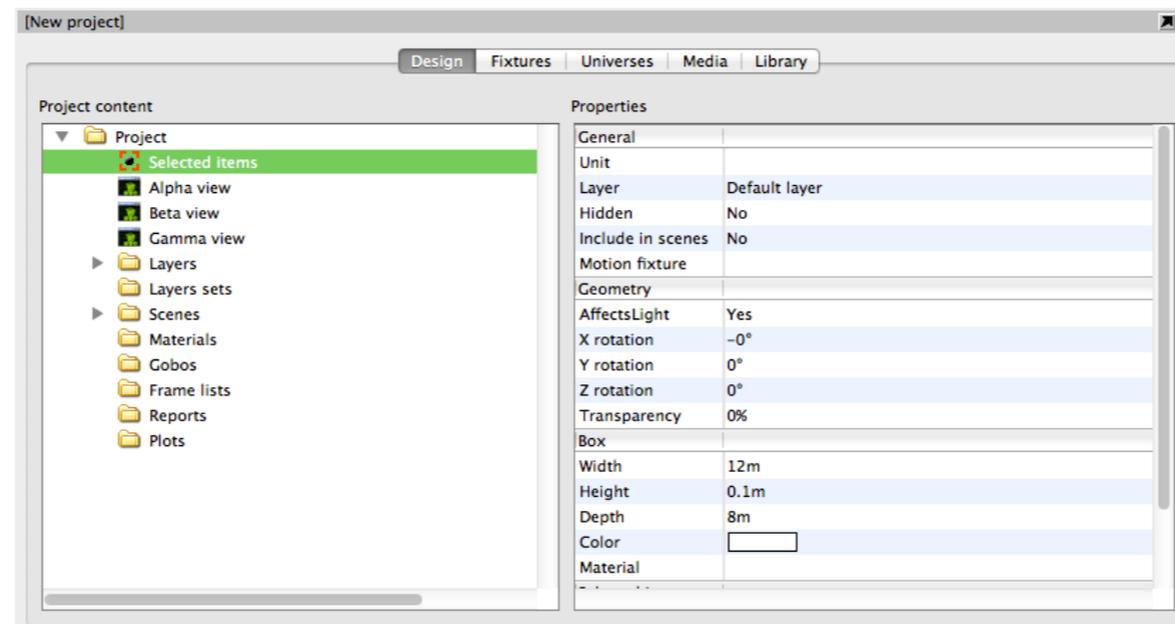


We can now proceed to changing the properties of the box so that it looks more like a stage floor. You may select the box by simply clicking on it in any of the views. The red navigator will appear around the box. Press the red spanner button to present the options available for the box.

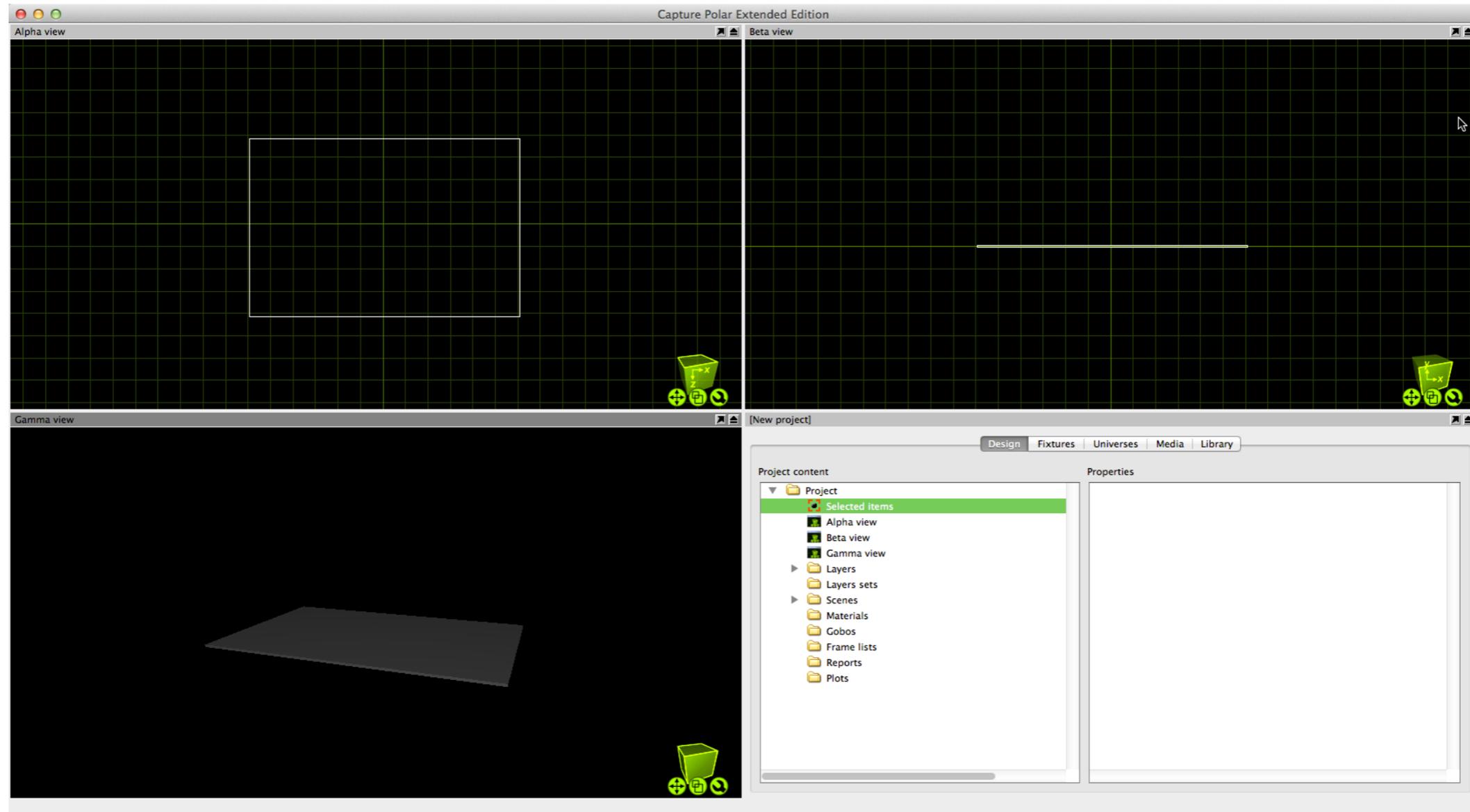


Click the **Properties** option. This will toggle the project window to the **Design tab** with the **Selected Items** section already active showing the properties for the box.

Change the box dimensions to a width of 12m, height of 0.1m and a depth of 8m. Your Properties should look like the image below.



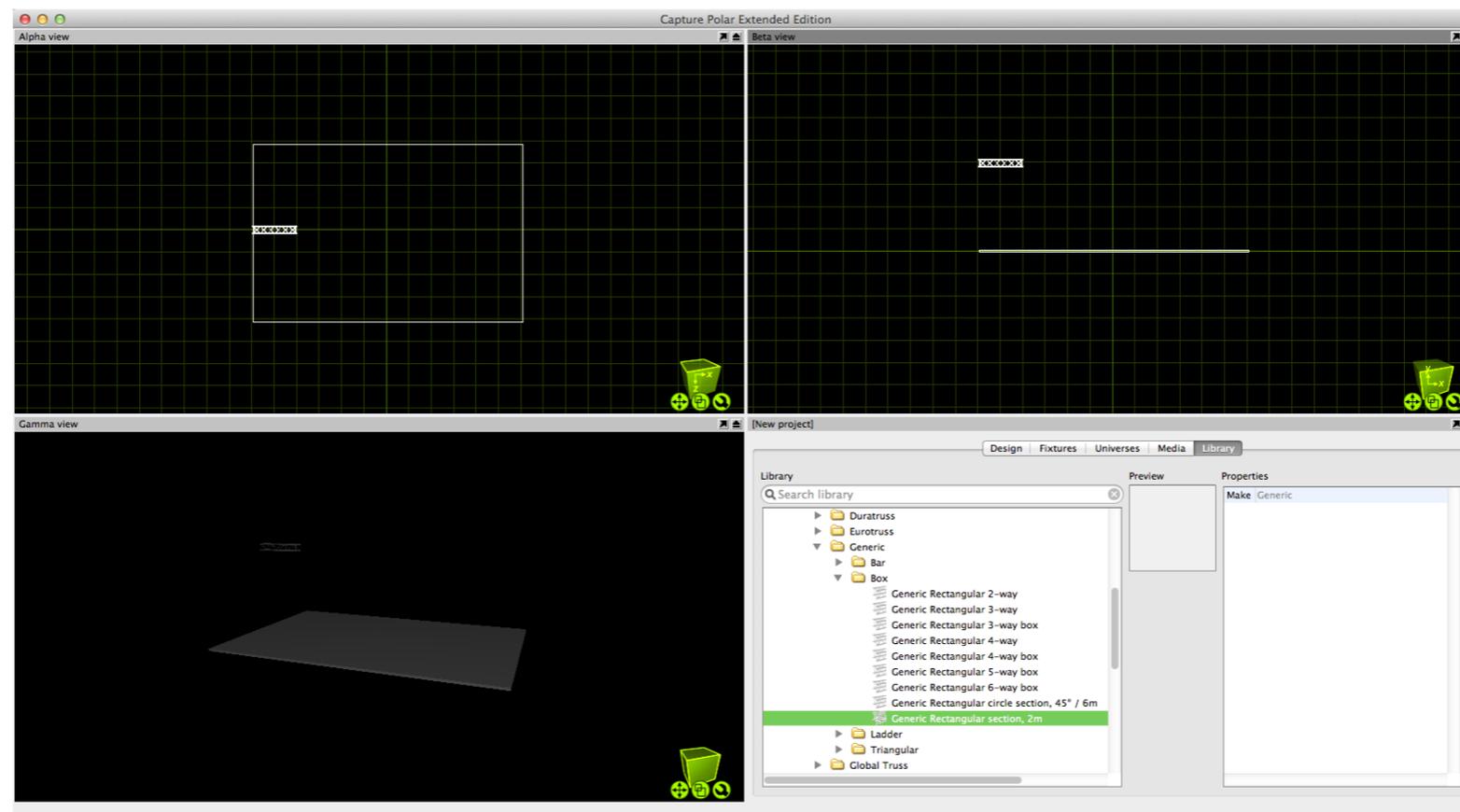
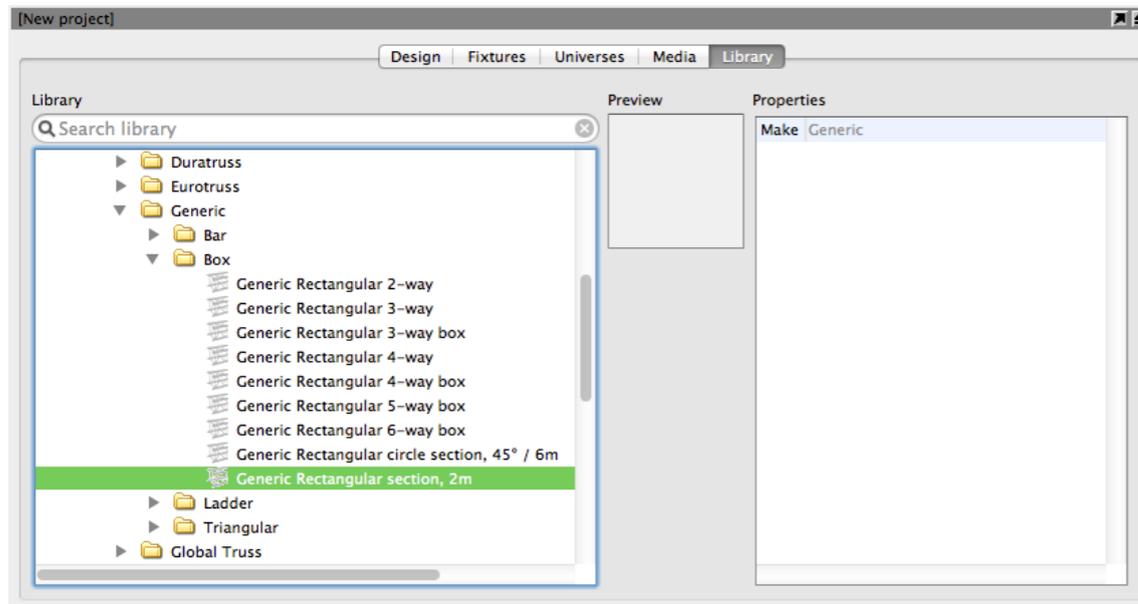
The end result will be the box looking a lot more like a floor, shown below.



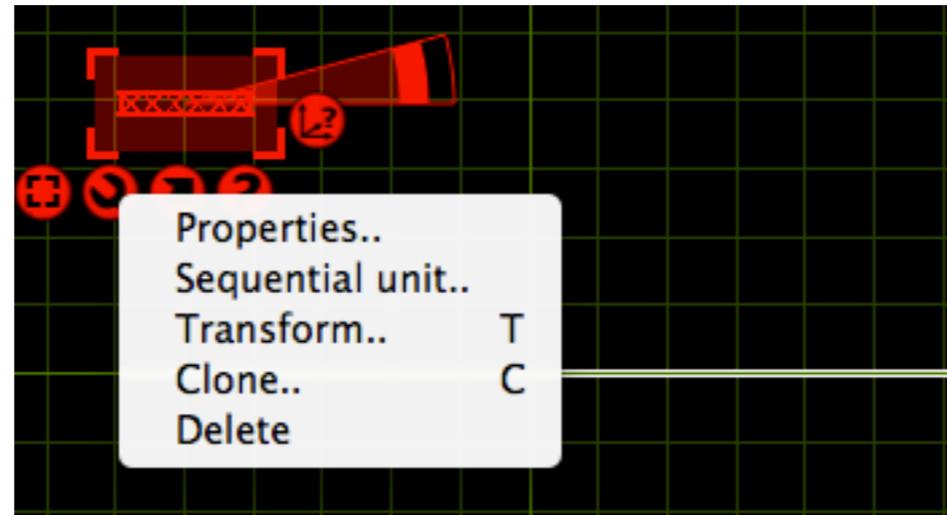
## Object Manipulation

Now we have a stage floor in place we can proceed to add some more objects. We will add some truss in above the stage. Adding a piece of truss is done in the same way the box was added. Locate the desired piece in the library and drag it into either the Alpha or Beta view. For the sake of example, we will use a piece of truss from the **Generic** folder. Double click the **Truss** folder, double click again on the **Generic** folder, and again on **Box**. Choose the **Generic Rectangular Section** and drag it into one of the views.

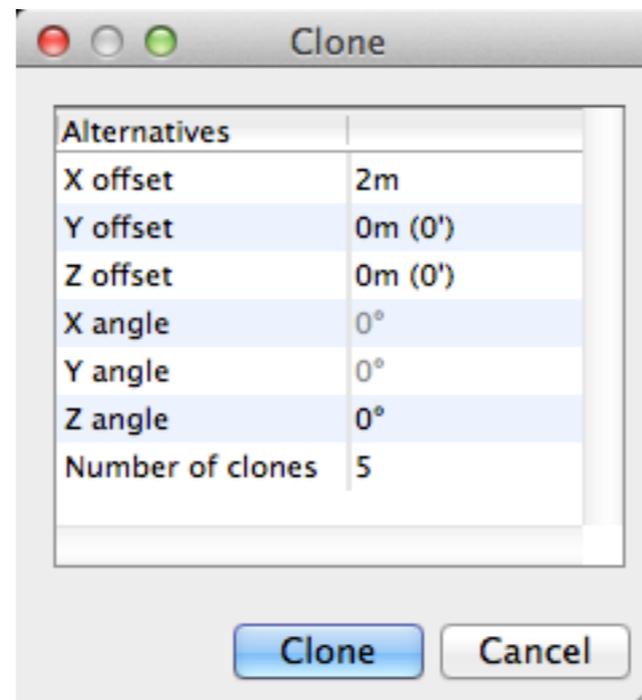
The Truss is 2m wide. We know that the stage floor is 12m wide. We now want to add more 2m sections of truss to result in one long truss going from one side of the stage to the other. This can easily be done with the **Clone** feature.

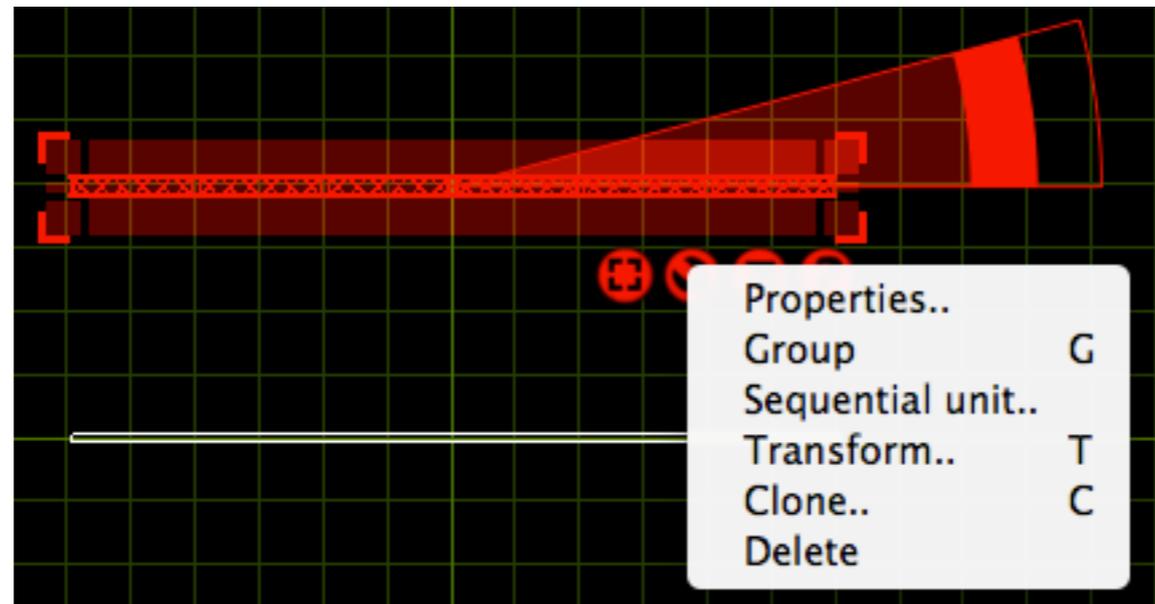
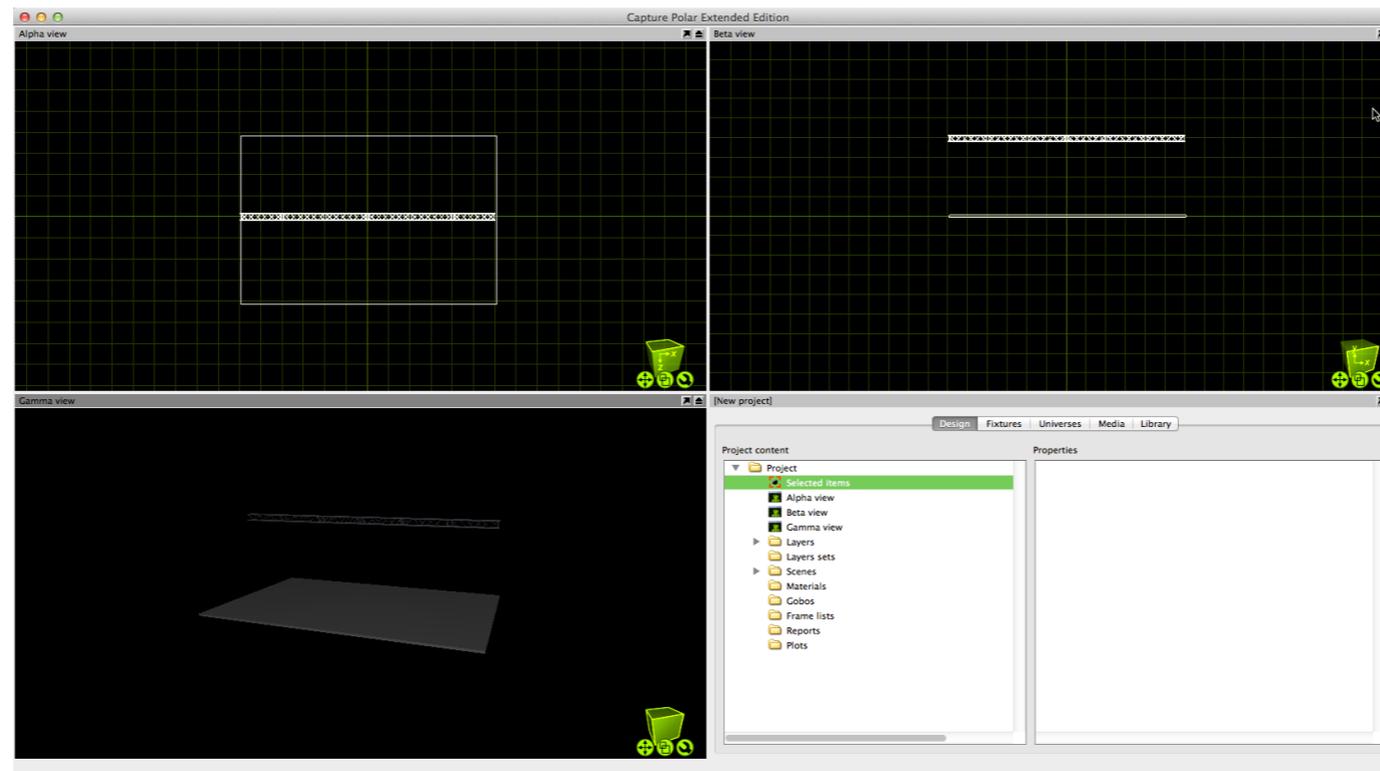


Click on the truss piece to select it. Press the red spanner button to access the available options for the truss.



Click the **Clone** option, this will bring up the **Clone** window. Set the **X Offset** to **2m** and set the number of clones to **5**. This will then add sections of 2m truss right across our 12m wide stage evenly.





Currently, they still act as 6 separate pieces of truss. Select the pieces and press the red spanner button again. Choose the **Group** option and now the 6 sections are grouped together. They can now be moved and manipulated all as one.

# Fixtures

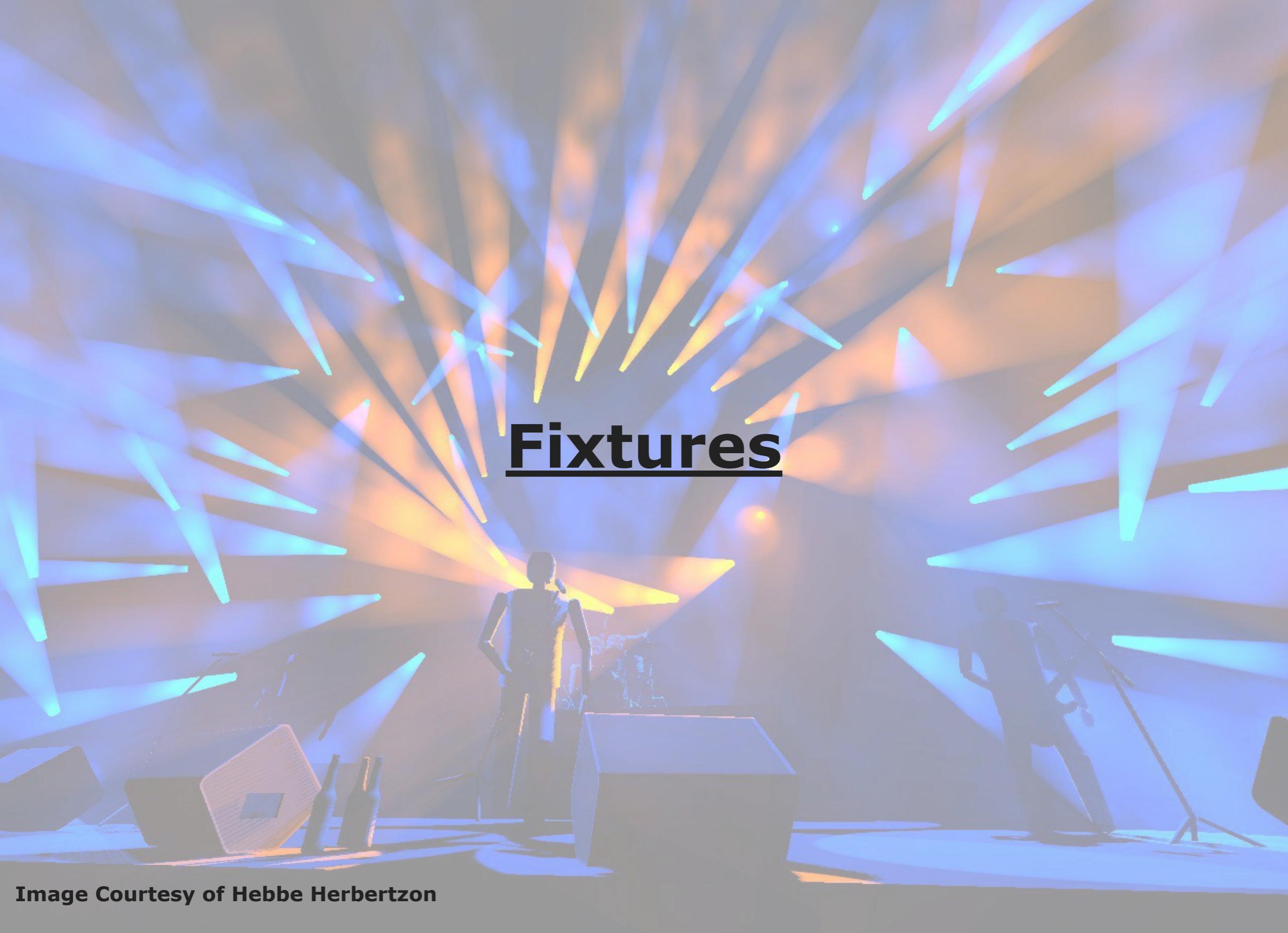
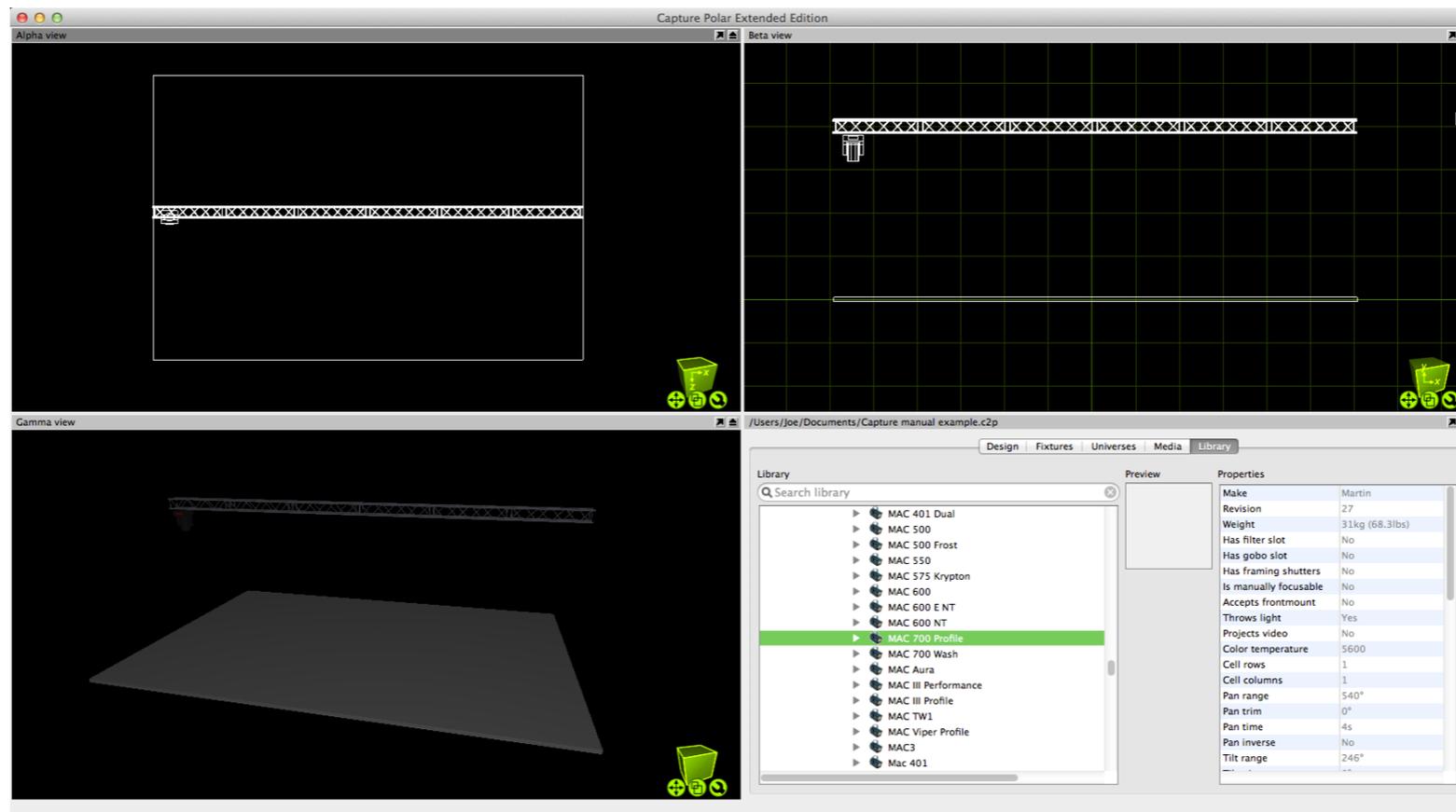
A stylized illustration of a stage performance. The scene is dominated by dramatic lighting, with numerous sharp, conical beams of light in shades of blue and orange radiating from the top. In the center, a silhouette of a person stands with their back to the viewer, illuminated by a bright orange beam. To the right, another silhouette is shown playing a guitar, also under a blue beam. The foreground features silhouettes of stage equipment, including a keyboard on the left and a table with two bottles in the center. The overall atmosphere is one of a high-energy, modern concert.

Image Courtesy of Hebbe Herbertzon

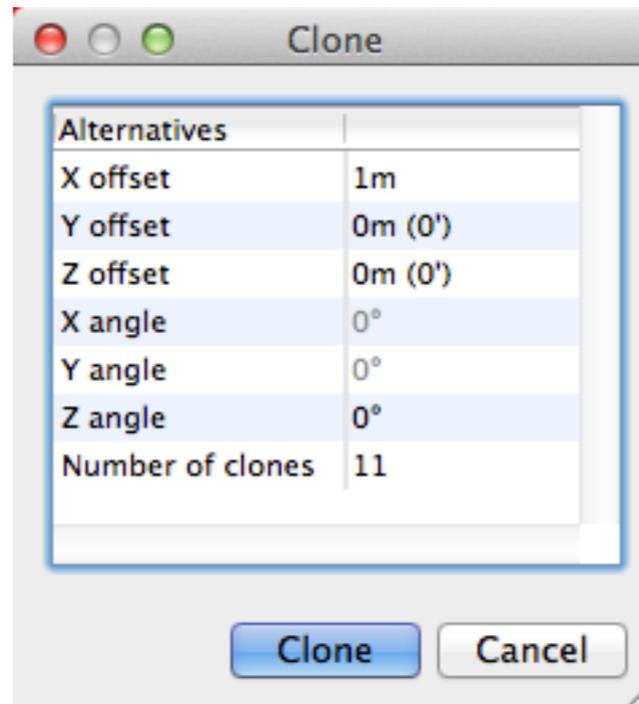
## Fixtures

Fixtures are handled in pretty much the same way as other objects. To add a fixture, it needs to be dragged from the library to one of the 2D views. Fixtures can be cloned, moved, rotated and deleted the same as any other object.

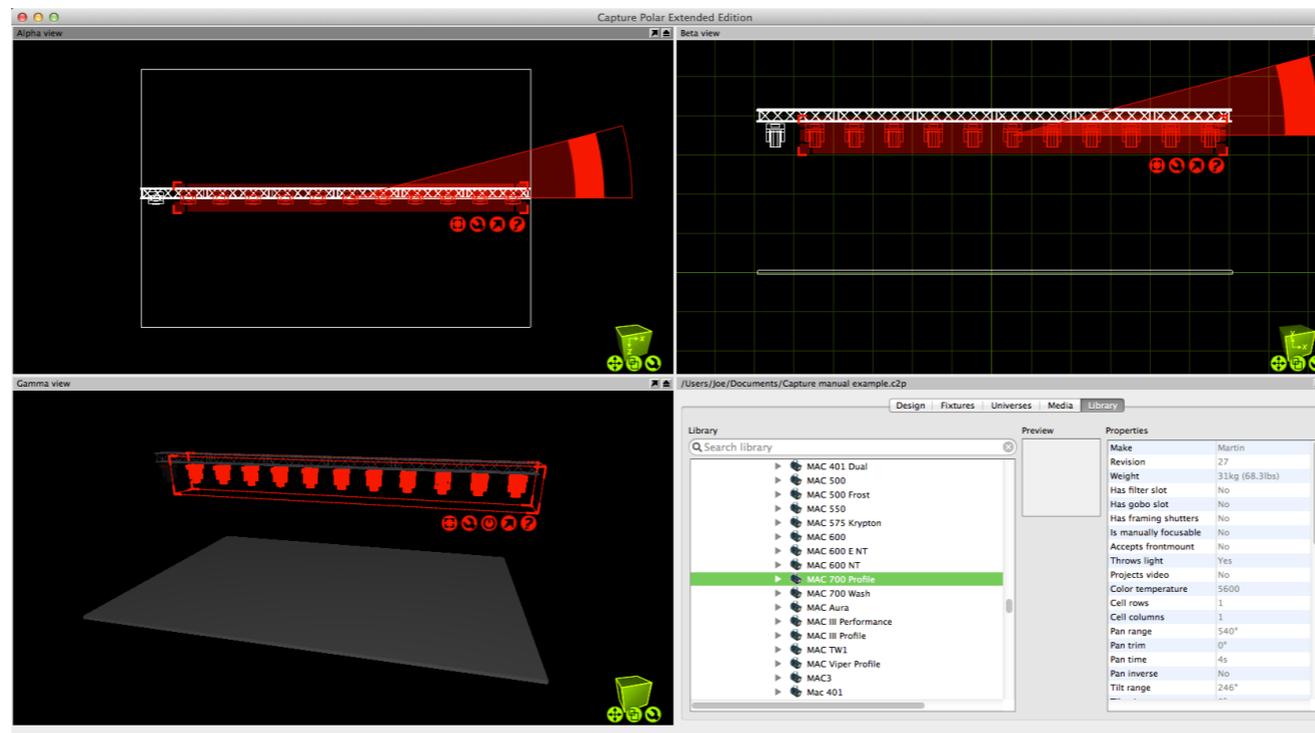
In this example, we add a single Mac 700 profile. We then clone it we end up with one Mac 700 per meter of the truss.



Clone the Mac 700 Profile 11 times so the 12m truss has 1 Mac 700 every meter.



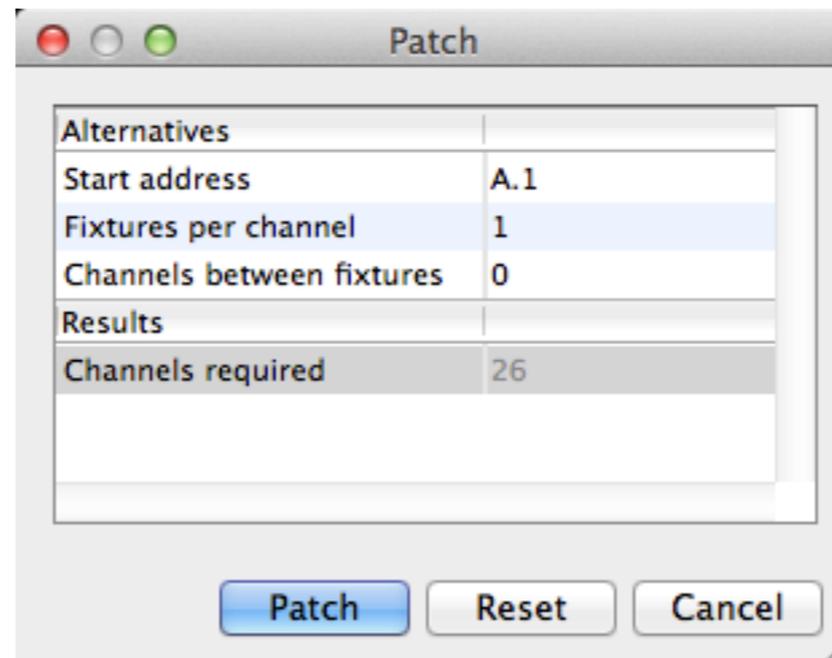
The Mac 700's now span the truss equally.



## Patching

Now that we have added the Mac 700's. They need to be patched.

There are two ways of patching fixtures in Capture. You can select the fixtures you wish to patch, in the order you want them patched, and from the red spanner (options) menu, you can select "Sequential Patch". The sequential patch window will appear giving you the options of "Start Address", which is formatted by double clicking the option and entering Universe.Address. For examples entering 2.1 would patch the fixtures to Universe 2, Address 1. You may also enter a "Channels between fixtures" number, this is essentially an offset tool.



The second option is to drag the fixtures to a start address within a universe window. First, open one of the project universes by double clicking on it in the "Universes" tab of the Project Window. Then select the fixtures in the order you wish to patch them, click and hold the drag button and drag them to a start address in the open universe window.



Universe - A

1	2	3	4	5	6	7	8	9	10	11	12	13		
Martin MAC 700 Profile														
Shutter	Dimmer	Cyan	Magent	Yellow	Color	Rot Gob	Index/	Gb Fine	Fixed G	Macro	Gobo A	Gobo A		
14	15	16	17	18	19	20	21	22	23	24	25	26		
Prism										Martin MAC 700 Profile				
Iris	Focus	Zoom	Pan Coa	Pan Fin	Tilt Coa	Tilt Fin	Pan/tilt	Effects	Shutter	Dimmer	Cyan			
27	28	29	30	31	32	33	34	35	36	37	38	39		
Magent		Yellow	Color	Rot Gob	Index/	Gb Fine	Fixed G	Macro	Gobo A	Gobo A	Prism	Iris	Focus	
40	41	42	43	44	45	46	47	48	49	50	51	52		
Zoom							Martin MAC 700 Profile			Shutter				
Pan Coa	Pan Fin	Tilt Coa	Tilt Fin	Pan/tilt	Effects	Dimmer	Cyan	Magent	Yellow	Color				
53	54	55	56	57	58	59	60	61	62	63	64	65		
Rot Gob		Index/	Gb Fine	Fixed G	Macro	Gobo A	Gobo A	Prism	Iris	Focus	Zoom	Pan Coa	Pan Fin	
66	67	68	69	70	71	72	73	74	75	76	77	78		
Tilt Coa		Tilt Fin	Pan/tilt	Effects	Martin MAC 700 Profile			Shutter						
79	80	81	82	83	84	85	86	87	88	89	90	91		
Fixed G		Macro	Gobo A	Gobo A	Prism	Iris	Focus	Zoom	Pan Coa	Pan Fin	Tilt Coa	Tilt Fin	Pan/tilt	
92	93	94	95	96	97	98	99	100	101	102	103	104		
Effects		Martin MAC 700 Profile			Shutter									
105	106	107	108	109	110	111	112	113	114	115	116	117		
Gobo A		Prism	Iris	Focus	Zoom	Pan Coa	Pan Fin	Tilt Coa	Tilt Fin	Pan/tilt	Effects	Martin MAC 700 Profile		
118	119	120	121	122	123	124	125	126	127	128	129	130		
profile		Cyan	Magent	Yellow	Color	Rot Gob	Index/	Gb Fine	Fixed G	Macro	Gobo A	Gobo A	Prism	Iris
131	132	133	134	135	136	137	138	139	140	141	142	143		
Focus		Zoom	Pan Coa	Pan Fin	Tilt Coa	Tilt Fin	Pan/tilt	Effects	Martin MAC 700 Profile			Shutter		
144	145	146	147	148	149	150	151	152	153	154	155	156		
Color		Rot Gob	Index/	Gb Fine	Fixed G	Macro	Gobo A	Gobo A	Prism	Iris	Focus	Zoom	Pan Coa	
157	158	159	160	161	162	163	164	165	166	167	168	169		
Pan Fin		Tilt Coa	Tilt Fin	Pan/tilt	Effects	Martin MAC 700 Profile			Shutter					
170	171	172	173	174	175	176	177	178	179	180	181	182		
Gb Fine		Fixed G	Macro	Gobo A	Gobo A	Prism	Iris	Focus	Zoom	Pan Coa	Pan Fin	Tilt Coa	Tilt Fin	



## DMX Universes

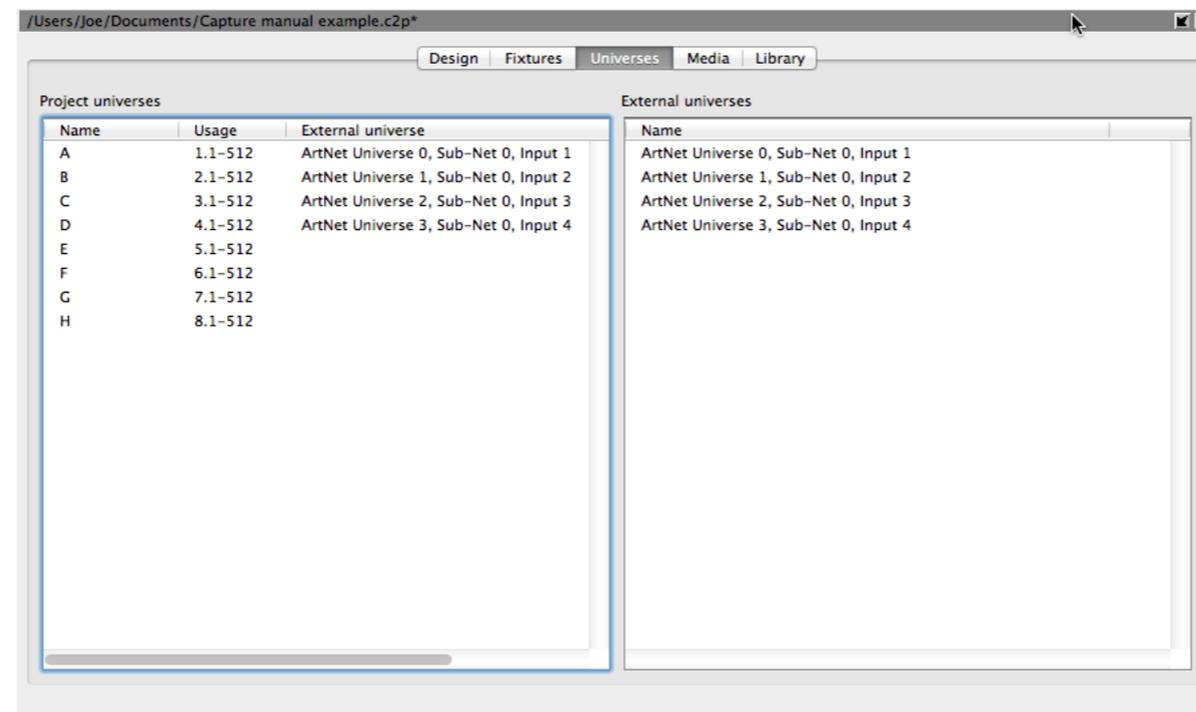
Once fixtures are patched onto Capture's internal universes, you can link those internal universes to external universes that are coming into Capture via external protocols such as Art-Net, sACN (E1.31), MA-Net (Windows version only), Compulite VC's, ETC Net 2/3 and LAN Box.

Very little user intervention is required with most of these protocols. Capture will accept most of them in a "Plug & Play" kind of manner. Once a universe is showing in the "External Universes" section of the Universes tab, then it can be linked to an internal universe in one of two ways.

Universes are managed in the Universes tab of the Project window. The left hand side shows the universes of your project and the right hand side shows universes available from lighting controllers. Capture attempts to automatically connect these, but if you are working with multiple controllers you may wish to override this automatic setup. To do this, select a project universe and then double click on the right hand side on an external universe to pair it with.

By doing this, you will also set the "Block automatic connection" property of the project universe.

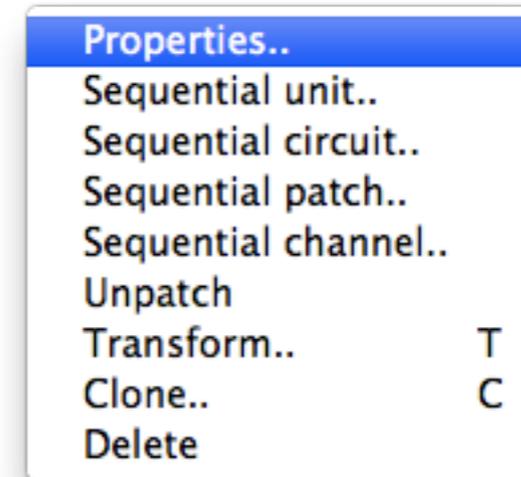
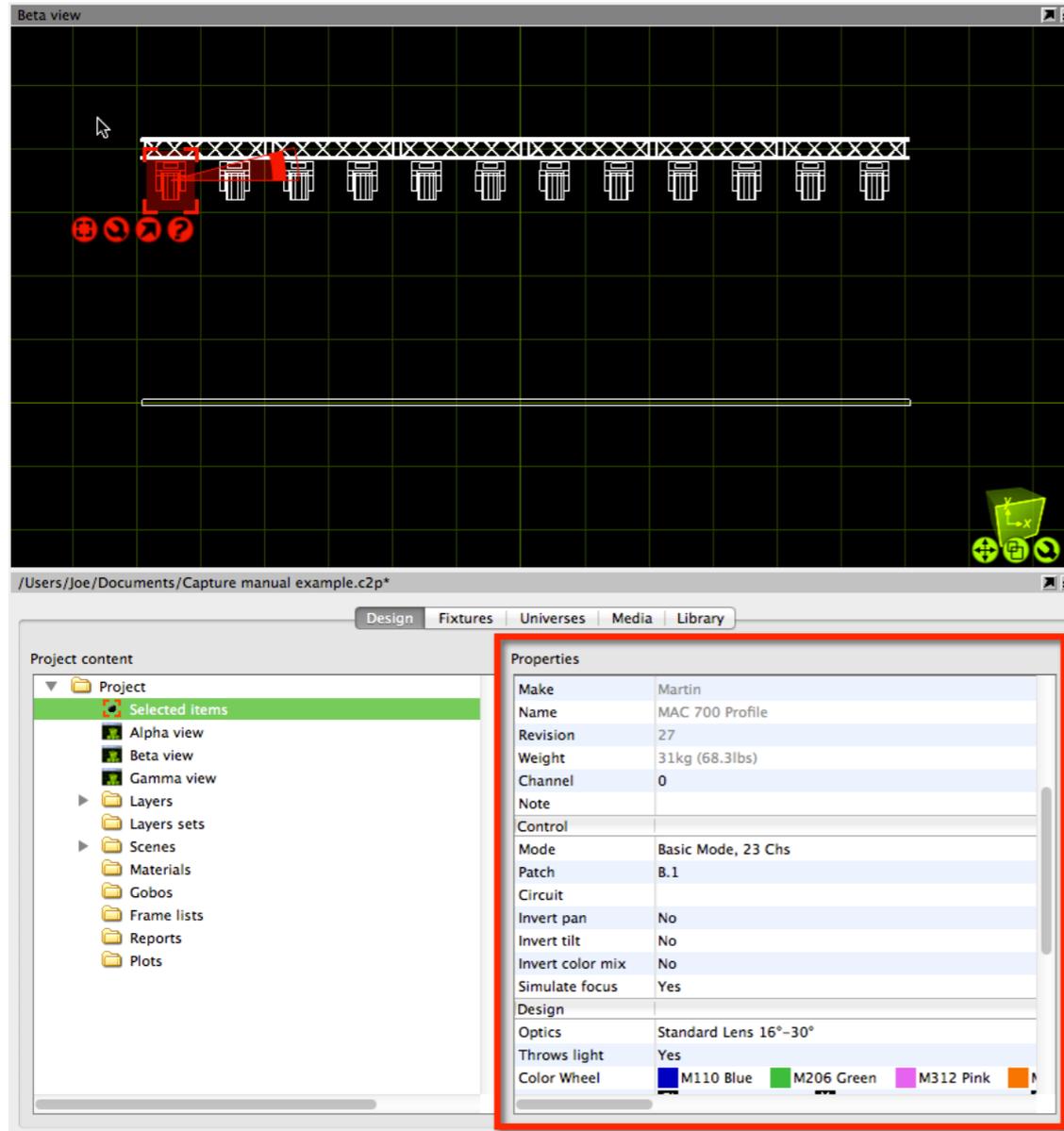
Project universes are by default set up as independent 1-512 channel universes. The Usage column illustrates how fixtures patched to each universe will illustrate their patch. In a theatrical environment it may be more convenient to work with a consecutive range of channel numbers (for instance 1 - 2048). This can be achieved by setting the Patch base property of the universes to match your console setup.



## Fixture Settings

Changing the settings of Fixtures in the Project is done in the **Design Tab** of the **Project Window**.

Some of the main fixture properties that appear here:



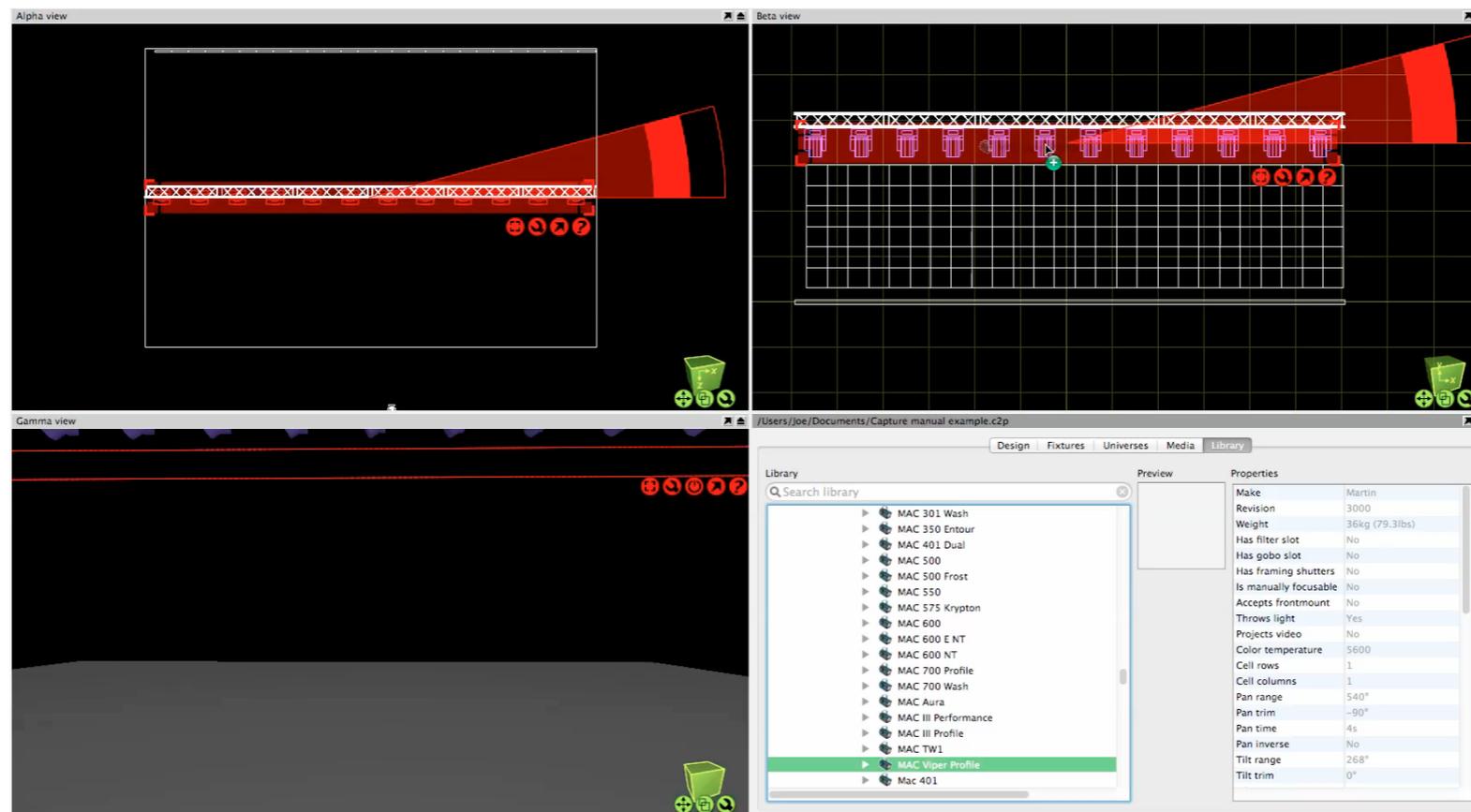
- Fixture Patch
- Fixture Control Mode
- Circuit
- Invert Pan
- Invert Tilt
- Invert Color Mix
- Installed Optics



## Swapping Fixtures

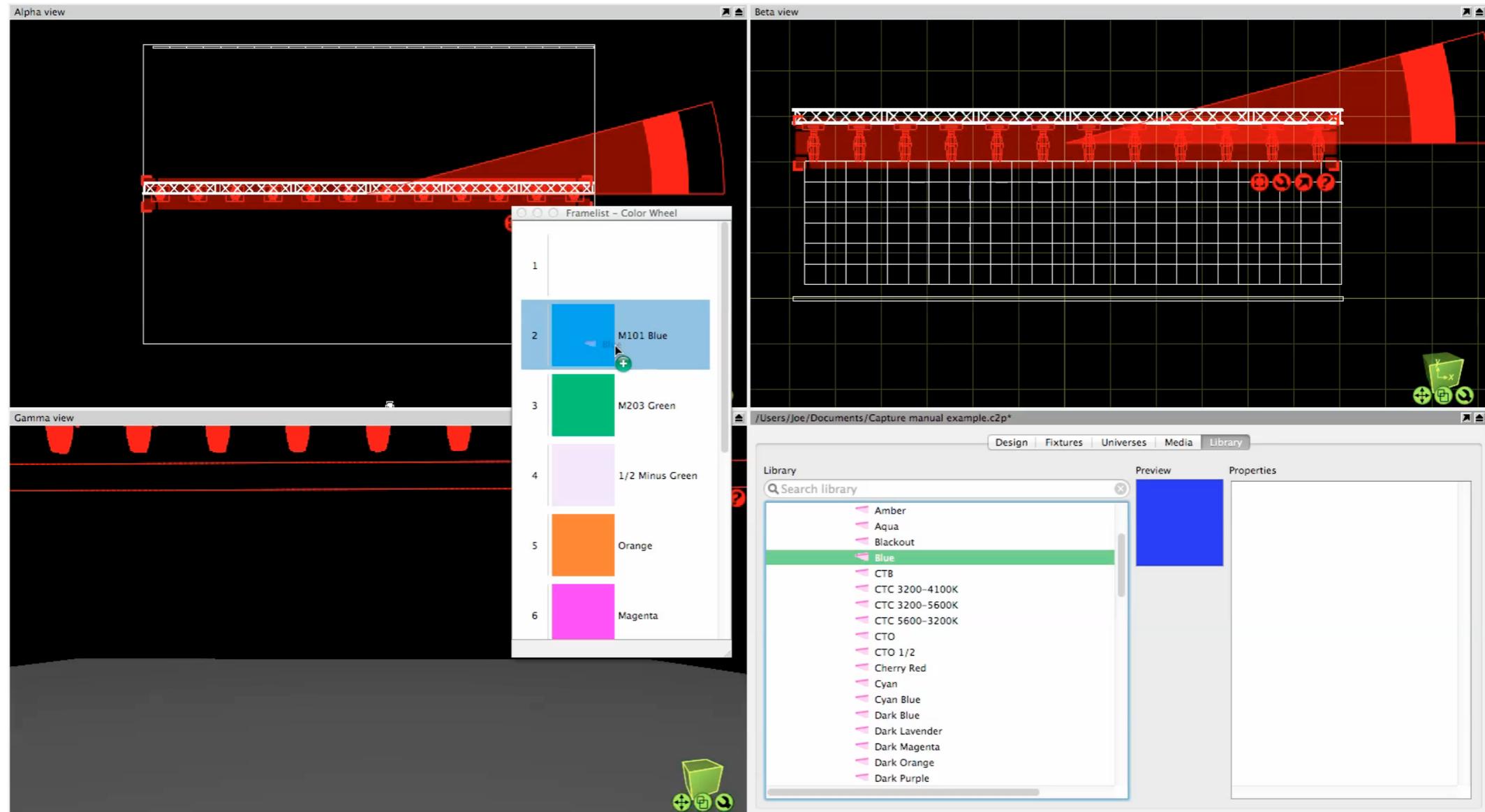
Swapping fixtures in Capture is very easy.

To swap fixtures, select the old fixtures first, then locate your new fixture from the library. Simply drag the new fixture onto one of the selected "old" fixtures. The selection will go a purple colour, once you see the purple colour, release the mouse button and the fixtures will have been swapped.



## Custom Gobo/Color Wheels

Changing Gobo/Color frames in intelligent fixtures is very easy, simply open the current wheel via the fixture properties, double clicking on one of the current colour/gobo slots in the properties opens the wheel, then drag a new color or gobo from the library to a slot on the wheel and the fixture is automatically updated.



The background of the slide features a pair of red curtains with a scalloped top edge and vertical pleats. Two gold tassels are attached to the bottom corners of the curtains. The word "Materials" is centered in the middle of the image.

# Materials

## Using Materials

Materials offer a way of applying a static image or video to an object. The best way to use a material is to think of it as an example of what you object is going to look like. They are useful to make objects appear as different things, for example mapping a picture of a bricks to a thin box, making it appear as a wall.

The library contains a selection of materials which can be applied to objects by dragging and dropping them from the library on to the object. To apply the same material to many objects, you can select the objects first and then drag and drop the material. The image and colour of the material is combined with the colour of the object that the material is applied to. Hence, if the object's colour is set to black, the material will appear black.

You can create your own materials in the **Design** tab of the **Project window** by right clicking on the Materials branch. You can then apply either an image from a file, a video on the local hard drive or streaming video source from a connected media server. To apply your own materials to objects, drag and drop them from the Materials branch rather than the Library tab.

The Self illuminated property allows you to create materials that simulate light emitting surfaces such as flat screens or LED panels.

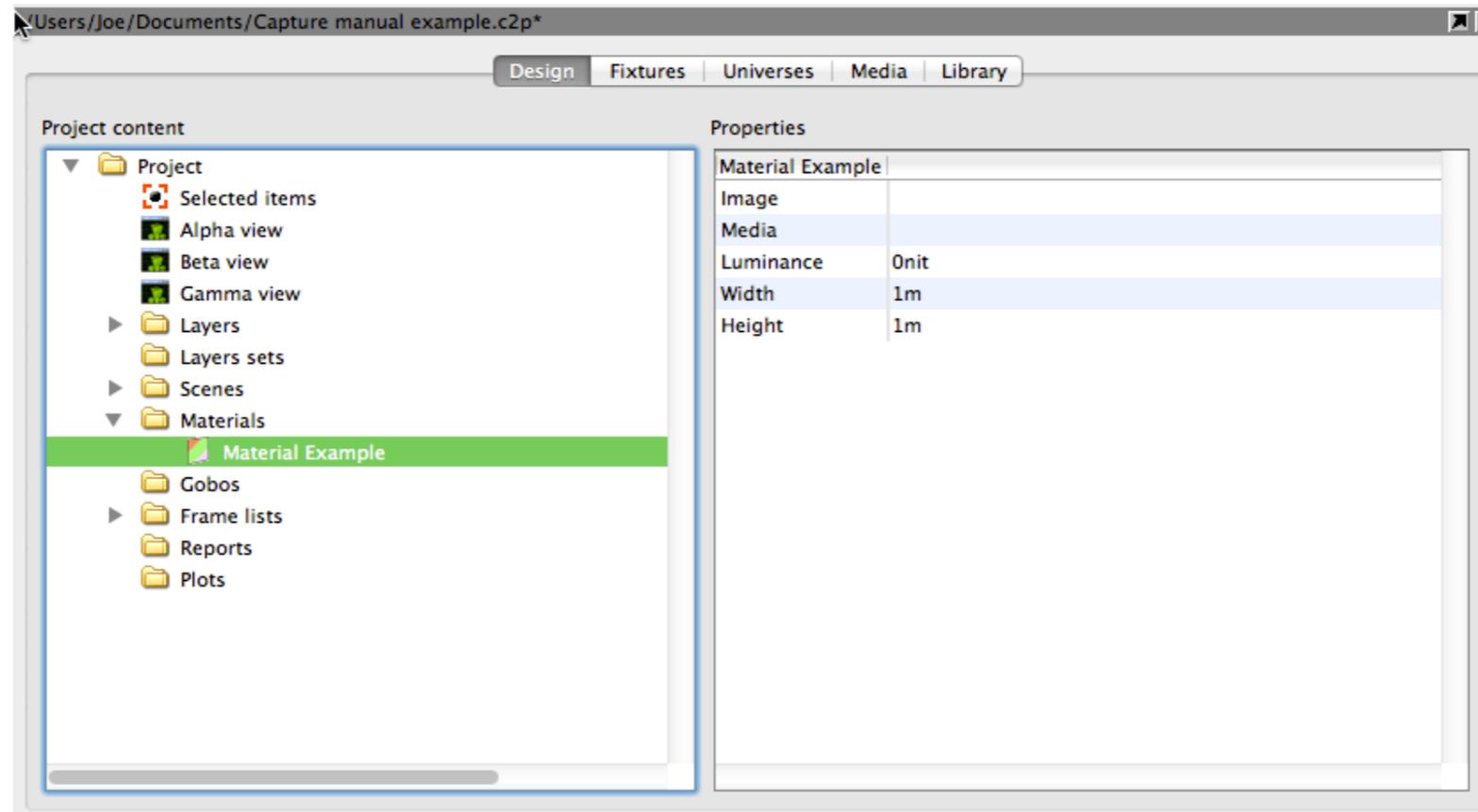
Use the Width and Height properties to define the physical real-world dimensions of the image or streaming video applied. These dimensions define the size of the image regardless of the object it is applied to.



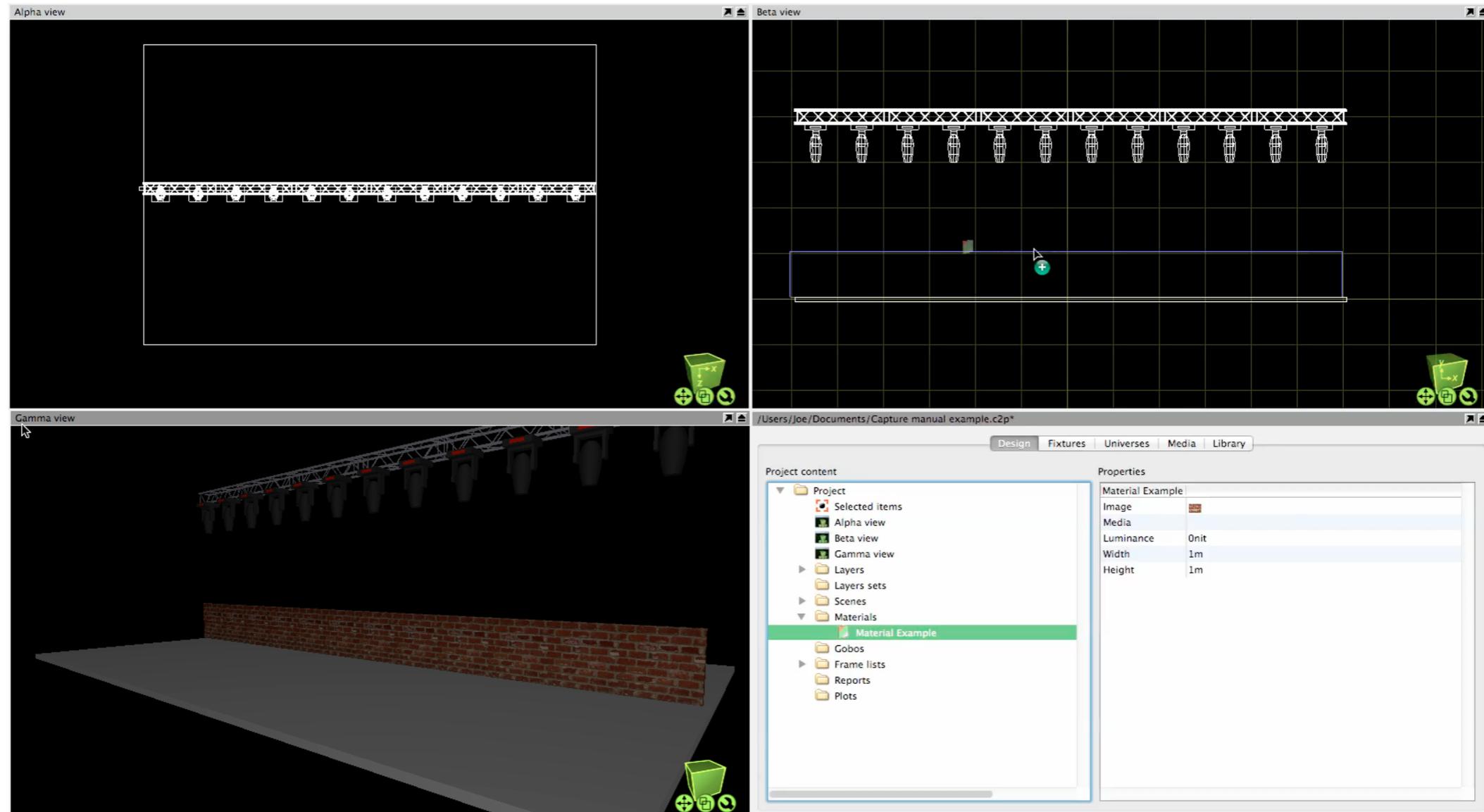
## Using Materials

In this example, we will look at using Materials to change the appearance of a thin box.

First, make a new material in the project window. You may name your material by right clicking on it and choosing "Rename".

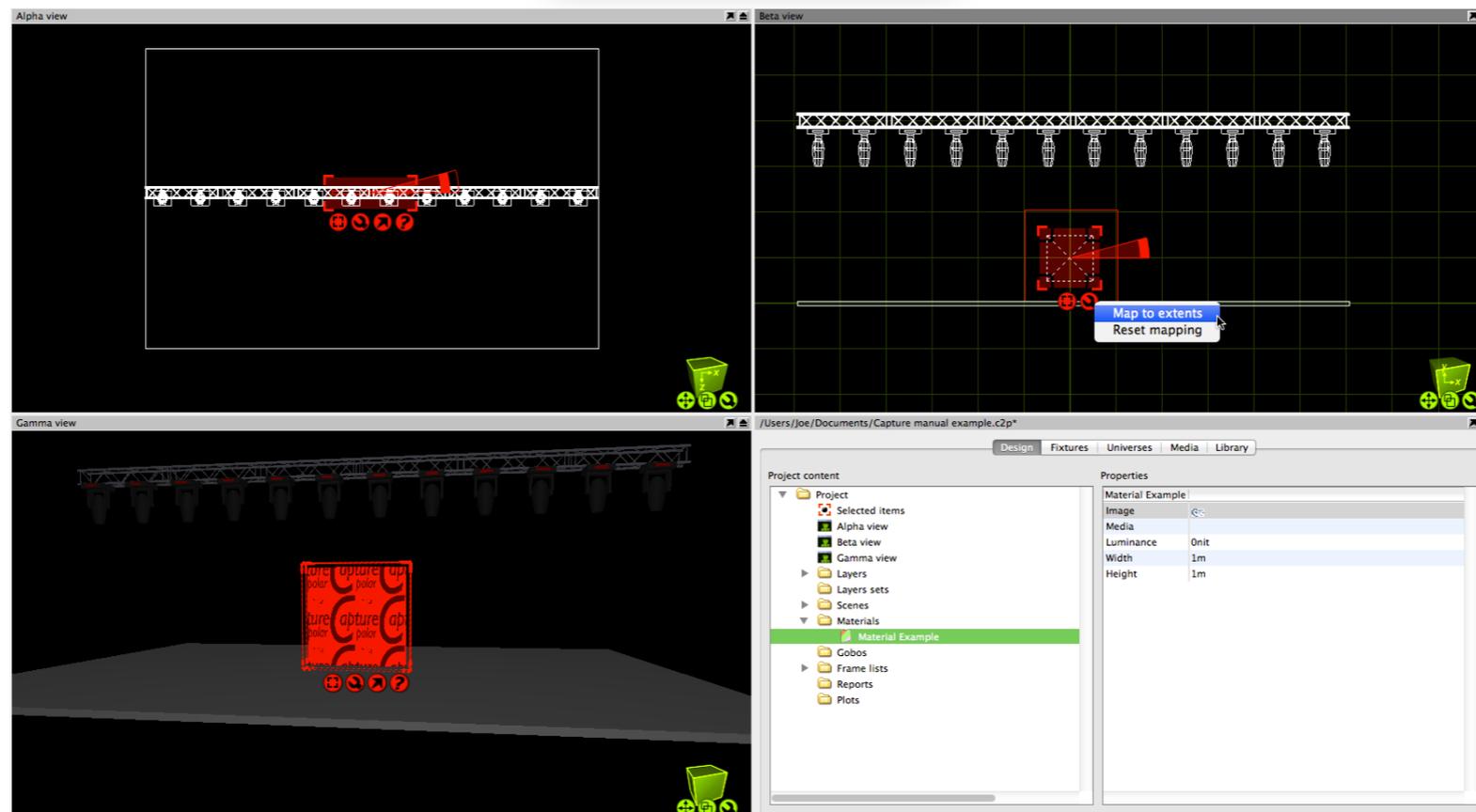
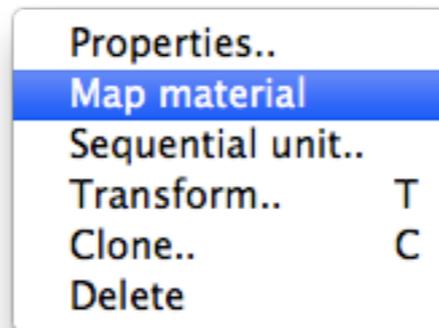


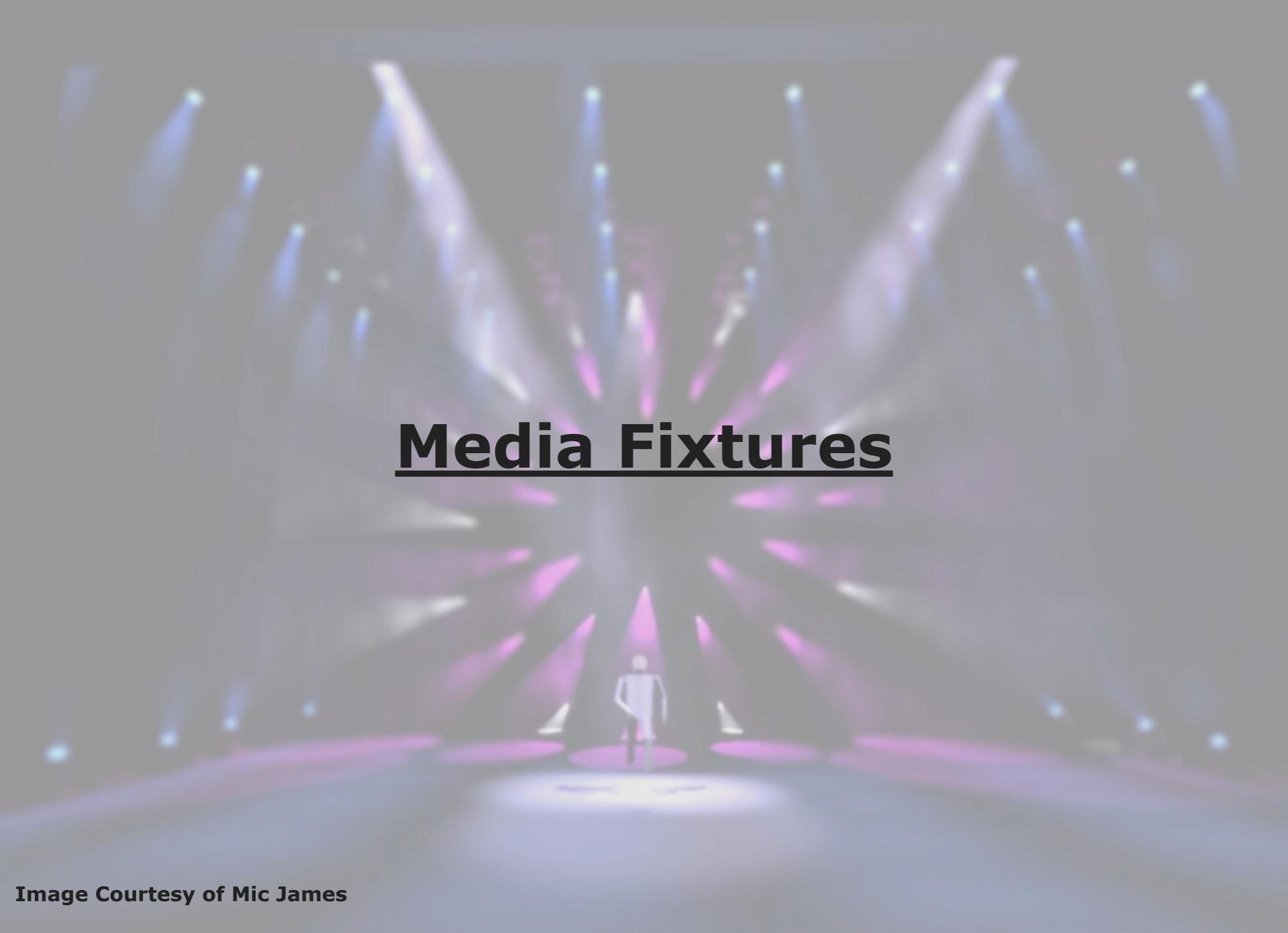
In the material properties, available on the right when the material is selected, you may choose an image or video source. Double click on the image option and choose an image from the local hard drive. In this instance, the image will be a picture of some bricks. Once you have chosen the image, drag the material from the project window to the object you wish to map it to.



## Mapping Materials

Once you have applied a material to an object, you may wish to map the material. Mapping a material consists of using the navigator to resize it, rotate it or fill the object space with the material, the latter is referred to as "Map to Extents". Moving and resizing the material with the navigator is done in the same manner as other objects. You may Map a material to multiple objects at the same time. Simply select all to the objects and drag the material to them, select the "Map Material" mode and map the material to your liking.



A stage with a person in the center, surrounded by numerous spotlights creating a starburst effect. The spotlights are arranged in a circular pattern around the person, and their beams converge towards the center, creating a bright, starburst-like effect. The person is standing in the center of the stage, and the spotlights are arranged in a circular pattern around them. The overall scene is a dramatic, high-contrast stage performance.

# Media Fixtures

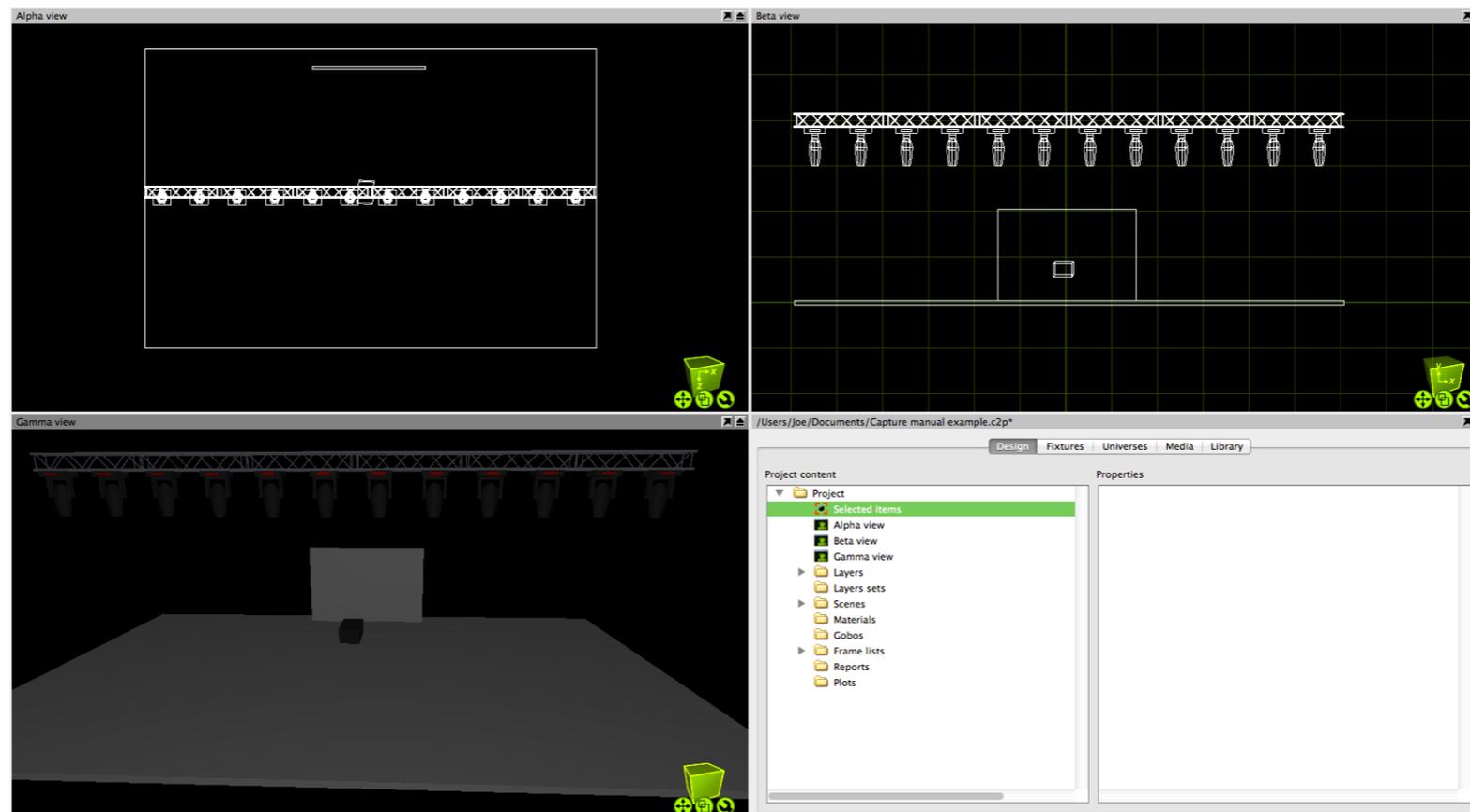
## Video Projectors & Digital Lights

Capture now supports a large library of Media Fixtures such as Video Projectors and Digital Lights. Adding a Media Fixture to a Capture Project is the same as anything else - drag it from the library into one of the 2D views.

With Projectors and Digital Lights, they need a video source for any output to be visible. Much like LED Screens, the video source may be an internal video player where you choose a video file on the computer and play that. Alternatively you may also choose a video source from an external Media Server via CITP for the video source of a Projector.

In this instance we will just use a file on the computer and look at CITP sources in a later chapter.

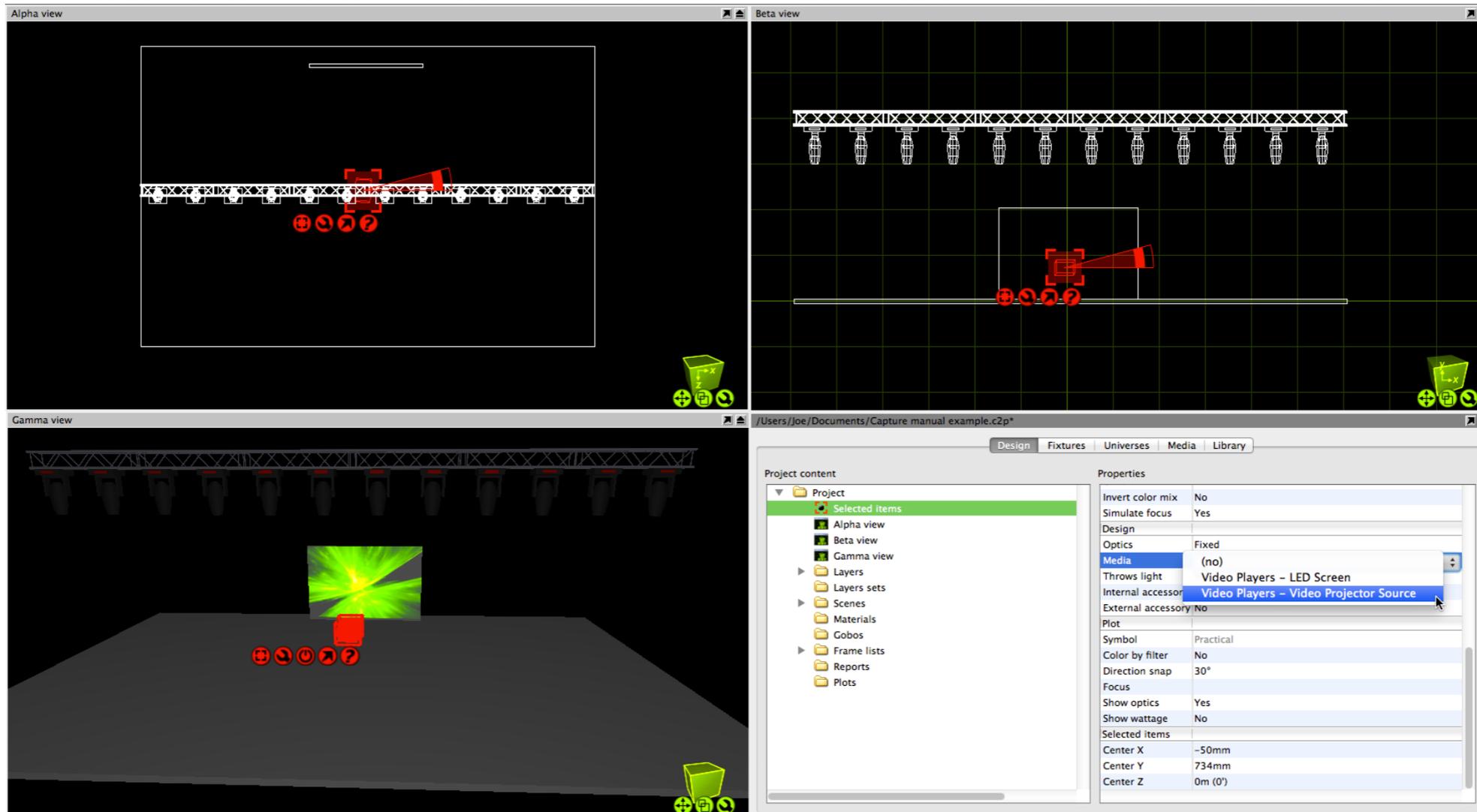
Add a video projector to the project by dragging it from the library to one of the 2D views. You can select a non specific projector from the "Generic" section of Media Fixtures in the library. Add a box, and change its properties so that it looks like a video screen. Position the projector so it is pointing at the screen.



Now, to play video from the projector, you must make a video player within capture. Simply, go to the Media tab in the project window and press the "Add" button in the top right corner and name the Video Player - "Projector Video". Press the "Add Video" button and choose a video file from the local hard drive. You may select multiple videos if you wish.

Once you have selected the video you wish to play through the projector, press the play button next to it so the video is playing.

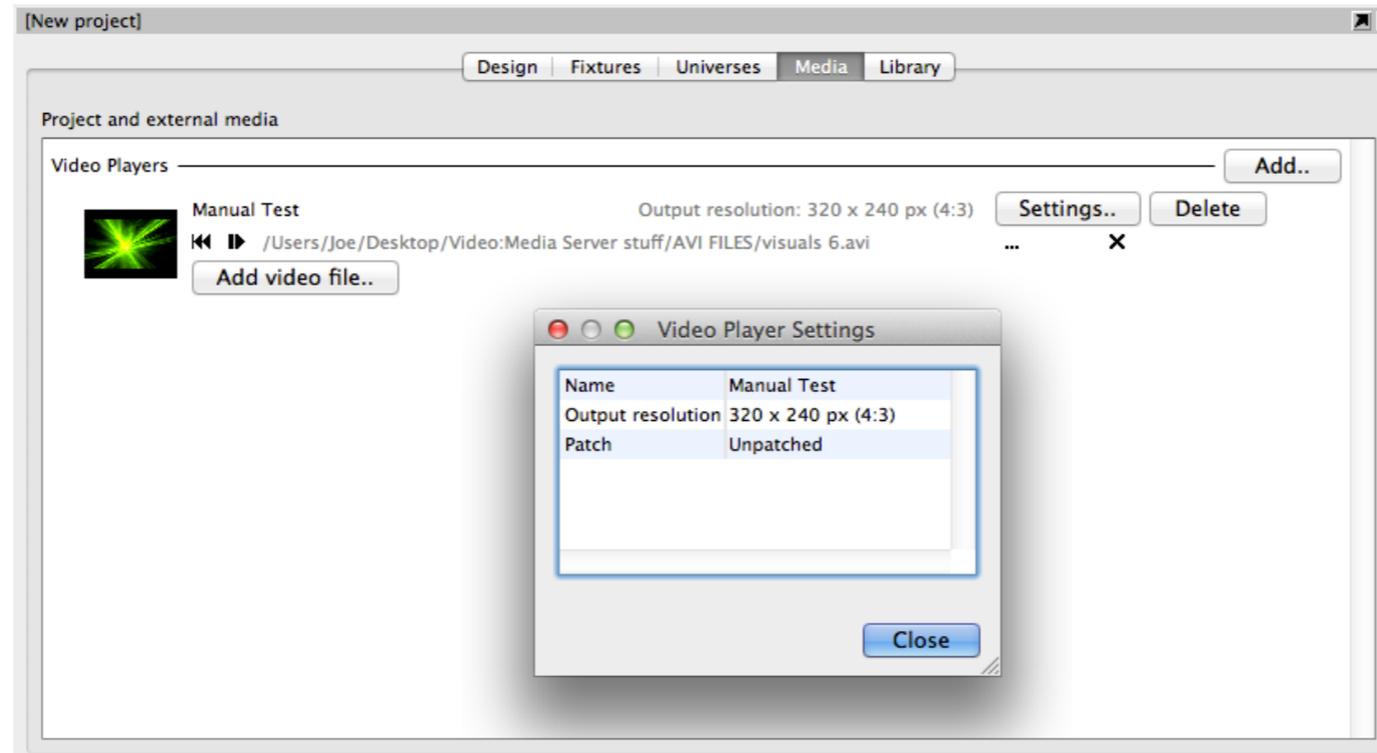
Select the Video Projector and access its properties. In the Project Window, double click on the "Media" Property of the projector and choose the video player you made.



## Patching Video Players to DMX

As discussed in the previous section, you can use an internal Video Player to play videos or images on Video Projectors in Capture. The Video Player can be controlled by DMX if desired.

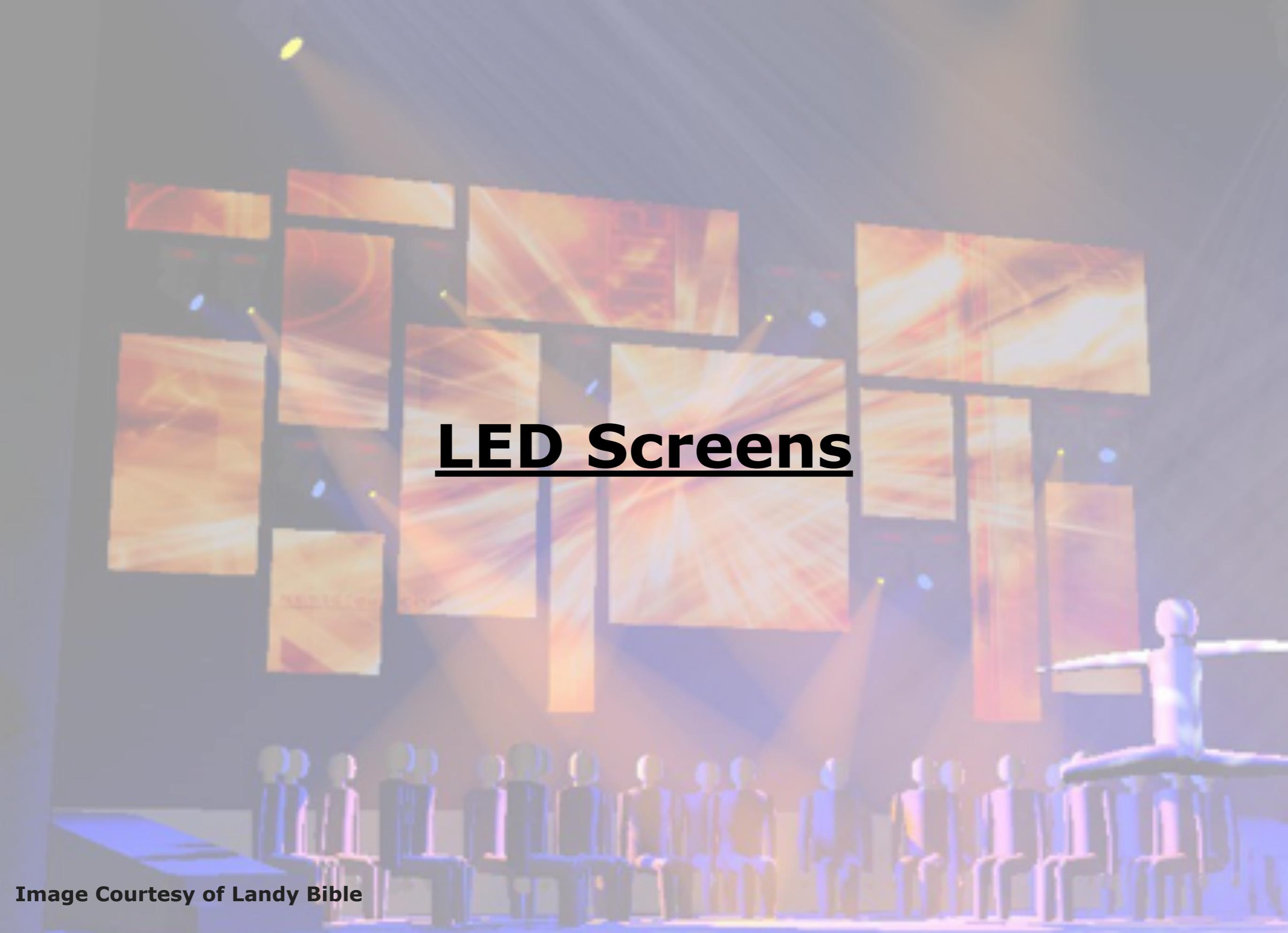
The Patch property of the Video Player can be accessed by clicking "Settings.." for the desired Video Player in the Media tab.



CHANNEL 1 CONTROL		CHANNEL 2 PLAYLIST INDEX	
0-7	Pause	0-7	Playlist entry 1
8-15	Play	... 8 DMX Values per entry	
16-23	Replay (plays from the start)	248-255	Playlist Entry 32
24-31	Stop		



# LED Screens

A stage setup featuring several large LED screens displaying abstract, glowing orange and yellow patterns. A person is standing on the stage to the right, and an audience of stylized figures is seated in the foreground. The scene is lit with blue and purple stage lights.

## LED Screens

Capture is not only capable of 3D rendering for Lighting Fixtures, but also a wide range of LED Screens too.

Adding an LED screen to a project, is the same as adding a fixture or object. LED Screens can be found under the **Media Fixtures** section of the library. Locate the particular model you require from the library and drag it into one of the 2D views. Use the clone function to clone the LED panel however many times is required to create the screen size you desire.

Once You have added in an LED screen of the desired size. Mapping video to the screen is done with the use of **Materials** and **Video Players**.

Materials are images or videos you add to an object in capture.

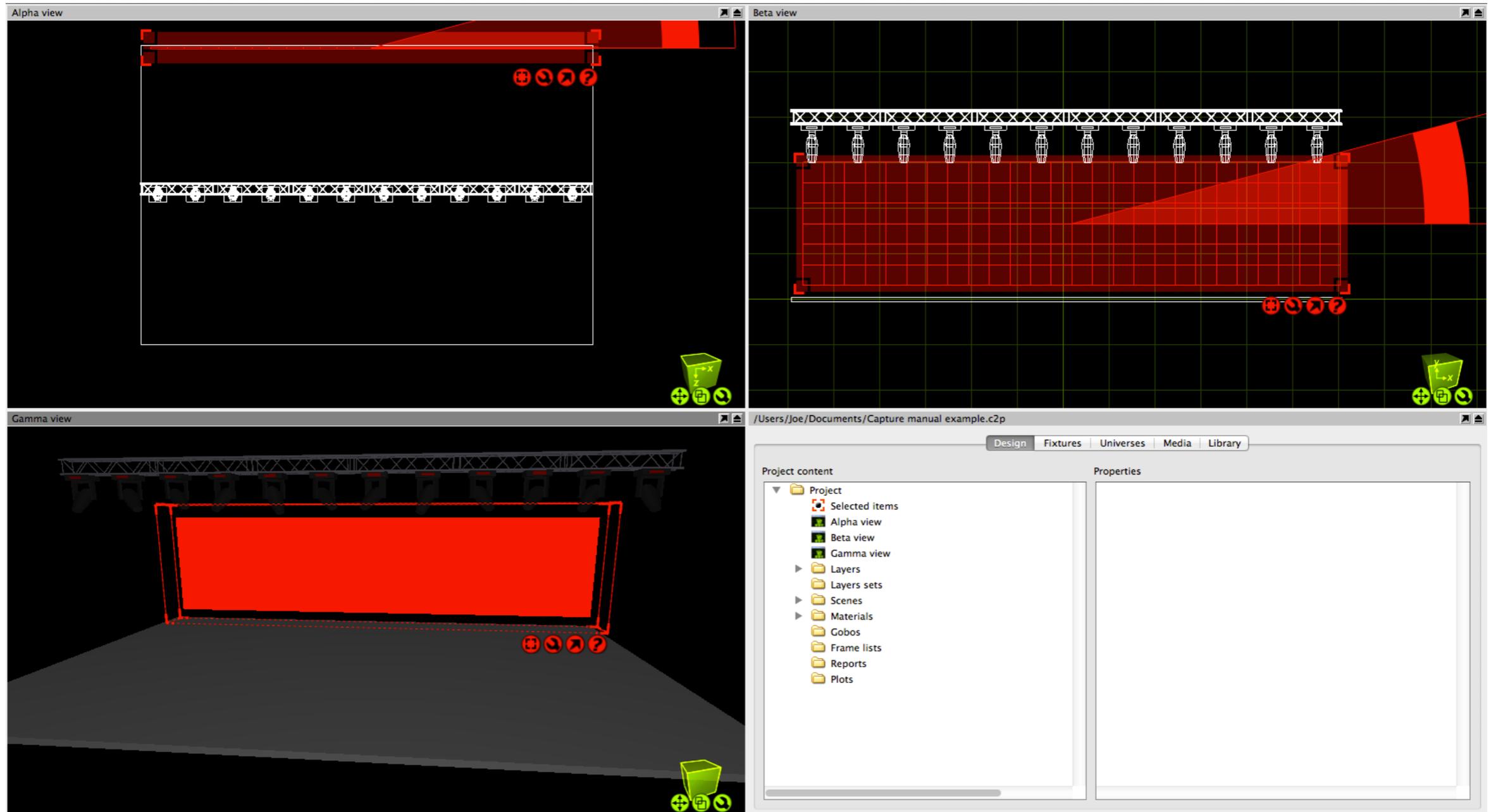
Video Players can either be an internal video player were by you choose a video file on the computer and play that. Or you may also choose a video source from an external Media Server via CITP for the video source of a material.

In this instance we will just use a file on the computer and look at CITP sources in a later chapter.

Add an LED Panel to the project by dragging it from the library to one of the 2D views. Clone the panel so you have a suitable size of LED Screen.



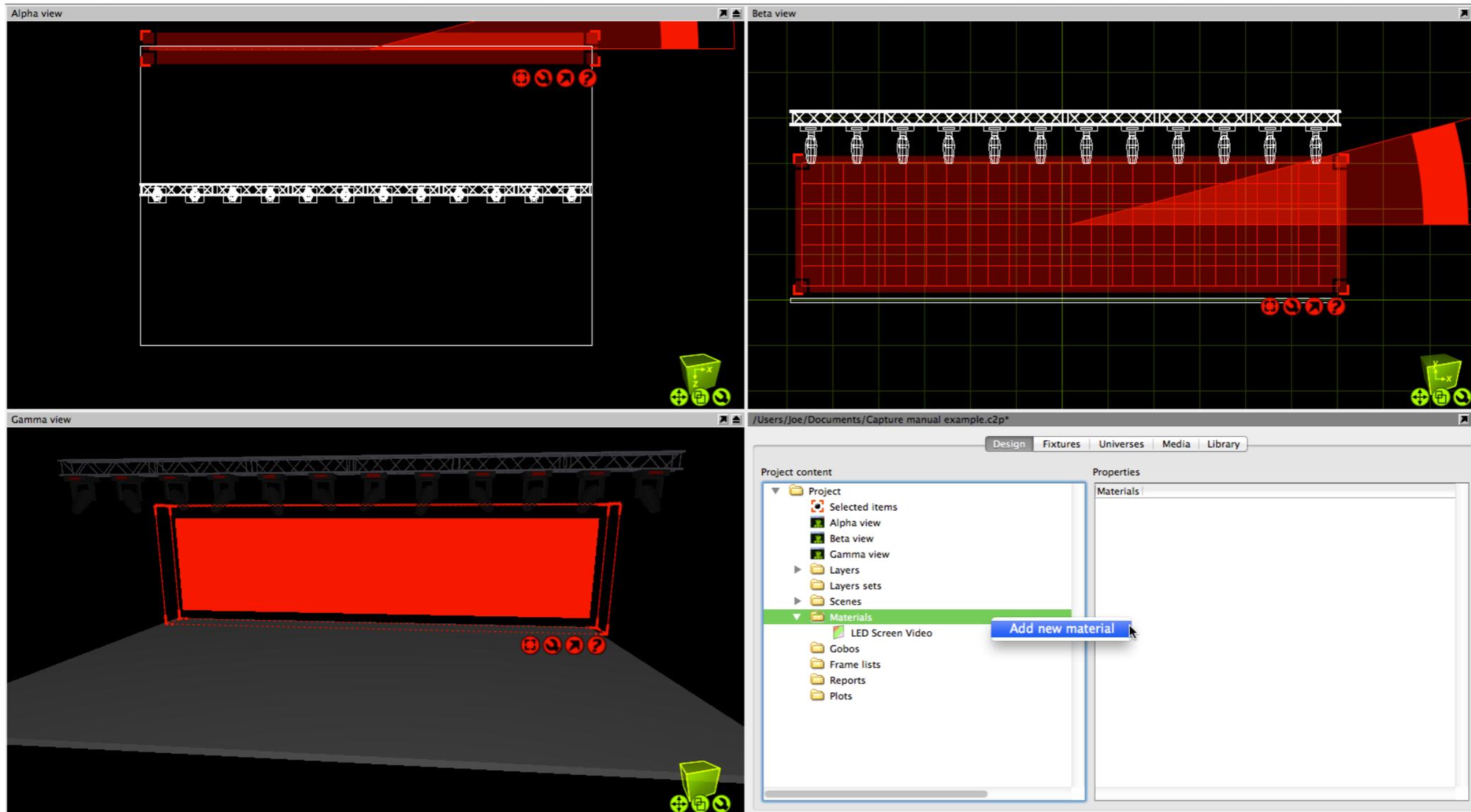
Add an LED Panel to the project by dragging it from the library to one of the 2D views. Clone the panel so you have a suitable size of LED Screen. Your project should look similar to this.



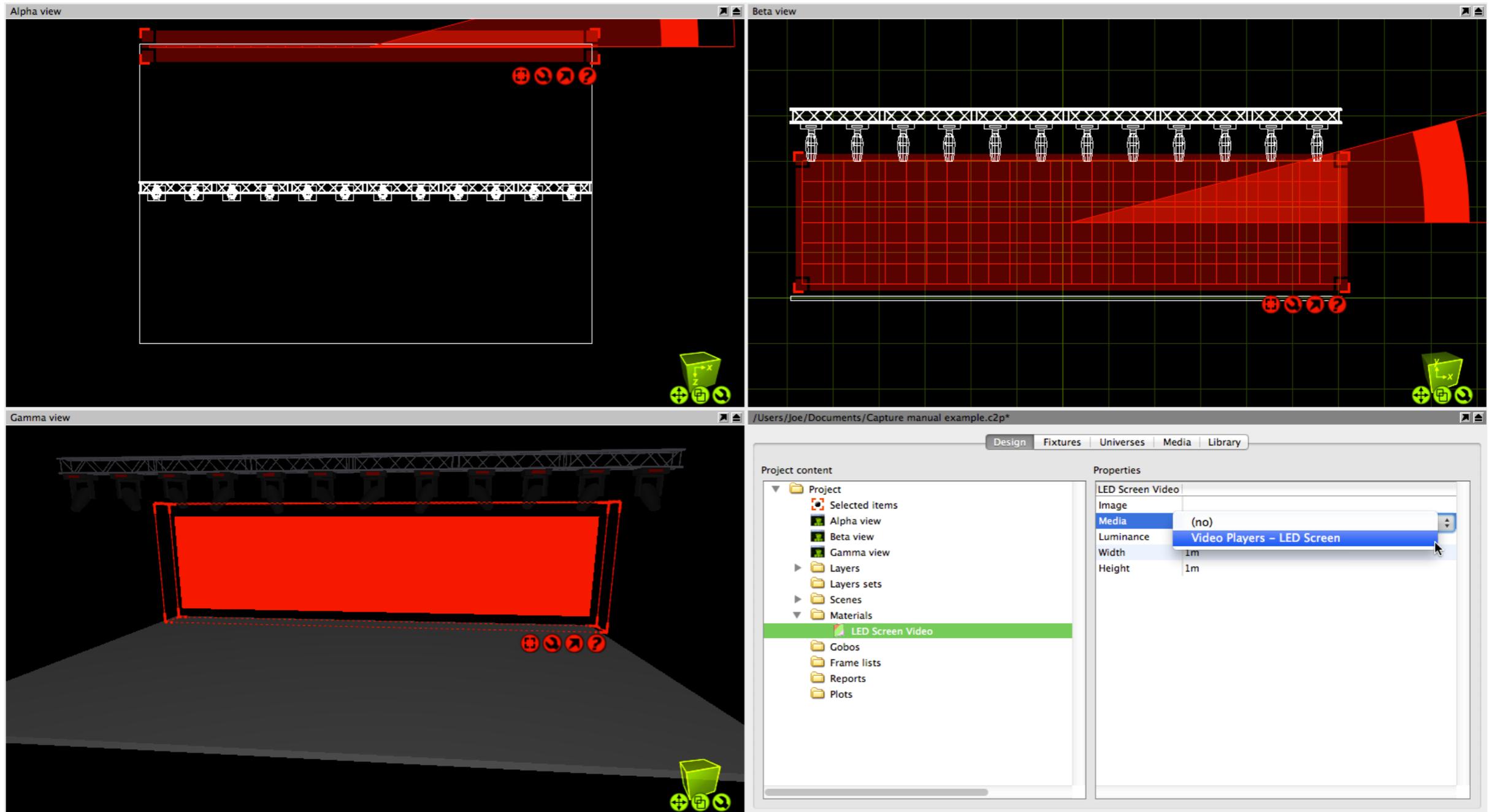
Now, to play video on the LED Screen, you must make a video player within capture. Simply, go to the Media tab in the project window and press the "Add" button in the top right corner and name the Video Player - "LED Screen Video". Press the "Add Video" button and choose a video file from the local hard drive. You may select multiple videos if you wish.

Once you have selected the video you wish to play on the screen, press the play button next to it so the video is playing.

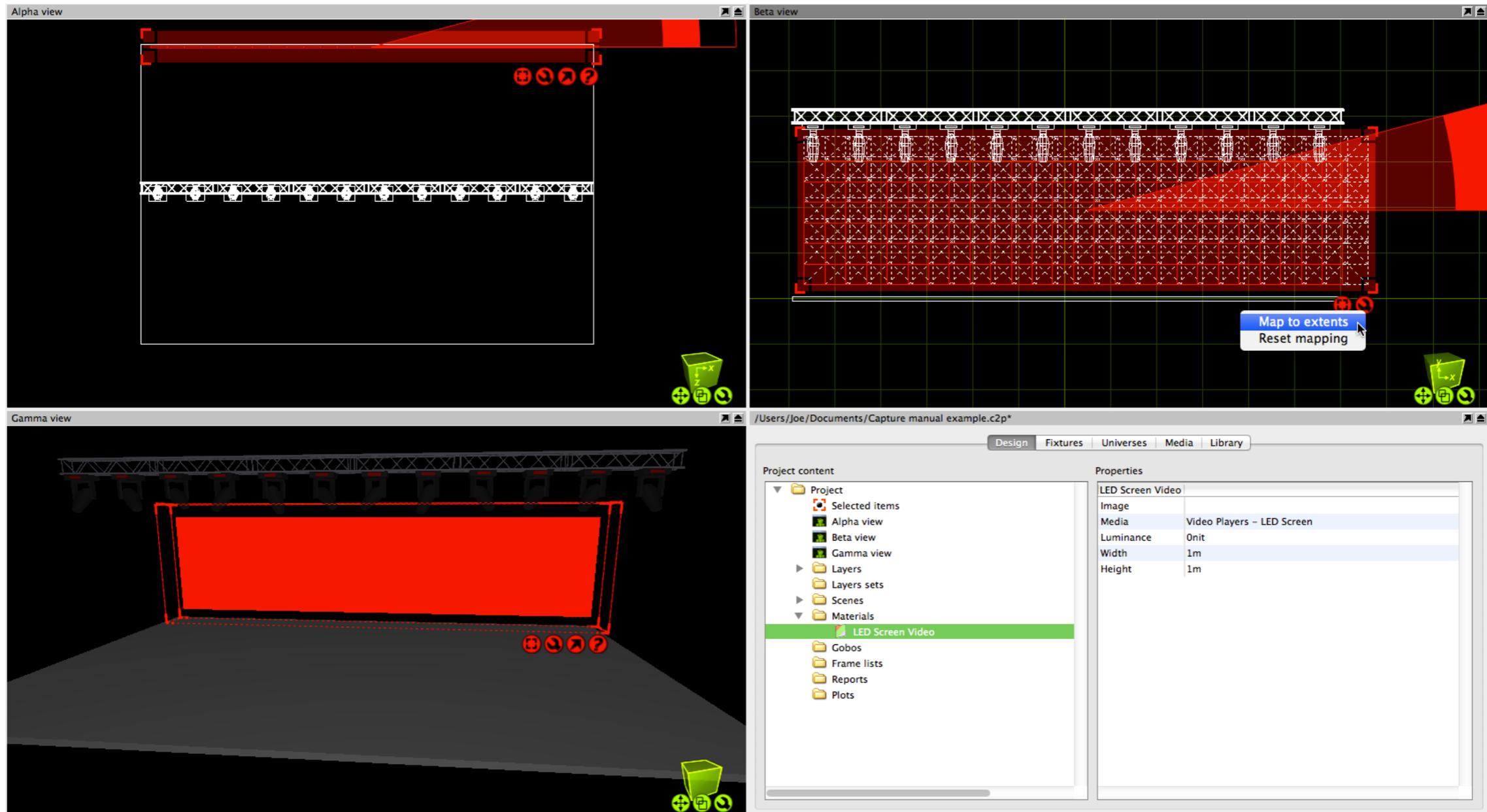
In the project window, right click on the Materials node and press "Add new Material".



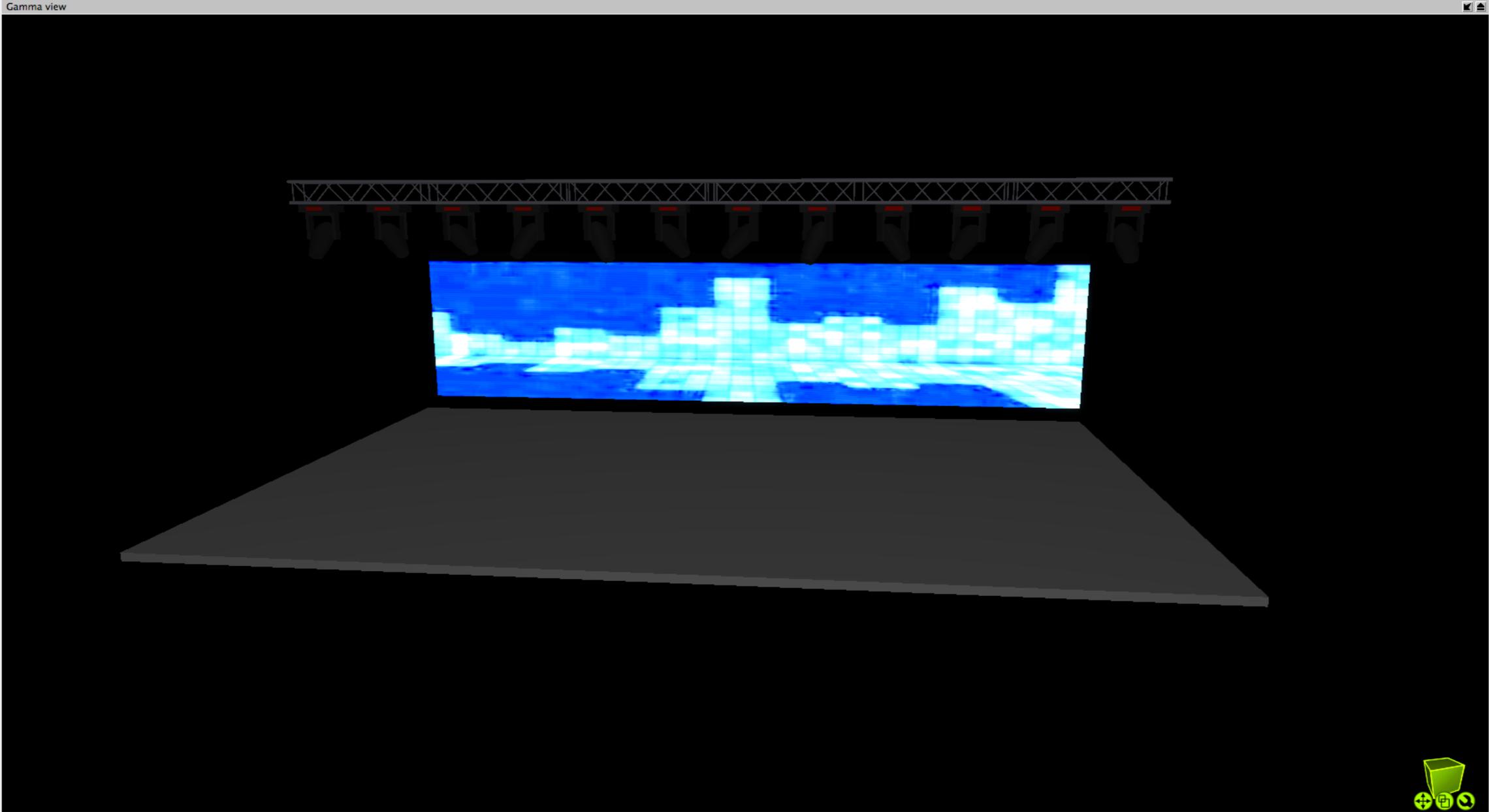
Once you have created the material, you need to link the material to the video player. Do this by selecting the video player from the "Media" option within the material properties.



Once the Material has been assigned to the video player, drag the material from the project window to the LED Screen in one of the simulator views. Press the red spanner button and choose the "Map Material" option. Then select the "Map to extents" option, this will set the material to fill the whole screen.



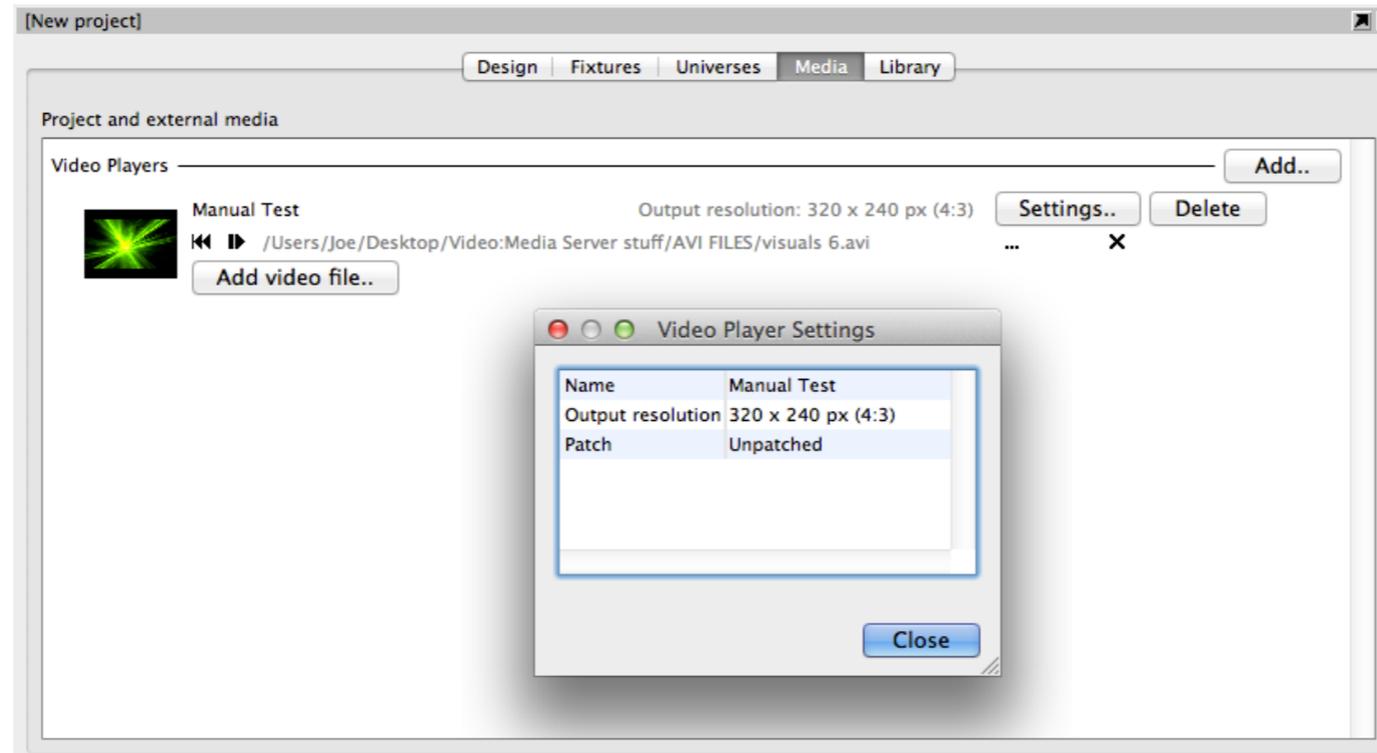
The result will be the LED Screen receiving evenly mapped video across the array from the Video Player.



## Patching Video Players to DMX

As discussed in the previous section, you can use an internal Video Player to play videos or images on LED Screens in Capture. The Video Player can be controlled by DMX if desired.

The Patch property of the Video Player can be accessed by clicking "Settings.." for the desired Video Player in the Media tab.



CHANNEL 1 CONTROL		CHANNEL 2 PLAYLIST INDEX	
0-7	Pause	0-7	Playlist entry 1
8-15	Play	... 8 DMX Values per entry	
16-23	Replay (plays from the start)	248-255	Playlist Entry 32
24-31	Stop		



# Layers & Layer Sets

## Using Layers

Both layers and layer sets are managed in the Design tab of the Project window. They are created by right clicking on their corresponding branch on the left hand side. Layers are useful to select & group many objects of a similar nature. Layer sets are essentially just groups of layers. For example having a layer for "All Moving Lights", "All Generics" and "All LED" could be useful. Then they could belong to the layer set - "All Fixtures". Layers and Layer Sets are very useful for managing project files with large amounts of objects & fixtures in.

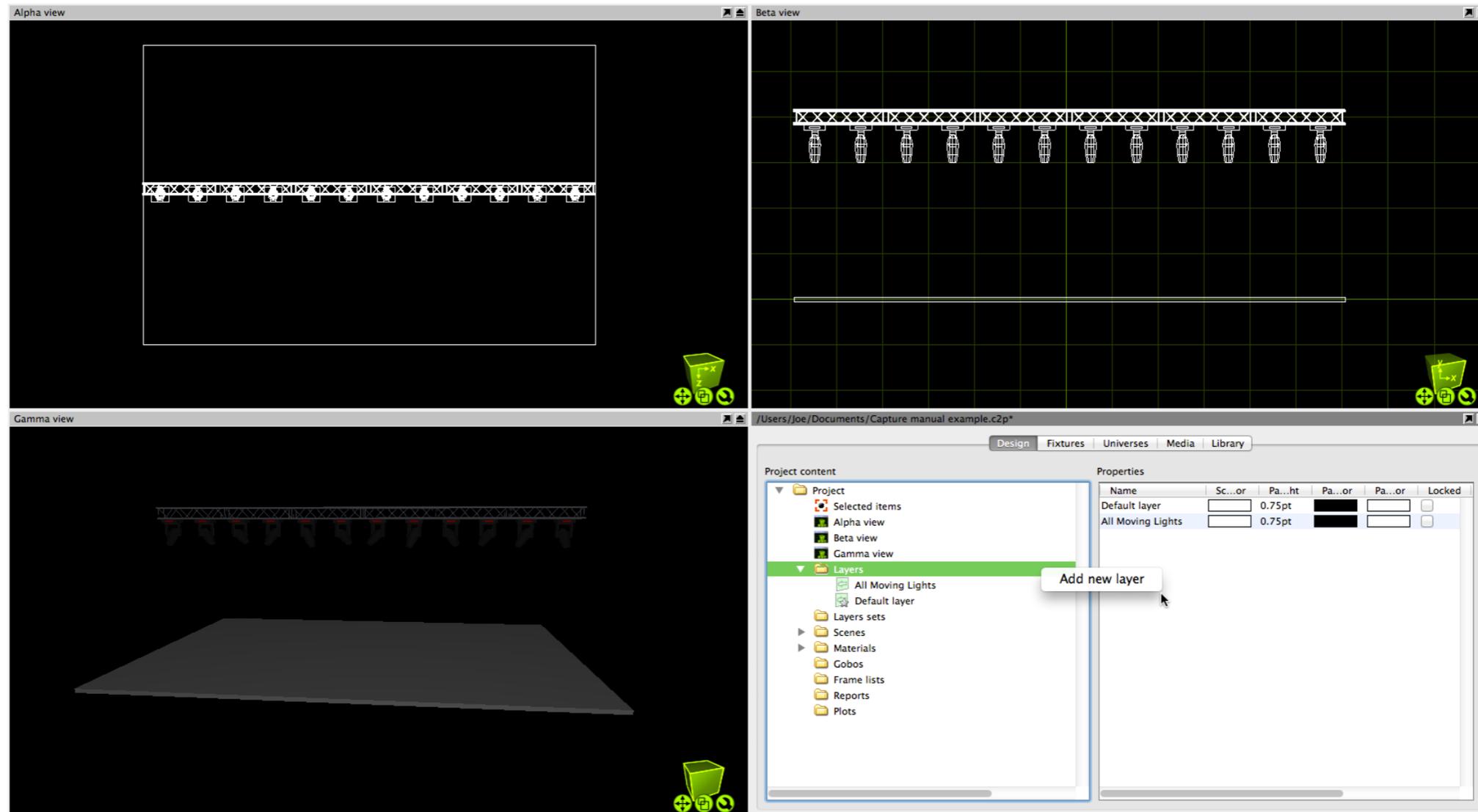
Objects in a layer with the Locked property set cannot be modified. When the Include in reports property is unchecked, objects in that layer will not appear on reports. Live information and Fixture simulation can also be turned on and off on a per-layer basis in the same fashion. Layer sets are used to define sets of layers to be visible in simulator views and plots. They serve as layer filters and it is useful to note that you may work with different layer set in different views if you wish.

When a simulator view is patched to a universe it is possible to choose the simulator view's layer set via DMX. However, this requires setting up the DMX control slot property of each layer that you wish to be able to choose. There are 64 slots available and they are identified with the numbers 1 through 64. A value of 0 means that it is not possible to select via DMX.

Please note, that hiding layers does not affect light and shows because the objects are still considered physically present. So in order to achieve something like this, you must use Scenes.



To make a new layer, simply right click on the layer node in the project window and press "Add new layer". Name the layer at this point too.



Adding fixtures or objects to the layer can be done in one of two ways, you may either drag the layer from the project window to the selected objects or you may select the objects and double click the "Layer" property in the properties and select the layer there.

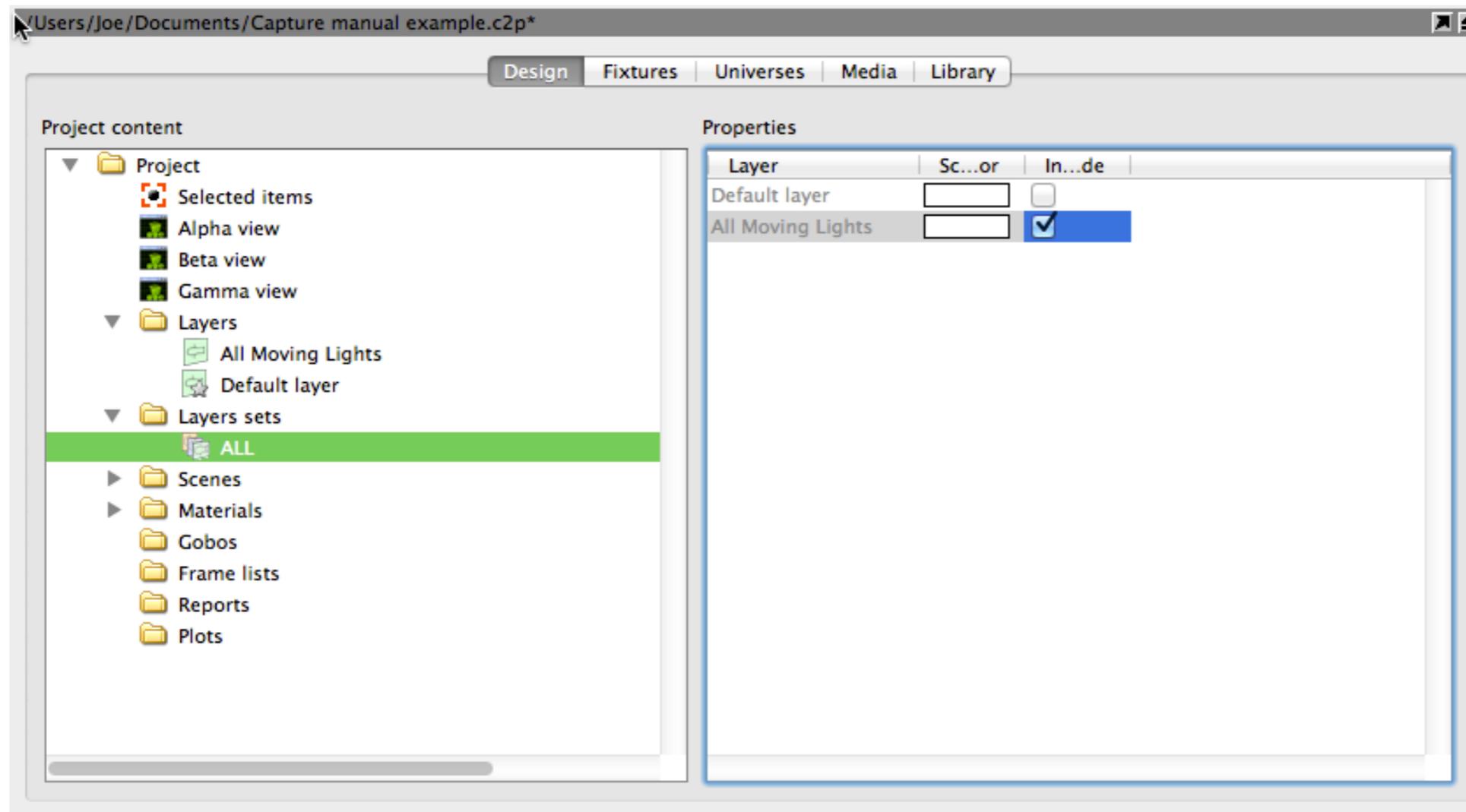
Adding fixtures to an existing layer is done in the same manner.



## Using Layer Sets

As already discussed, Layer Sets are essentially just groups of Layers. As per our previous example, having a layer for “All Moving Lights”, “All Generics” and “All LED” could be useful. They could then belong to the layer set - “All Fixtures”.

Adding Layer Sets is done in the same way as layers. Right click on the layer set node in the project window and select “Add new Layer Set”. Name the layer set accordingly. Once the layer set is made, select it, by clicking on it. In the right hand section of the window, a list will appear showing all the current layers. You can use the check boxes to control which layers belong to the layer set you created.



# Scenes

PROD. NO.

SCENE

TAKE

ROLL

DATE

SOUND

PROD. CO.

DIRECTOR

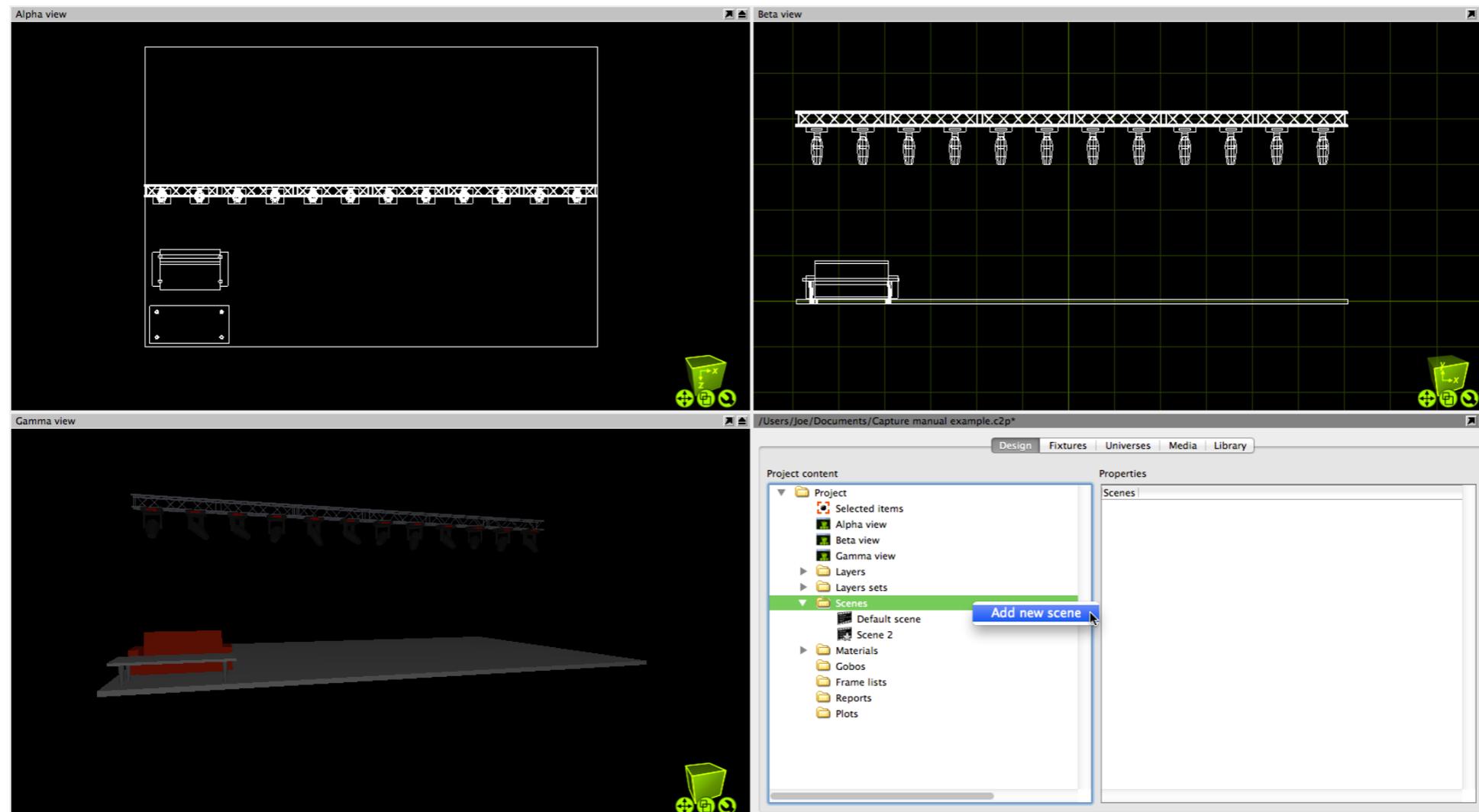
CAMERAMAN

## Using Scenes

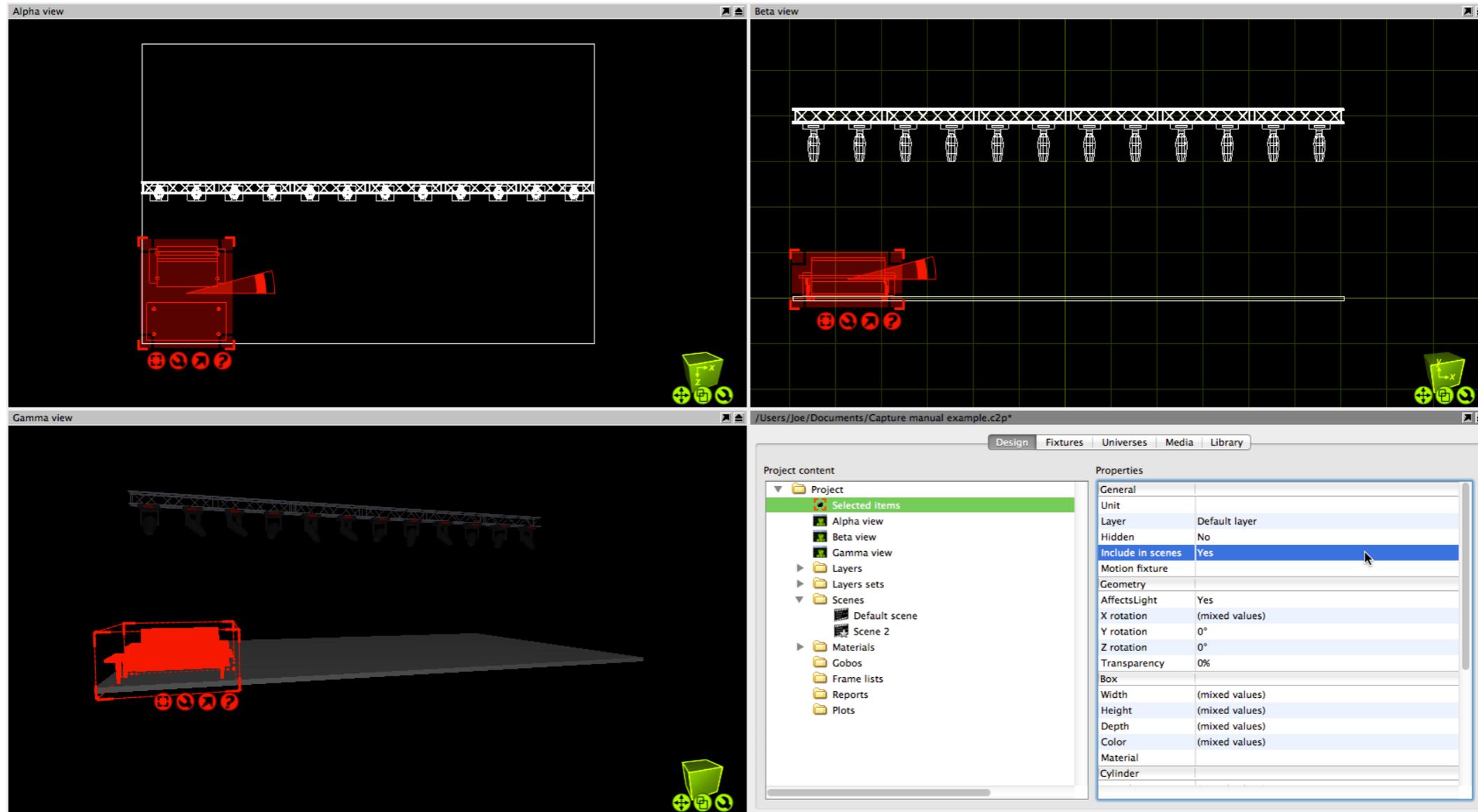
Working with scenes allows you to modify the position and visibility of objects in different parts of a performance. If you wish to do this, it is important to set the **Include in scenes** property of the objects that wish to have dynamic positioning/visibility (this is important because many items such as the rig, truss and house will usually not be part of what can be moved during a show and keeping them out of scenes prevents you from making serious mistakes).

Scenes are not stored or recalled – you are always working in one scene at a time and you can safely switch back and forth between scenes without risking loss of any position information. Scenes are most useful in a Theatre environment where you have one set of scenery for Act one and another set of scenery for Act two.

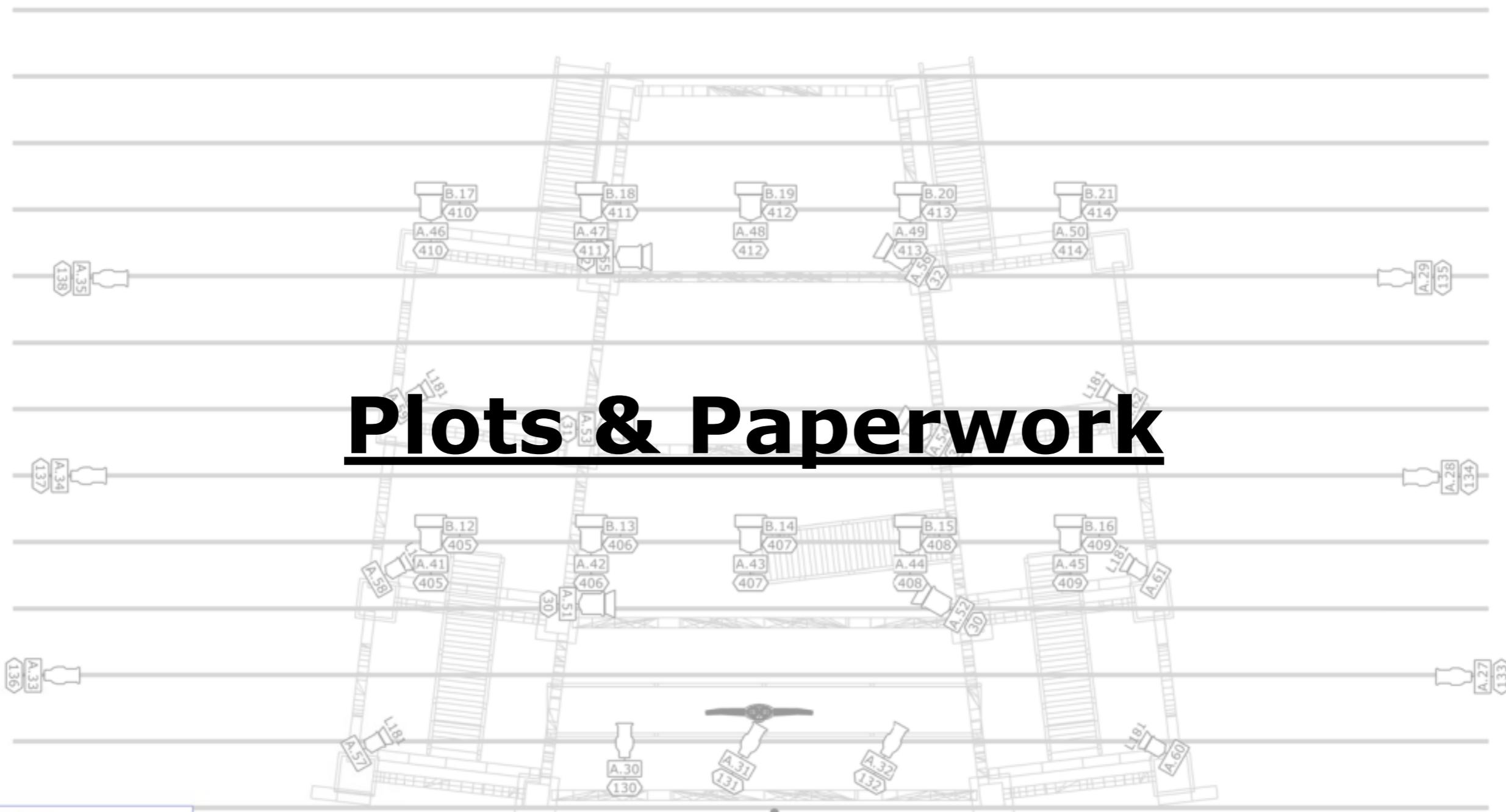
By default there is already one scene in any project file - the "Default Scene". To make more Scenes, right click on the scene node in the project window. Select "Add Scene" and name the scene accordingly.



Once you have made a second scene, we can proceed to make scenery changed. Add some scenery and position it as per your liking. Select all of the scenery, in the properties, locate the "Include in scenes" property and set it to "Yes". Now double click your second scene (or right click on it and select "Go to scene"). Now we are in the second scene, move the scenery to a new location. Now switching between the two scenes moves the scenery between the two locations.



# Plots & Paperwork



- Symbol key**
- PAR 64
  - Whisper AL, 12" PRO
  - Source Four Zoom 15° - 30°
  - ADB F 101
  - VL2500 Spot
  - Acclaim Fresnel
  - DN 105

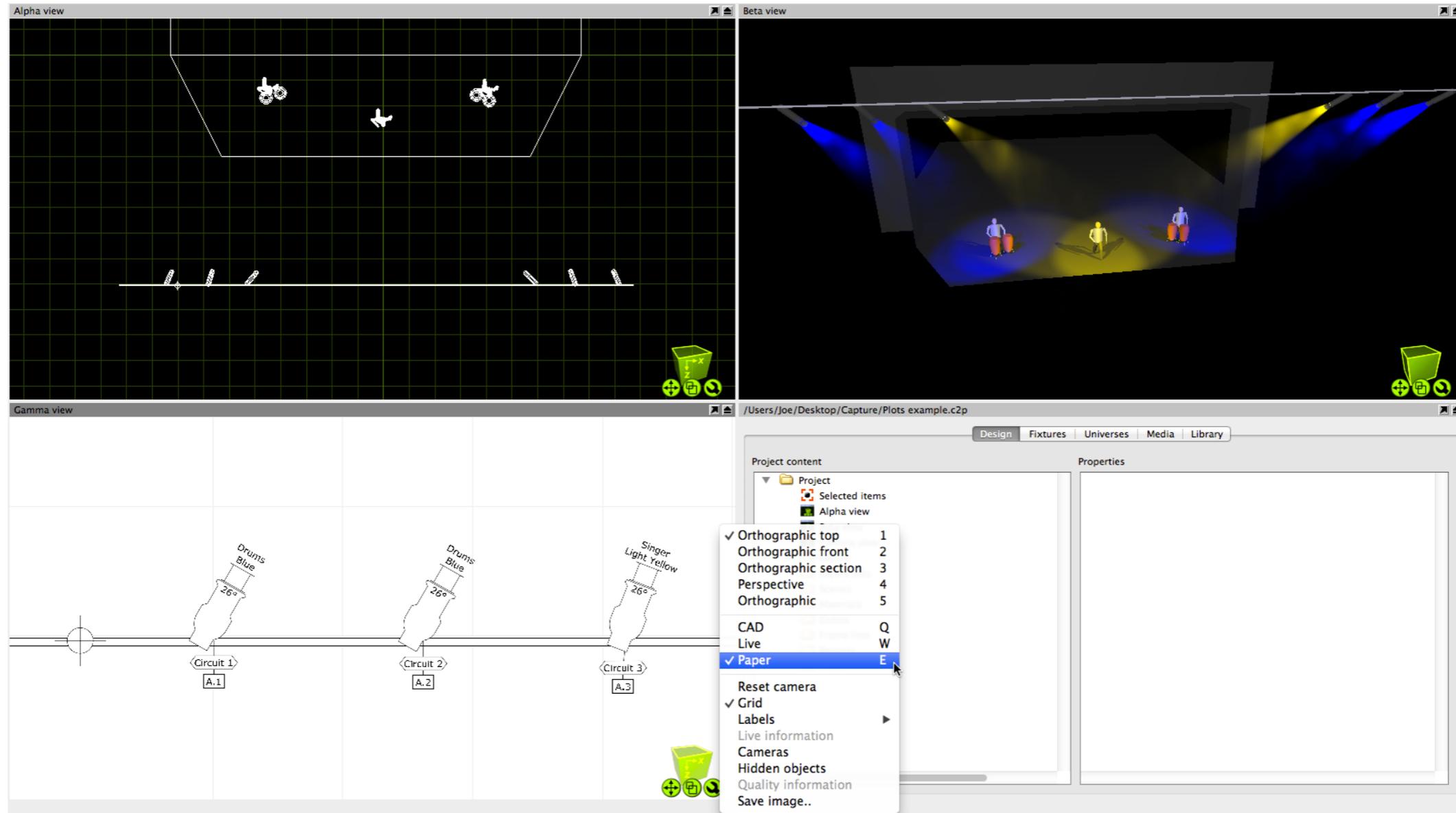
- Layer key**
- Auditorium bars
  - Front stage bars
  - Lighting
  - Set

Project <b>Opera</b>		Main Stage Rig	
Project location		Project date	
Client		Drawing number	
Drawing author Lars Wernlund, Capture Sweden		Drawing version	
File name PLASA 09 Opera.c2p		Document name Main Stage	



# Plots

The plots functionality in Capture allows users to create paperwork of lighting plots featuring key information about the lighting rig. A plot can be viewed and edited in any simulator view that is set to "orthographic top" & "paper" mode. A view set to act as a plot becomes independent of the other views, this is to say that positioning & rotations of fixtures made in the plot view will not affect the physical fixtures in the project.

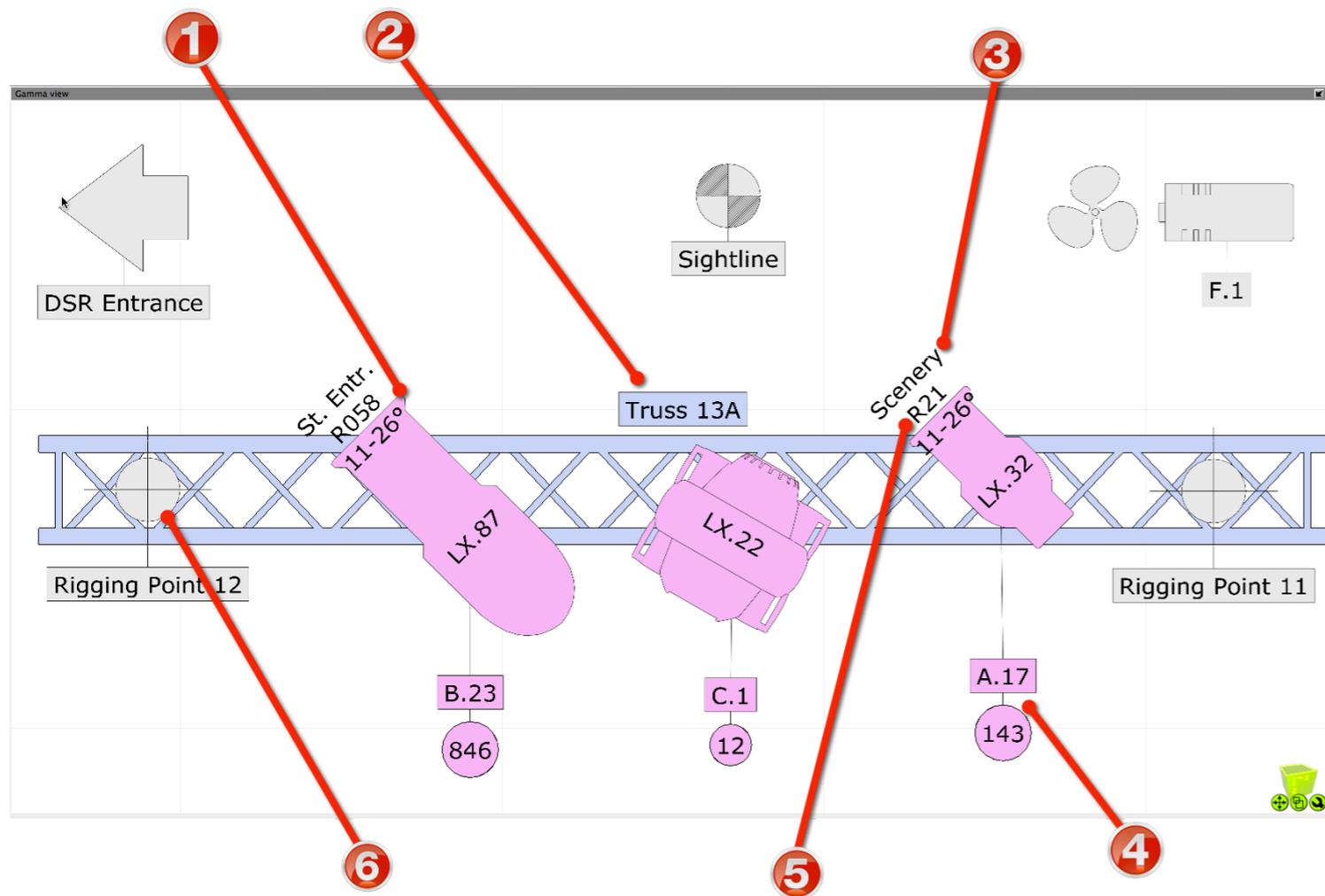


## Plot Options

Other than Fixture symbols, there are many other symbols that can appear on plots. The interactive image below shows examples of the available plot symbols.

Symbols such as Sightlines, Fans, Fog Machines, Rigging Points etc may all be dragged into the project from the library just like other items.

If you are unhappy with the default symbol for a fixture, you may drag a different symbol from the library to the selected fixture.



1	Optical Information
2	Label
3	Focus Information
4	Patch & Circuit Information
5	Colour Filter Information
6	Rigging Point

## Fixture Properties with Plots

When fixtures are selected, there are some plot specific properties that are useful to know about.

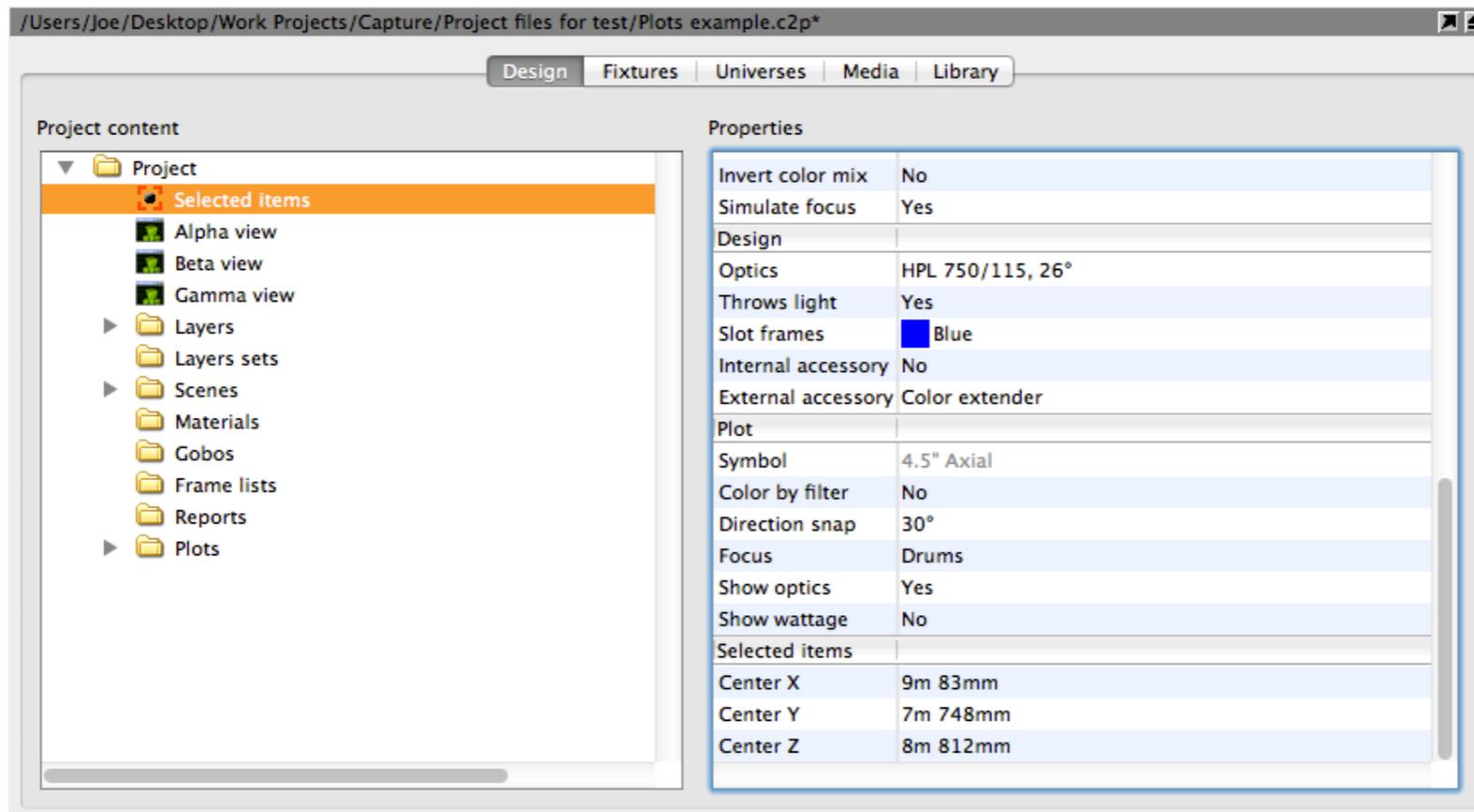
“**Color by filer**” will set the fixture color to match the gel filter it has.

“**Direction snap**” is set to 30 degrees by default, this property controls the direction the fixture is facing on the plot.

“**Focus**” is the property that allows text to be placed in front of the fixture to indicate where that fixture is focused. Ie, drums.

“**Show Optics**” is the property that controls whether or not the plot displays the optical information of the fixture.

“**Show Wattage**” is the property that controls whether or not the plot displays the wattage information of the fixture.



The screenshot shows the Capture software interface with the Properties panel open. The Properties panel is divided into several sections: Design, Optics, Plot, and Selected items. The Design section includes properties like Invert color mix, Simulate focus, Optics, Throws light, Slot frames, Internal accessory, and External accessory. The Plot section includes Symbol, Color by filter, Direction snap, Focus, Show optics, and Show wattage. The Selected items section includes Center X, Center Y, and Center Z.

Design	
Invert color mix	No
Simulate focus	Yes
Optics	HPL 750/115, 26°
Throws light	Yes
Slot frames	Blue
Internal accessory	No
External accessory	Color extender
Plot	
Symbol	4.5" Axial
Color by filter	No
Direction snap	30°
Focus	Drums
Show optics	Yes
Show wattage	No
Selected items	
Center X	9m 83mm
Center Y	7m 748mm
Center Z	8m 812mm

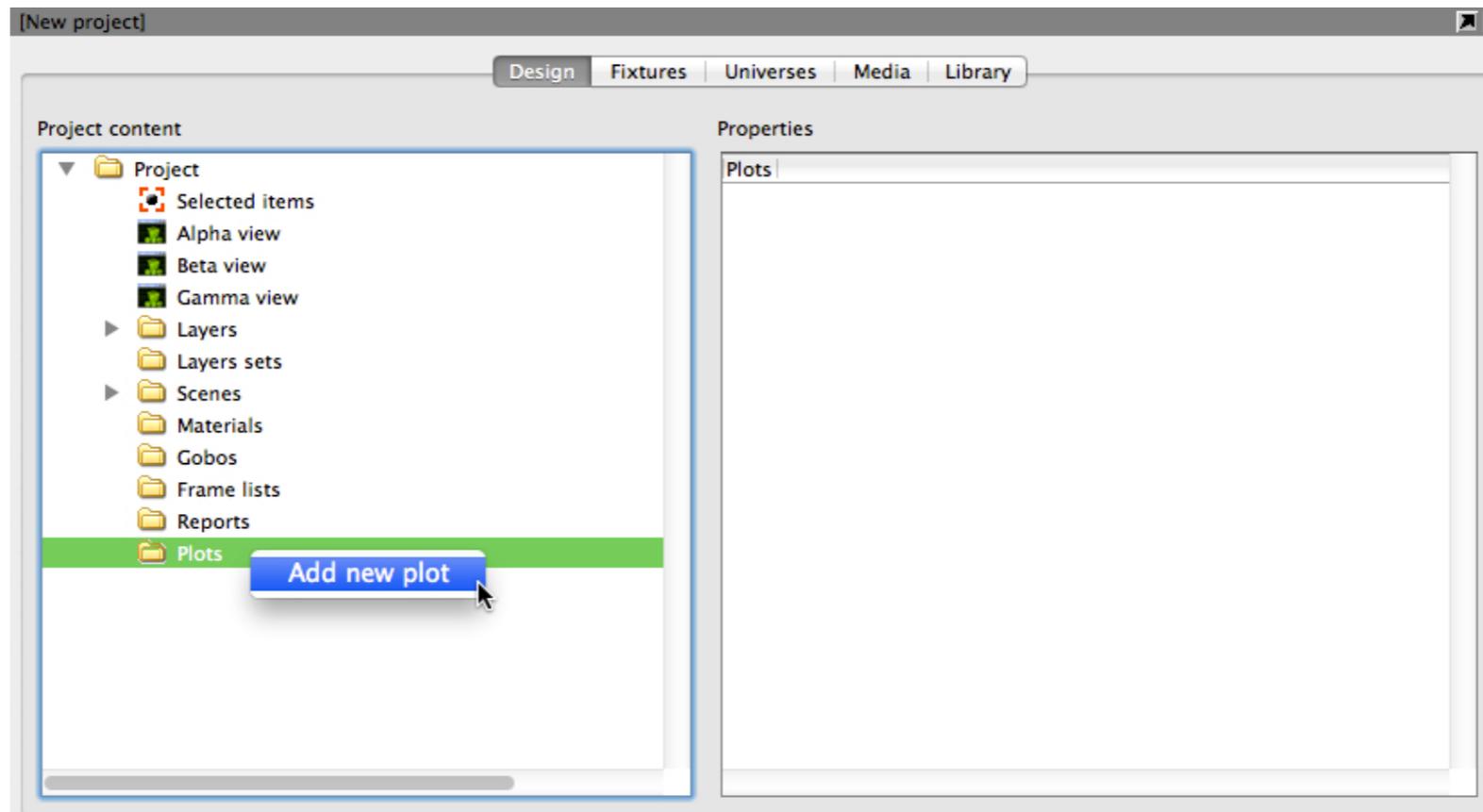


## Exporting Plots

Once a plot has been made in a paper simulator view, it can then be exported for print.

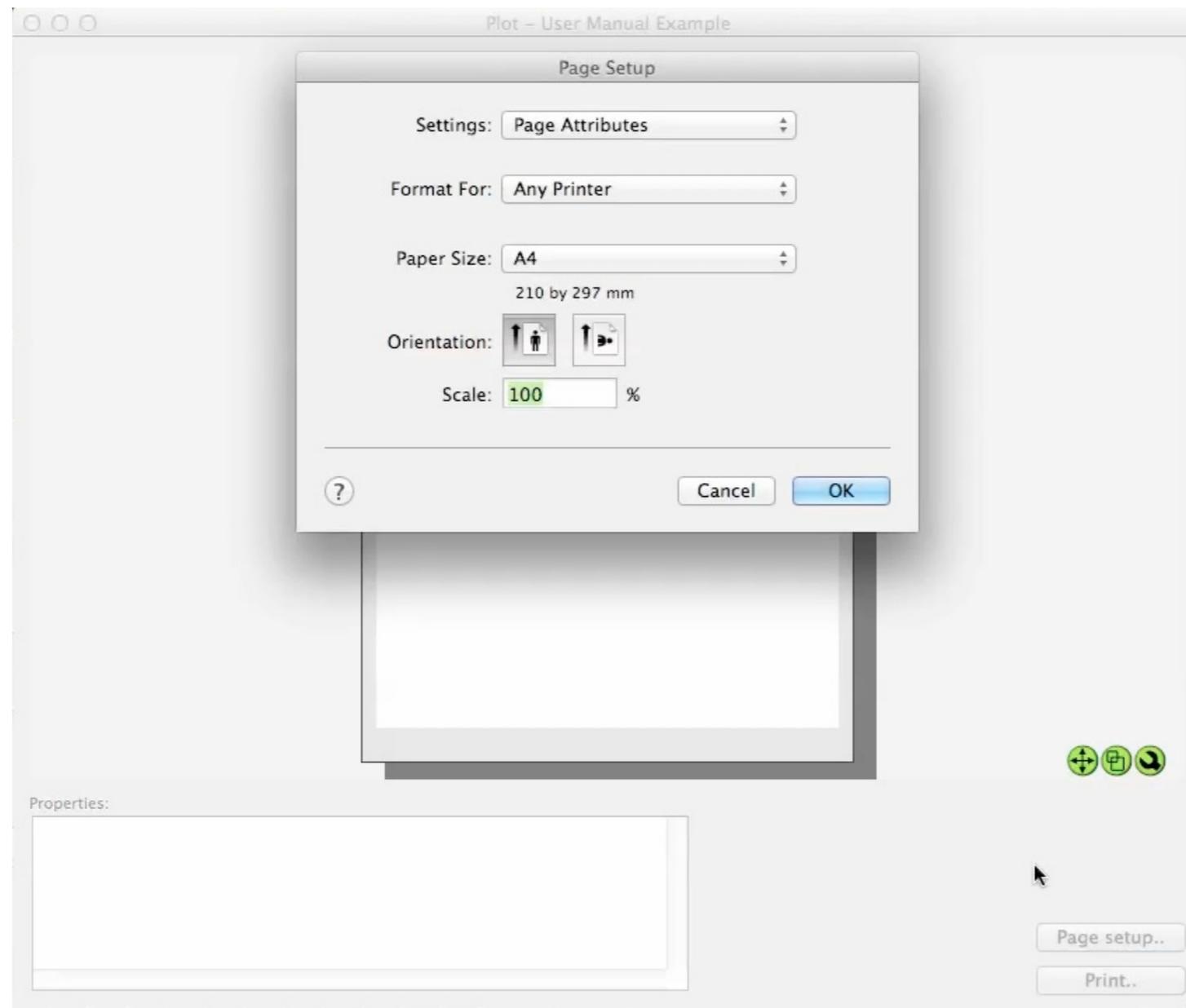
To do this, create a new Plot by right clicking on "Plots" in the Project Window and clicking "New".

Multiple Plots can be added in this manner. Adding multiple plots to the same project file is very useful for creating tidy plots for only certain parts of a rig. Each Plot can be setup to show only certain Layer sets and Layers based on the view you insert into it.



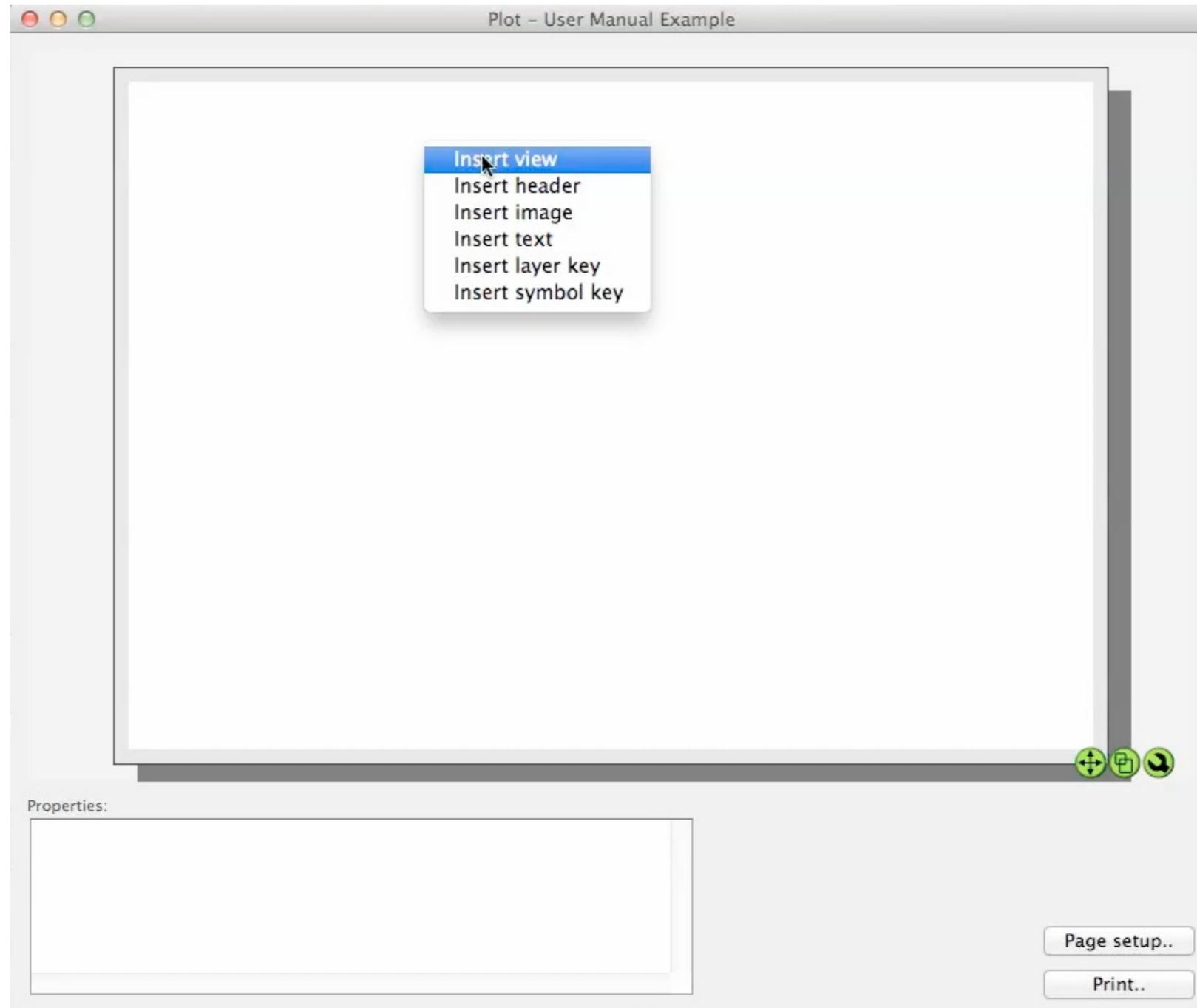
Once you have added a plot in the Project Window. Double click on it to open it.

The paper settings can be changed in "Page Setup".



Right clicking on the plot will allow you to add a view to the plot as shown in the image below.

You may also add Headers, Images, Text, Layer Keys and Symbol Keys in the same manner as adding a view.



Scale and move the plot to suit the paper.

Plot - User Manual Example

Focus locked

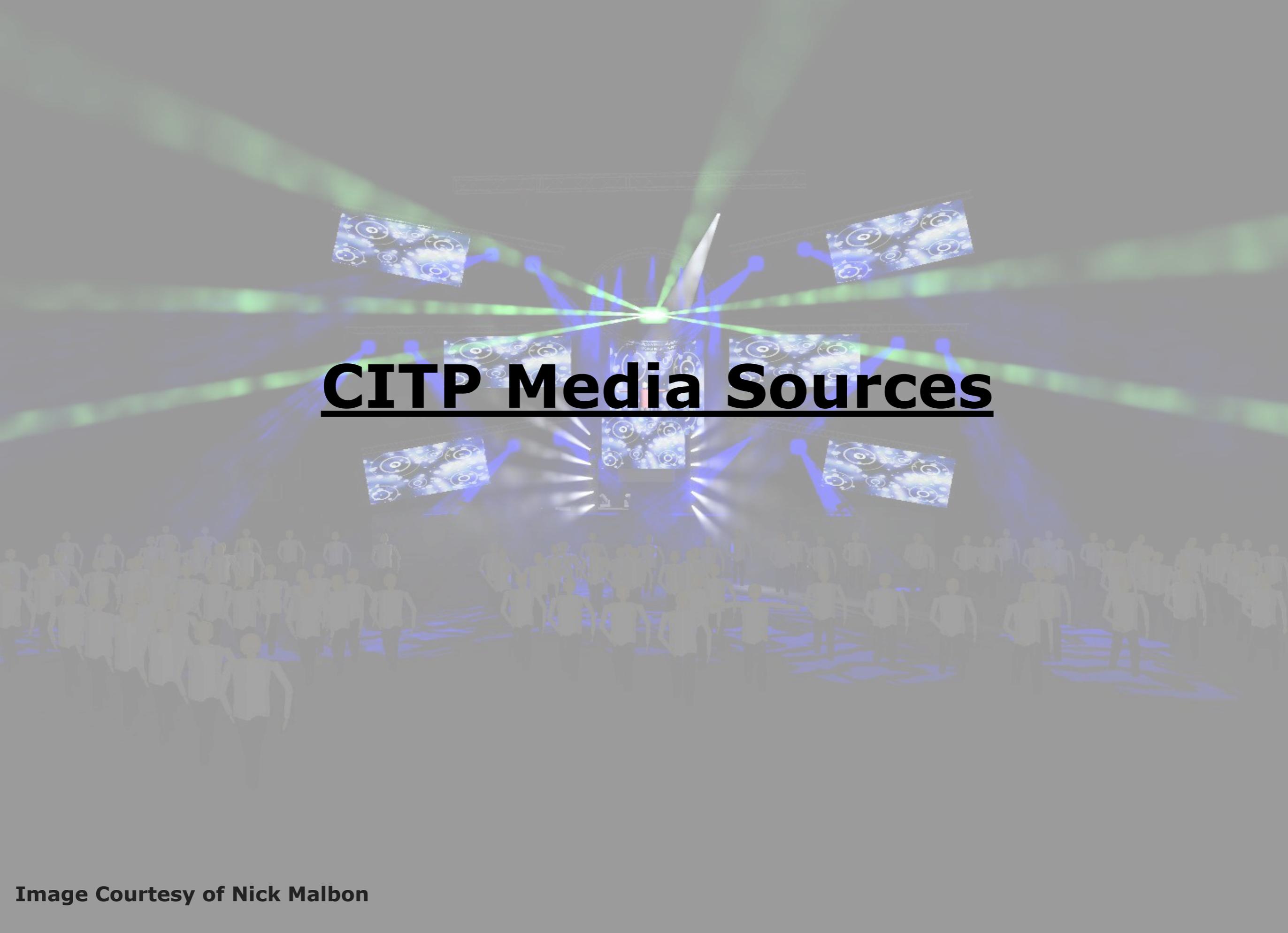
Properties:

General	
Foreground color	
Border	Yes
Title	
Title size	11pt
Appearance	

Page setup..

Print..





# CITP Media Sources

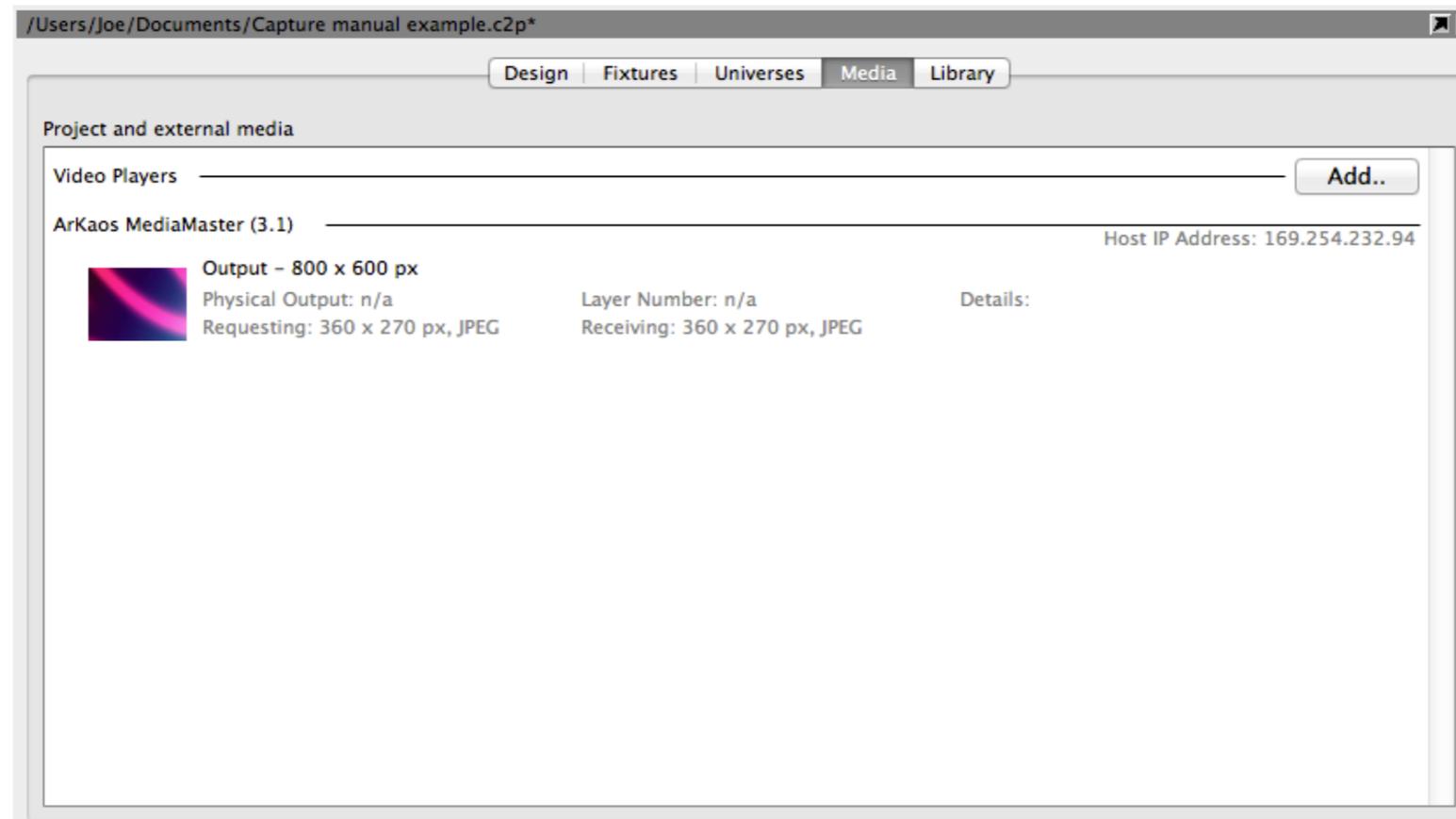
## Using CITP Media Sources

Capture supports connecting to Media Servers using the CITP communication protocol. This makes it possible to receive streaming video from a Media Server and apply it to objects like a material. You can view all connected Media Servers in the **Video tab** in the **Project window**.

To apply a streaming video to an object, you must first create a material, select the desired video source, set up the dimensions of the material and then apply the material to the objects. Alternatively you may omit setting up the material dimensions and simply map the material using the material mapping functionality discussed earlier.

Little to zero configuration should be required with CITP. Ensure that the Capture machine and the Media Server are operating in the same range of IP addresses and subnet. Usually it is good practice to start the Media Server first, then start the Capture software once the server is outputting video.

If the Capture machine has multiple network adapters, it may be necessary to manually select the adapter you will be using for CITP information. This can be done in the **Connectivity Tab** of the **Options menu**.



## Controller & Media Server Connectivity

	<b>BASIC/EXTENDED EDITION ON WINDOWS</b>	<b>BASIC/EXTENDED EDITION ON MAC OSX</b>	<b>SMARTSOFT EDITION ON ANY PLATFORM</b>
Art-Net	Yes	Yes	
Avolites ACDI	Yes		
E1.31 - Streaming ACN	Yes	Yes	
Capture DMX Box	Yes		
CITP <a href="http://www.citp-protocol.org">www.citp-protocol.org</a>	Yes	Yes	Yes*
Compulite VC	Yes	Yes	
EnTec DMX USB Pro	Yes	Yes	
ETC Net 2	Yes	Yes	
Hog 2 PC	Yes		
Hog 3	Yes		
Green Hippo HMap 3	Yes	Yes	
Lan Box Controllers	Yes	Yes	
LSC Consoles	Yes	Yes	
MA Net 1 & 2**	Yes		
SandNet	Yes		
LaserAnimation & Pangolin feeds	Yes	Yes	

\* Will only connect with ETC SmartSoft.

\*\* Requires manual activation; right click in the External universes list of the Universes tab to open the MA-Net configuration dialog.



A 3D rendering of a stage lighting rig. The rig consists of a central truss structure with multiple arms extending outwards. Each arm holds several square light fixtures. The scene is filled with numerous beams of light, primarily in shades of purple and blue, creating a dramatic atmosphere. The background is dark, and the floor is a light gray. The overall composition is symmetrical and centered.

# DMX Motion Controllers

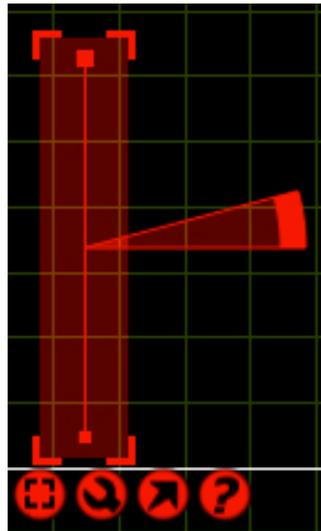
Image Courtesy of Erik Mahowald

## Using DMX Motion Controllers

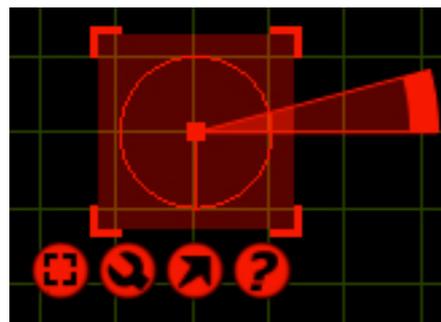
Capture has the functionality to allow incoming DMX channels to be mapped to control the height and rotation of objects. In these examples, we are going to look at moving truss around with DMX. The functionality is not limited to trusses only, it can be used with most objects and forms within Capture.

There are two types of DMX Motion Controllers in Capture. The DMX Mover and the DMX Rotator.

The DMX Motion Controllers are added to a project like any other object in Capture - by dragging them from the Library into one of the simulator views. Its best to look at the controllers like lighting fixtures, they are fixtures in the project. Its good practice to place the movers near to the object they are controlling for ease of identification and manipulation, but they may be hidden from view if required.



The DMX Mover, pictured to the left, has two blobs at each end of the range. The thicker blob indicates the default starting point of the object the Mover is attached to. The thinner blob indicates the lowest point to Mover operates to.



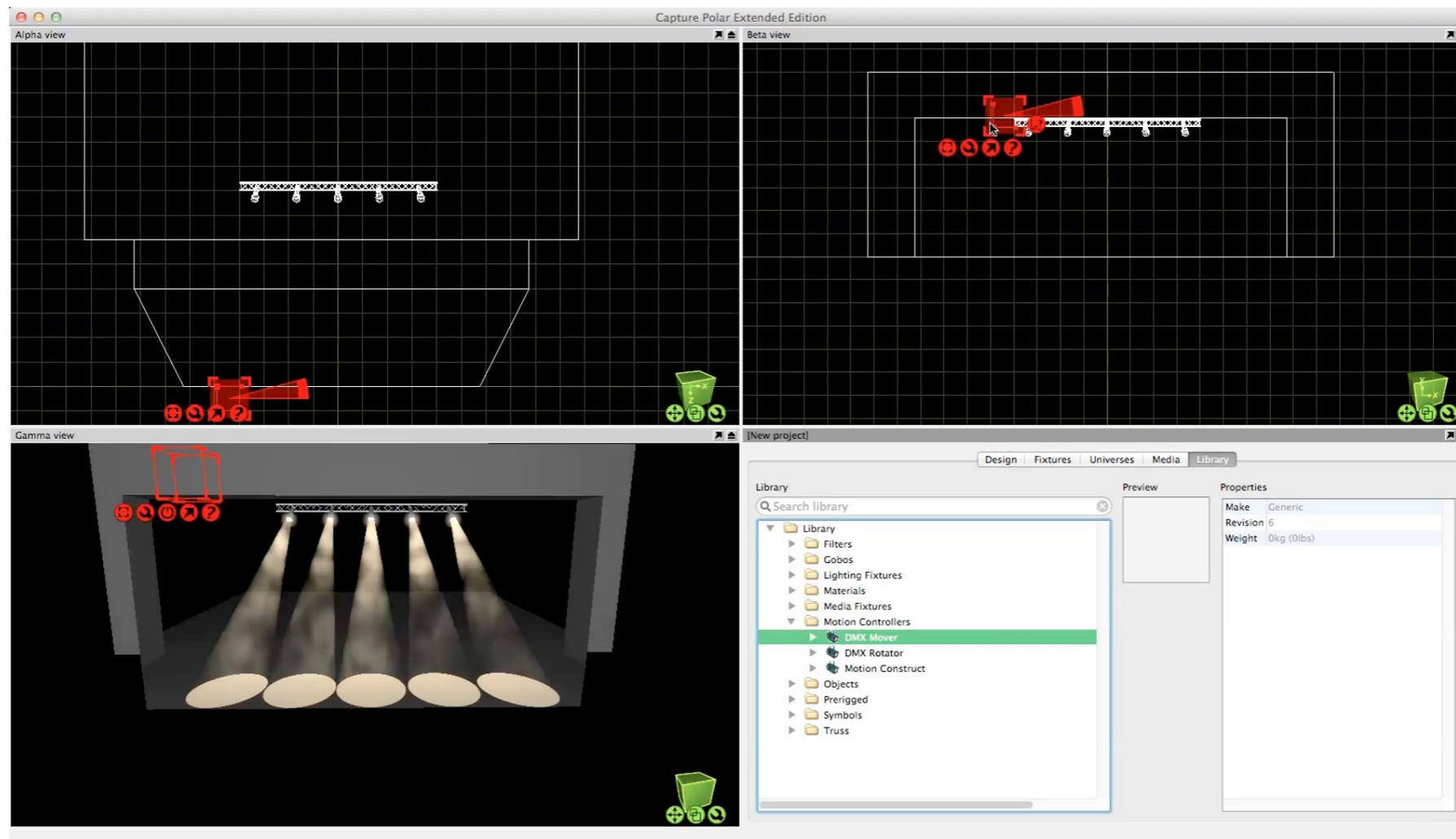
The DMX Rotator, pictured to the left, is shown here as it is seen in the "Orthographic Front" simulator view. The thick blob in the middle of the circle indicates the central rotation point that the object will rotate around. The line protruding from the centre of the circle from the blob is the default starting point. The circle itself indicates the range in which the Rotator can operate. In this case, it is a full circle as the Rotator has a range of 360 degrees.

## Adding a DMX Mover

As we discussed, the first type of DMX Motion Controller is the DMX Mover.

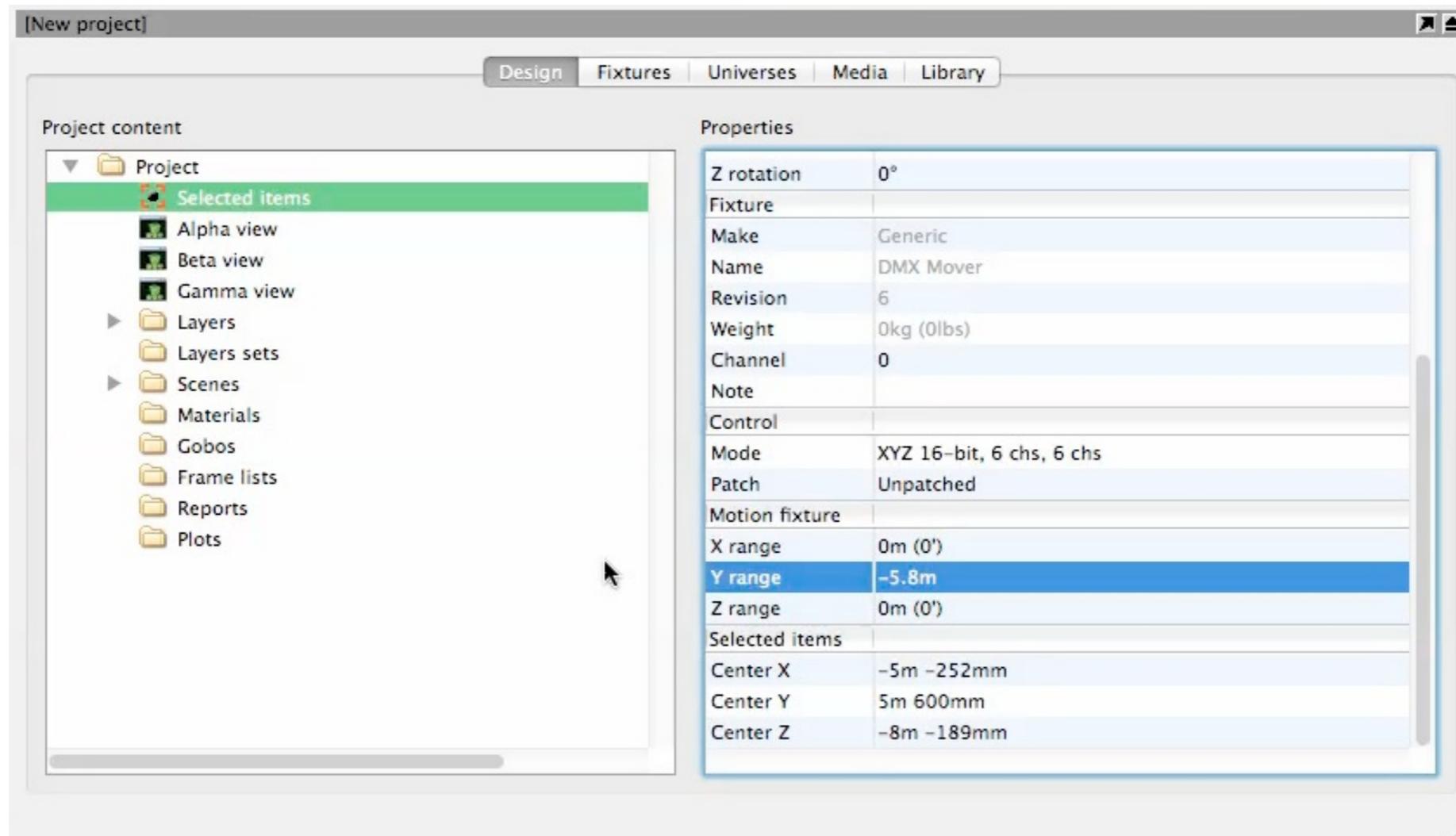
The DMX Mover can move an object across a predefined range on the X Y Z axis. The mover can also be configured to operate on only one axis, for example Y, so that the object it is attached too will only move up and down.

Drag the DMX Mover into the project from the library. It can be found under "Motion Controllers". Position it near to the truss it will be linked with, this will make it easier to manage projects with multiple movers.

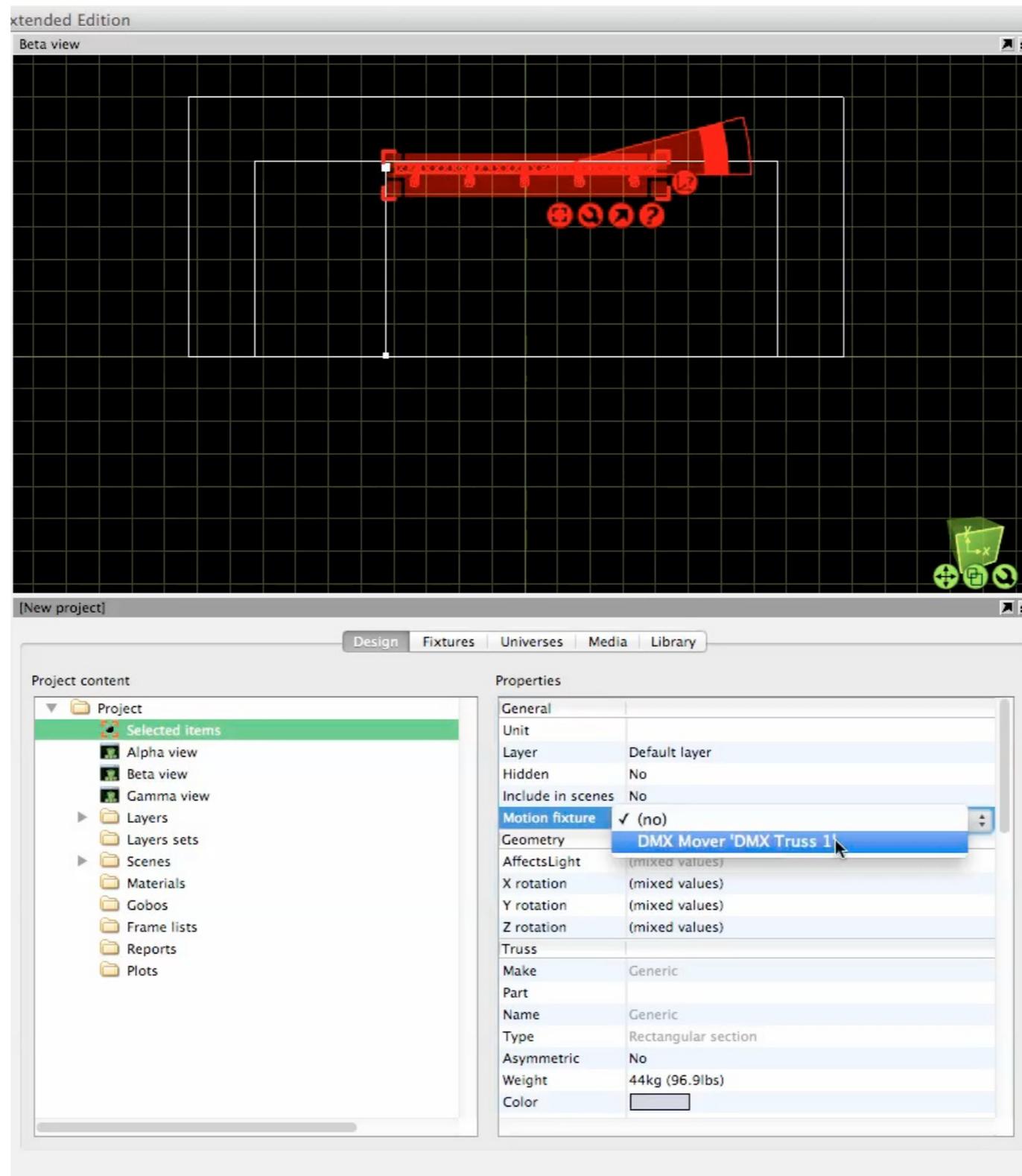


Select the mover and access its properties in the Project Window.

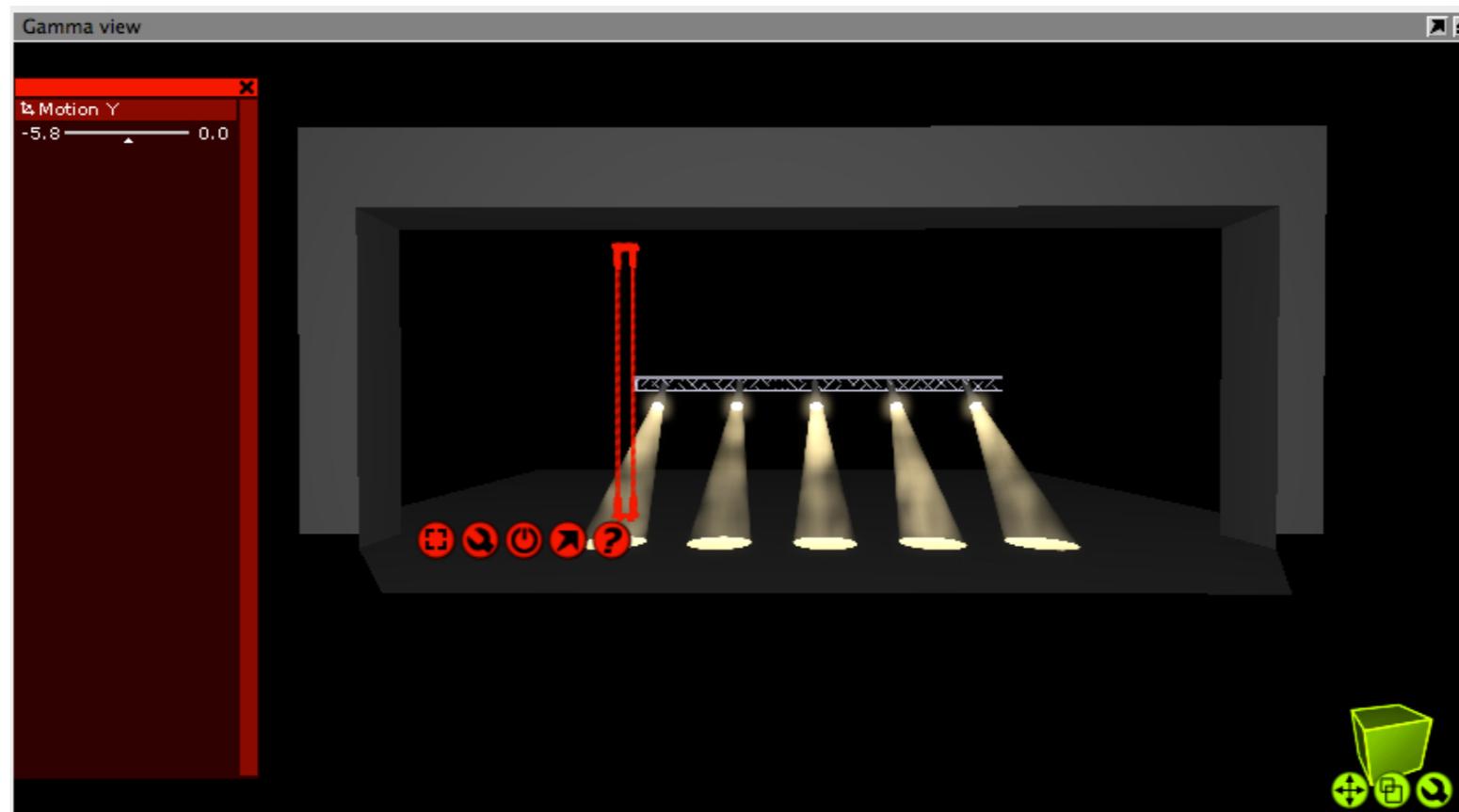
Give the mover a name, using the "Unit" field. Then configure its properties to match the ranges in which you want the mover to operate. In this case, the X and Z range will be 0 and the Y range will be -5.8m as we only want the mover to move the truss up and down. 5.8m is the distance between the truss and the floor.



Select the Truss and the Fixtures you wish to move and select the DMX Mover from the "Motion Fixture" property in the Project Window.



The DMX Mover can now be selected and manipulated in the Live view just like any other fixture.



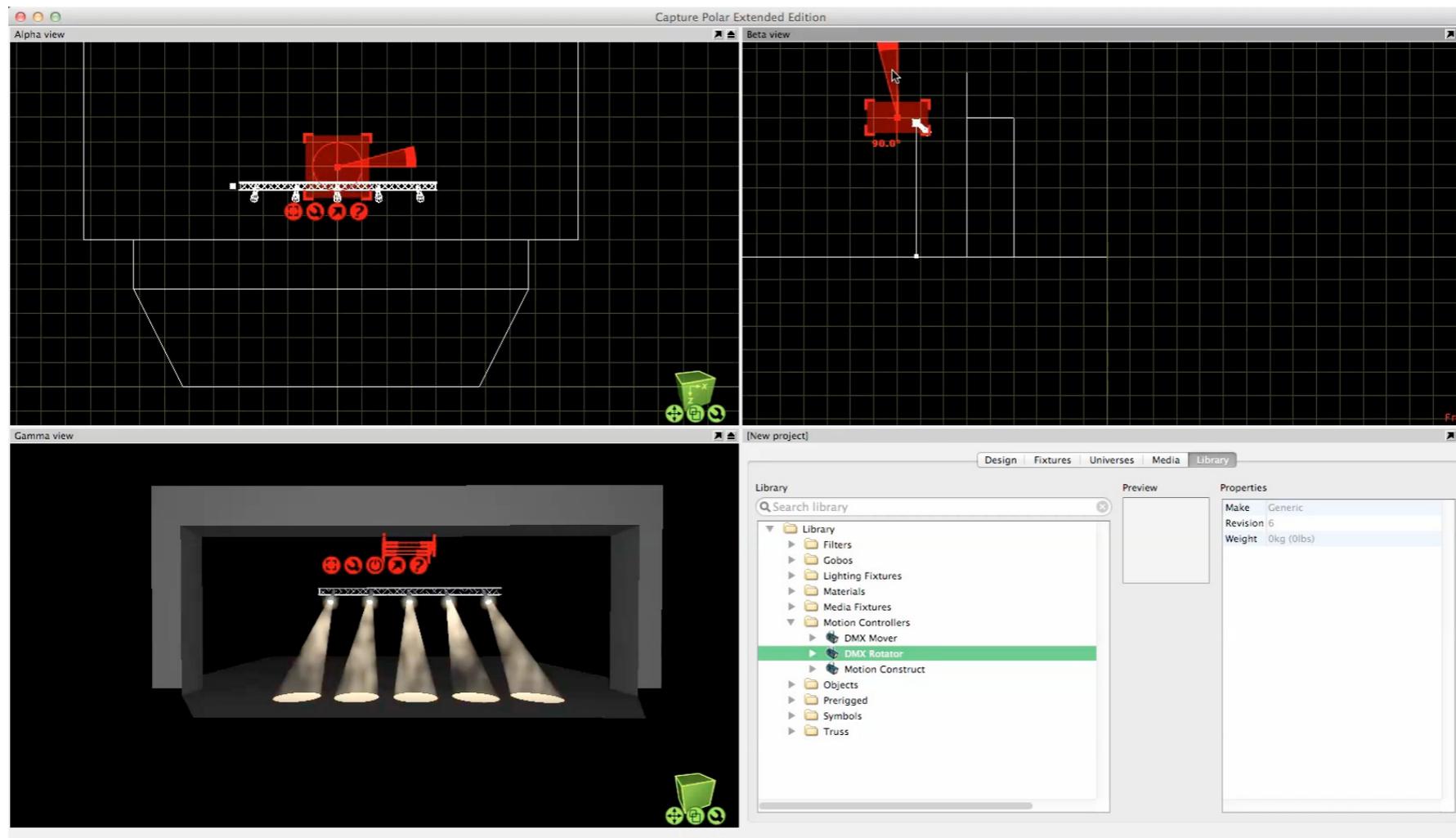
## Adding a DMX Rotator

The second DMX Motion Controller is the DMX Rotator. The Rotator can be used to rotate an object around on an axis and within a specific range on that axis.

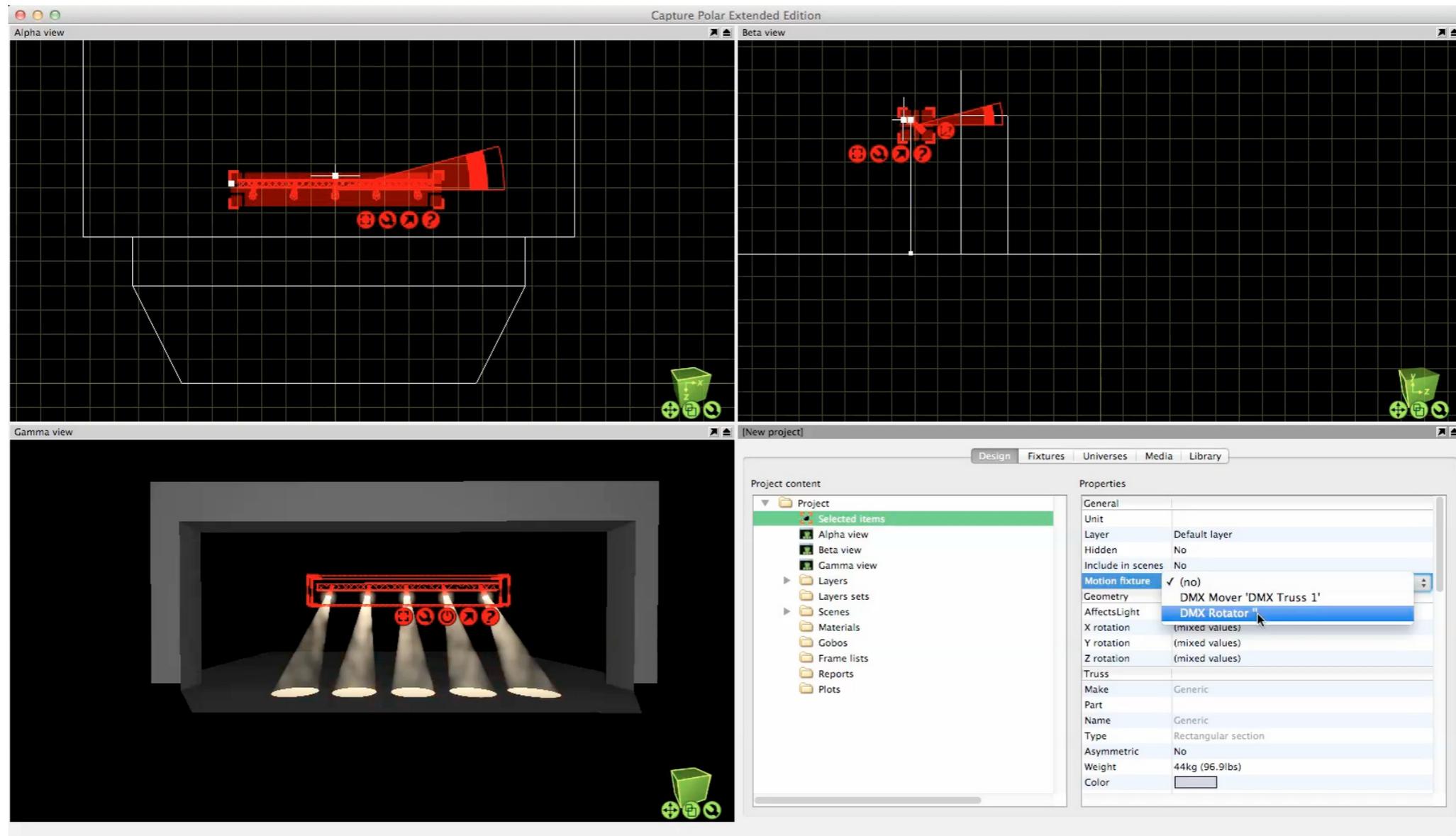
Now we add in a DMX Rotator and link the truss to it. We then go on to link the Rotator to the DMX Mover we created earlier. We call this "Chaining". Once chained together it means that we can select both the Mover & Rotator and have individual control over both.

The initial placement of the Rotator is of great importance. Wherever the Rotator is placed will be the point on which the rotation occurs. For example, we place the Rotator in the middle of the truss so that the truss Rotates around that point.

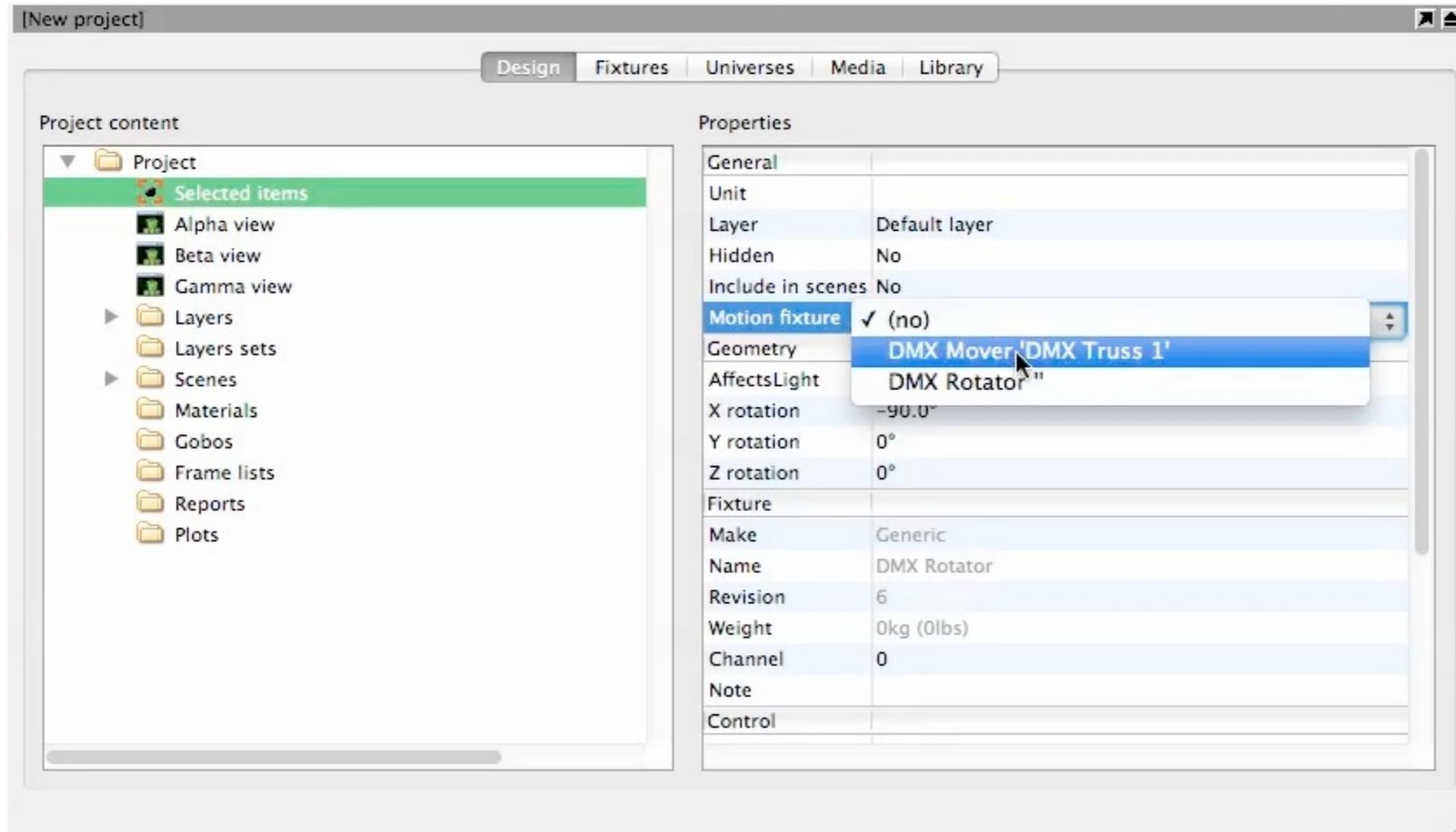
Drag the DMX Rotator into the project from the library. It can be found under "Motion Controllers".



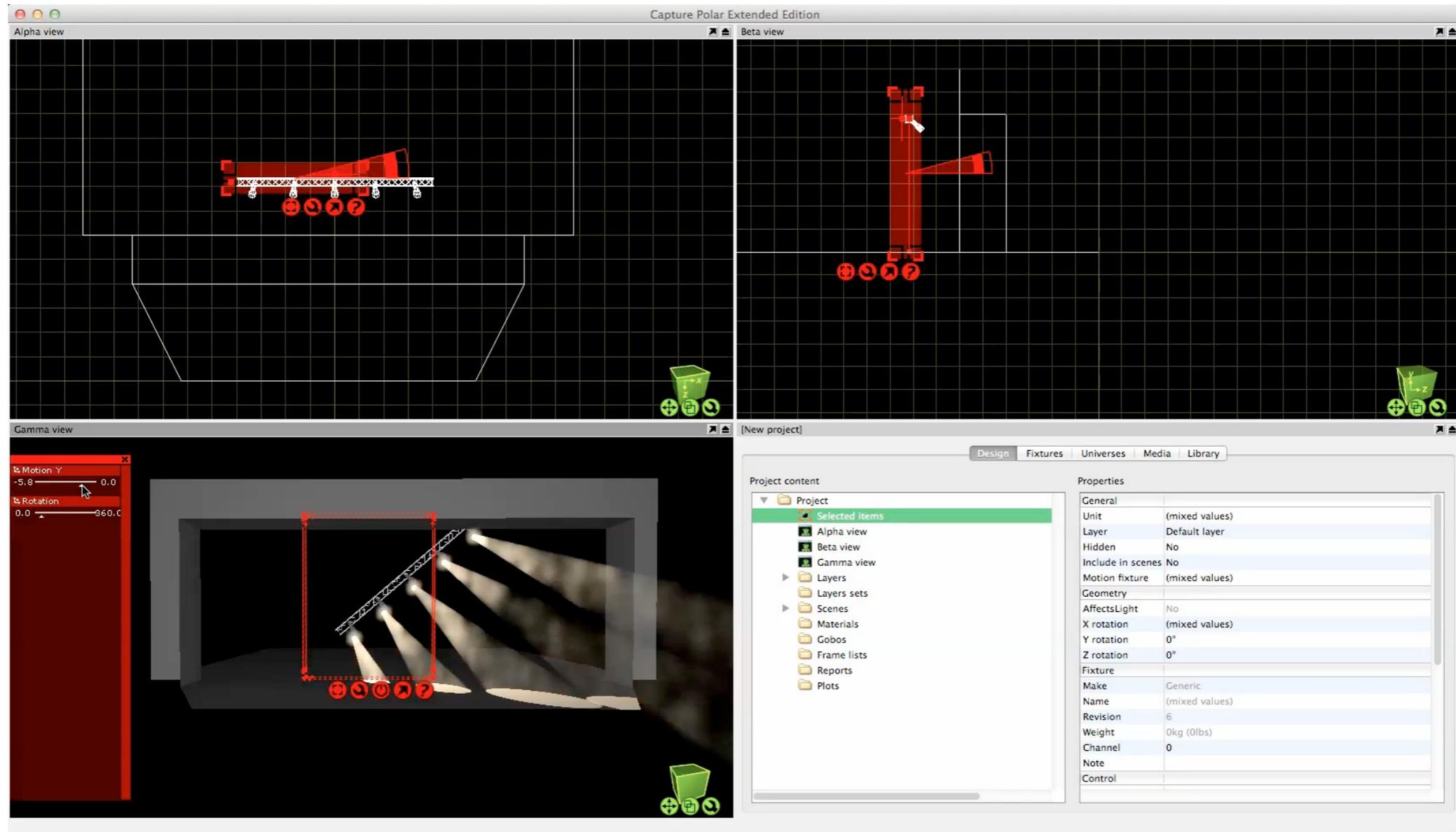
Select the Truss and the Fixtures you wish to rotate and select the DMX Rotator from the "Motion Fixture" property in the Project Window.



Now, select the DMX Rotator and in the "Motion Fixture" property, assign the Rotator to the DMX Mover. This "Chains" the two motion controllers together so that when we select both, the truss can be moved up and down and rotated at the same time.



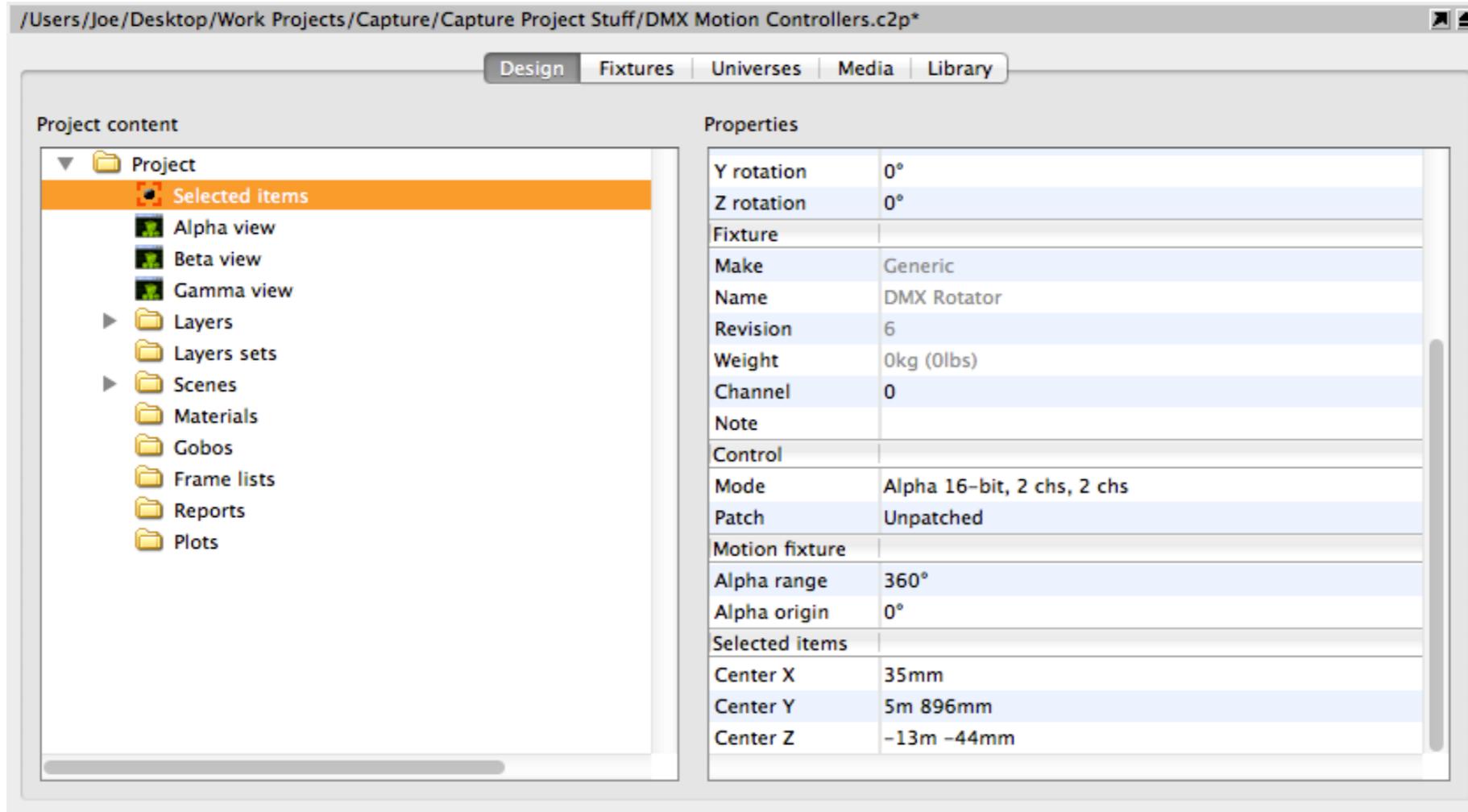
The DMX Mover & Rotator can now be selected and manipulated in the Live view just like any other fixtures.



## Patching a DMX Motion Controller

Because a DMX Motion Controller is treated just like a Fixture in Capture, it is patched in the same manner. You can manually enter its patch and mode data in the properties tab of the Project Window, or you may use the drag function to drag it onto the start channel of a particular universe.

The patch property for the controller can be found under "Control" in the selected items section of the Design tab.



The screenshot shows the Capture software interface with the Design tab selected. The Project content pane on the left shows a tree view with 'Selected items' highlighted. The Properties pane on the right displays the following data:

Properties	
Y rotation	0°
Z rotation	0°
Fixture	
Make	Generic
Name	DMX Rotator
Revision	6
Weight	0kg (0lbs)
Channel	0
Note	
Control	
Mode	Alpha 16-bit, 2 chs, 2 chs
Patch	Unpatched
Motion fixture	
Alpha range	360°
Alpha origin	0°
Selected items	
Center X	35mm
Center Y	5m 896mm
Center Z	-13m -44mm

# Advanced File Menu Functions

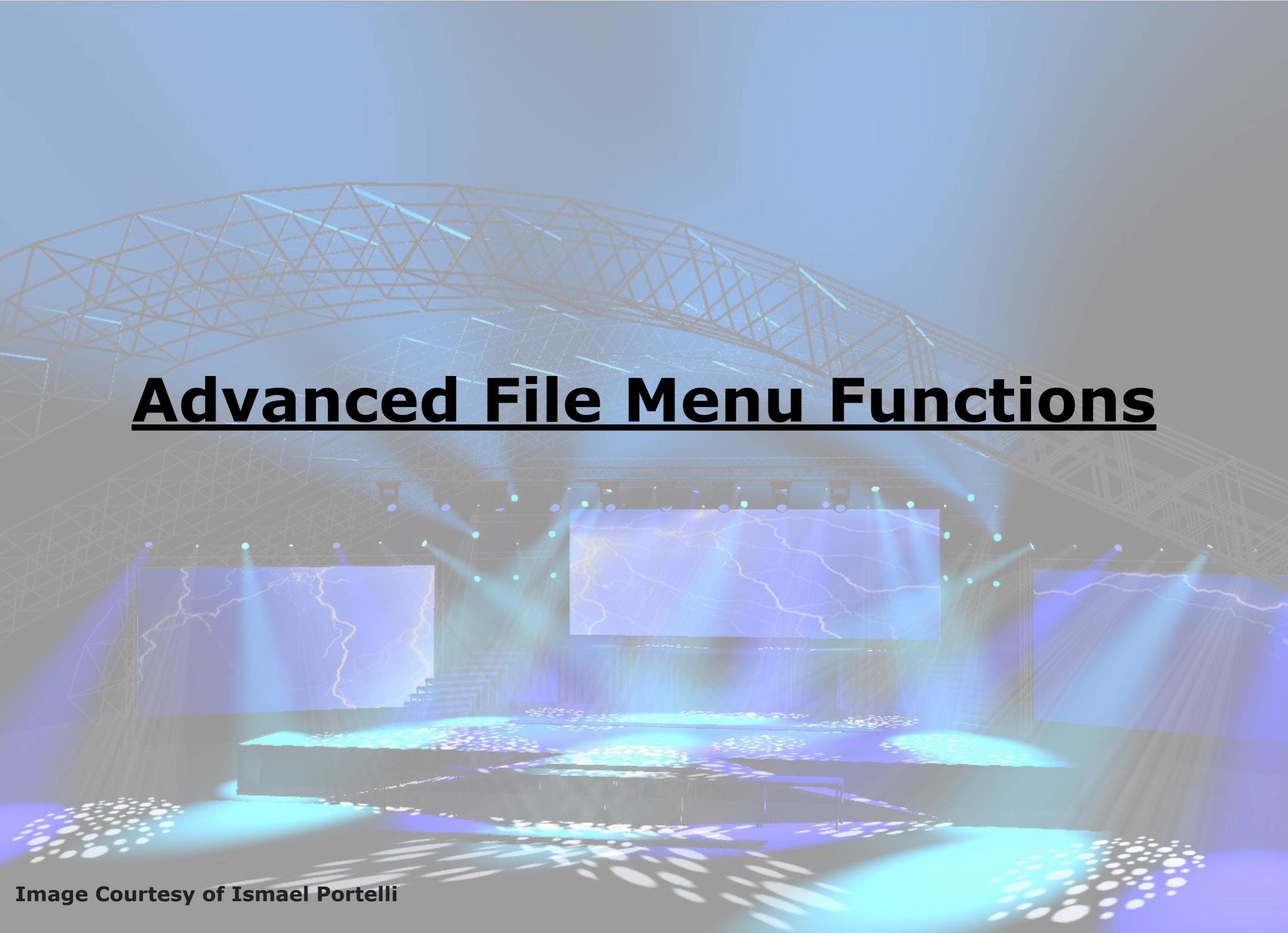


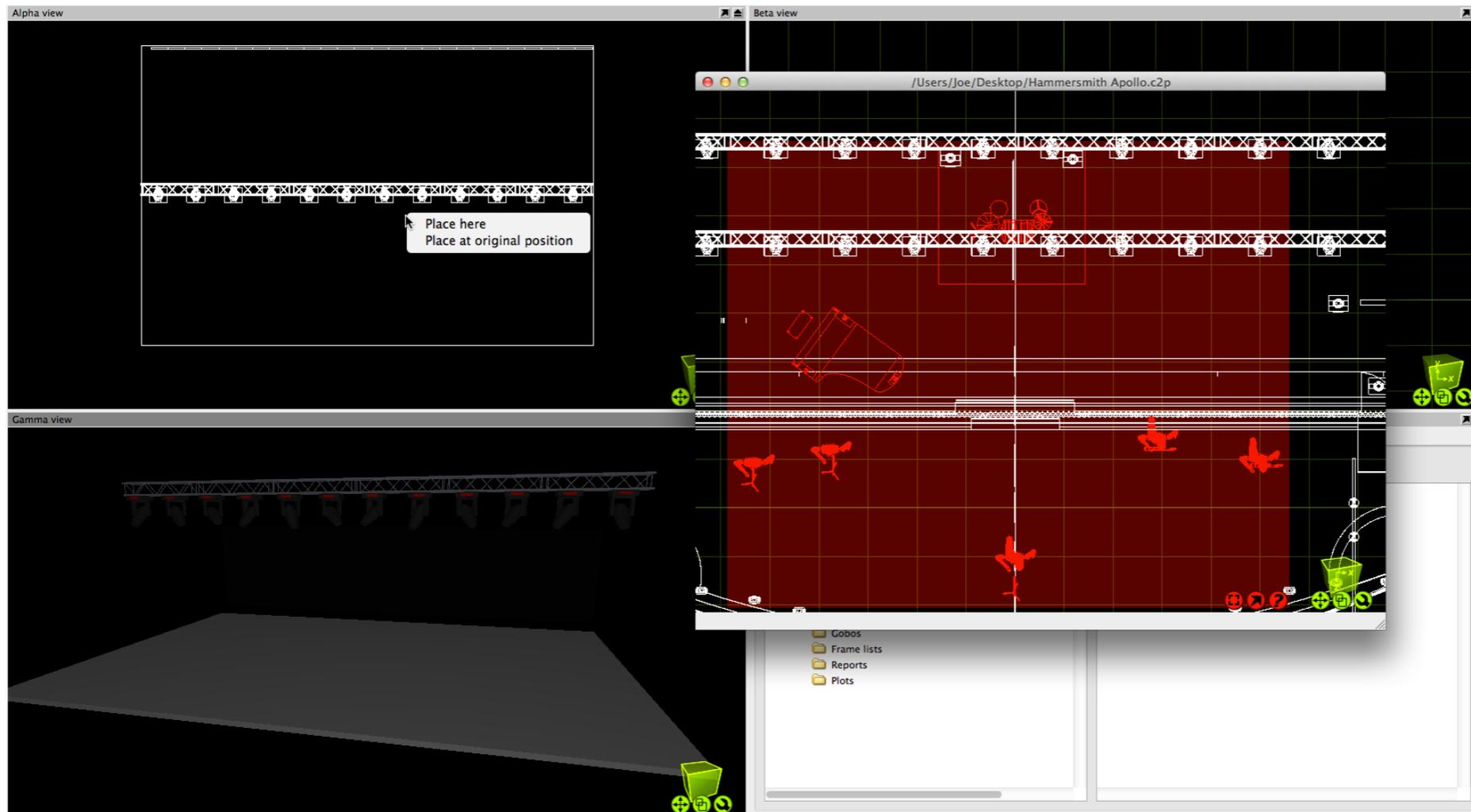
Image Courtesy of Ismael Portelli

## Using the Extract tool

The Extract feature is used to open up other project files in parallel and allows you to copy items from other projects into the project you are working with (which is done using the arrow navigator button).

When opening older projects, a window may appear telling you that some fixtures have been updated since the project you are trying to extract from. Its good practice to hit "Update" so the new project gets the same version of fixtures as in the current library.

Select "Extract" from the "File" menu, select the project you wish to extract data from. The selected project will open over the top of your active project. Select some objects/fixtures from the project you want to extract from, use the drag button to drag the items into your current project. You have the option of placing them where you put the mouse pointer or at their original position. Once you have finished, simply close the project you extracted objects from.



## Using the Export Data Tool

The Export Data tool in the File menu can be used to export a CSV file of the fixtures in the project and their associated data.

Although the file will open in any plain text reader, its best to open the file in a program such as Excel or Numbers.

To export, go to the "File" menu, select "Export data.." and select the location you wish to store the exported file. Hit "Save" and the file will be exported.

The following data will be exported and formatted into columns.

Fixture	Filters
Optics	Gobos
Wattage	Accessories
Unit	Note
Circuit	Weight
Channel	Position X
Patch	Position Y
DMX Mode	Position Z
DMX Channels	Focus Pan
Layer	Focus Tilt
Focus	



## Using the Import Data Tool

The Import Data tool can be found in the "File" Menu, it allows you to import a CSV or Excel file containing information about a rig to save time with assigning units, circuits, patches etc. The Export Data tool, covered in the previous section, defines the format of import and export. Using Import, you can bring anything from the below table between Capture project files. The best way to explore how Import works is to make a Capture project with some fixtures, assign some Units, Circuits, Patch, Channel and gobo information to the fixtures. Use the Export tool as featured in the previous section, and then you can use the information Exported to re-apply the same information for the fixtures in a new project.

Fixture	Filters
Optics	Gobos
Wattage	Accessories
Unit	Note
Circuit	Weight
Channel	Position X
Patch	Position Y
DMX Mode	Position Z
DMX Channels	Focus Pan
Layer	Focus Tilt
Focus	



## Drawing file format interchange

Capture is able to import drawing information from other softwares using the industry standard file formats described below.

### Autodesk DXF / DWG

The DXF format is a relatively simple text based format useful to transfer smaller models and drawings of simple nature.

The more complex DWG format can contain more complex information such as solid (ACIS) shapes and materials.

Both the DXF and DWG formats stand out in the fact that they do not enforce a model object hierarchy – a drawing could consist of loosely scattered polygons only. As this is a problem for Capture, all drawing content that does not belong to a “block” will be grouped by layer and presented as solid objects in Capture.

Capture does not currently support material information in these formats.

### 3D Studio 3DS

The 3DS file format was the native format for the early versions of 3D Studio, a very popular 3D modeling software. It is rich in material settings and information required to produce very realistic models. Capture successfully handles most of the information in a 3DS file, however some of the more advanced material properties are not supported.

3DS textures are not embedded inside the 3DS file but loosely packaged, typically in a folder alongside the 3DS file itself. Be careful to take this into account when sending and receiving 3DS files!

There is a rich amount of 3DS files available on the internet. However, many of these have been converted from other formats using automatic conversion tools of questionable quality.

### LightWave OBJ

The OBJ file format was developed by Wavefront Technologies for its Advanced Visualizer animation package in the 1980s. It is a simple and text based, yet very competent file format.

As with the 3DS format, OBJ files do not have material textures embedded. Instead they are loosely packaged alongside the OBJ file, typically in a separate folder.

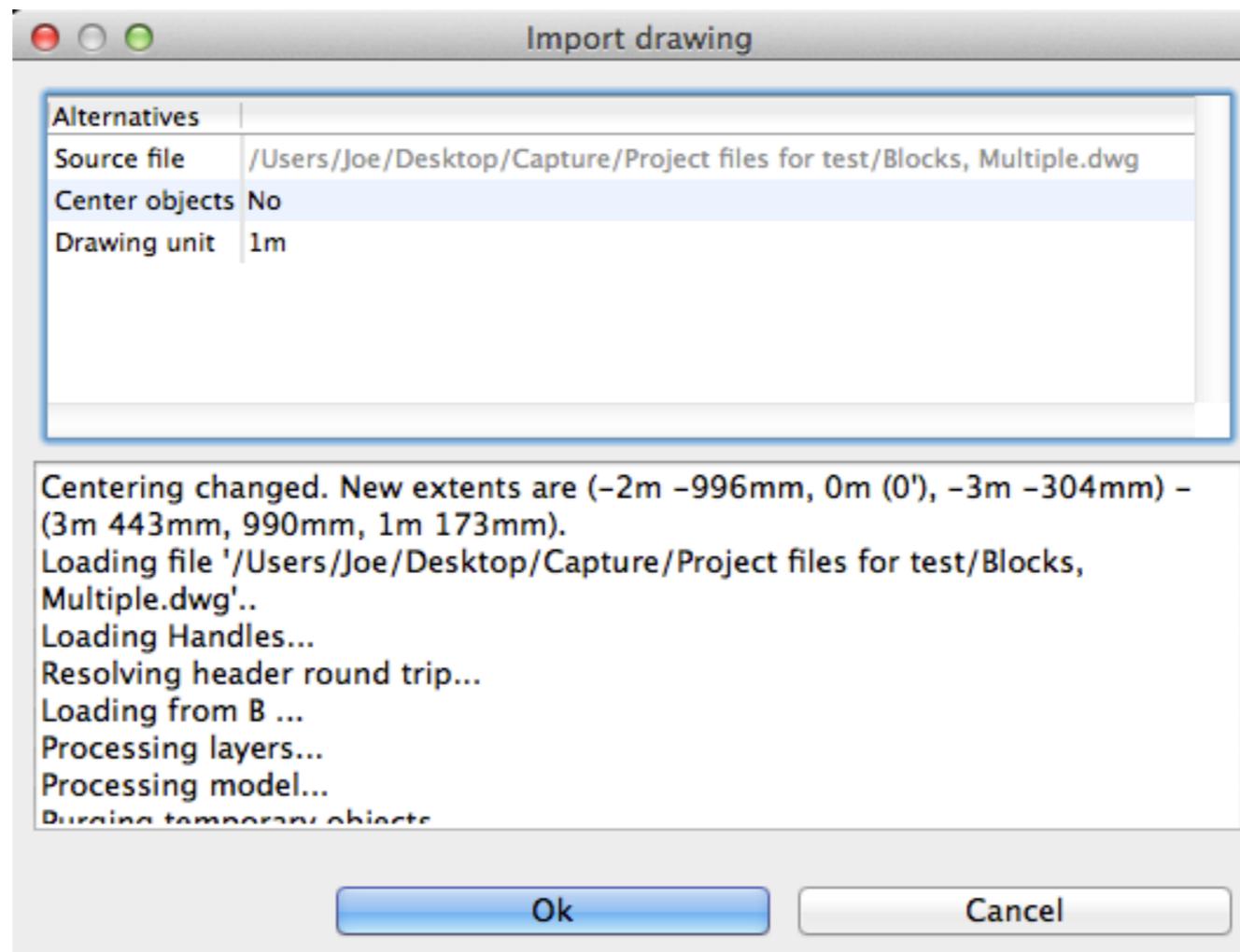


## Import Drawing Options

As mentioned, its possible to import DWG, DXF, 3DS and OBJ files to a capture project. There are two options for importing these, by using the "**File > Open**" command or using the "**Extract**" Command.

Using either of these options will bring up the "Import Drawing" dialog window. The important option in this window, is the "Drawing Unit" property. This property tells capture what measure the object was drawn in as often this information is not included in the file or it was wrong because of the user not changing the file format default.

For example, if the object was drawn in meters, millimeters or even feet, the property should reflect that for the object to be imported in the correct size. If the object is imported in the wrong size, it can be resized later within capture. Often if the property is wrong, the object is huge or tiny within capture, so its always worth zooming right out or right in to locate an object that doesn't seem to have imported, as it probably has imported but its sizing information is causing visibility issues.

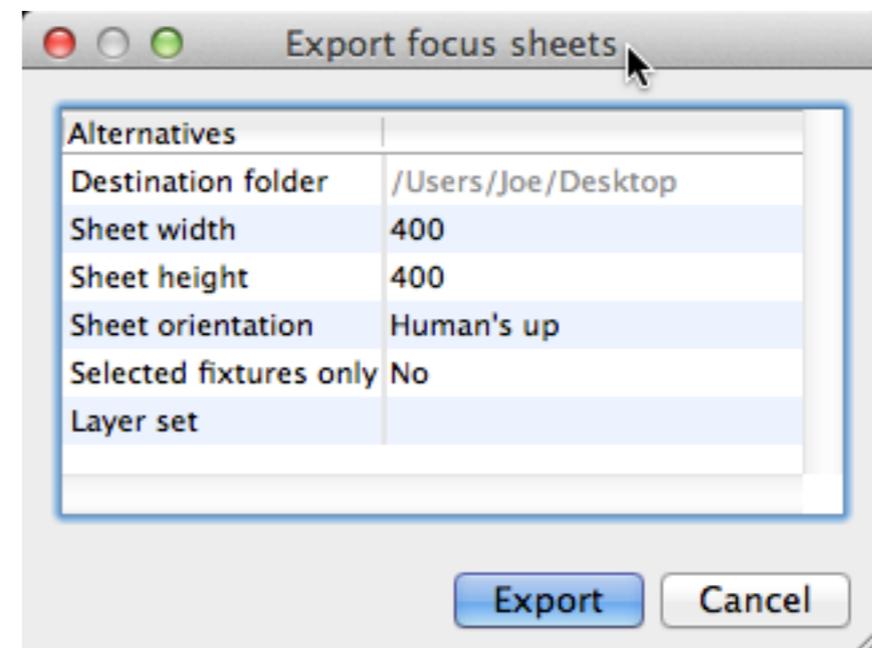
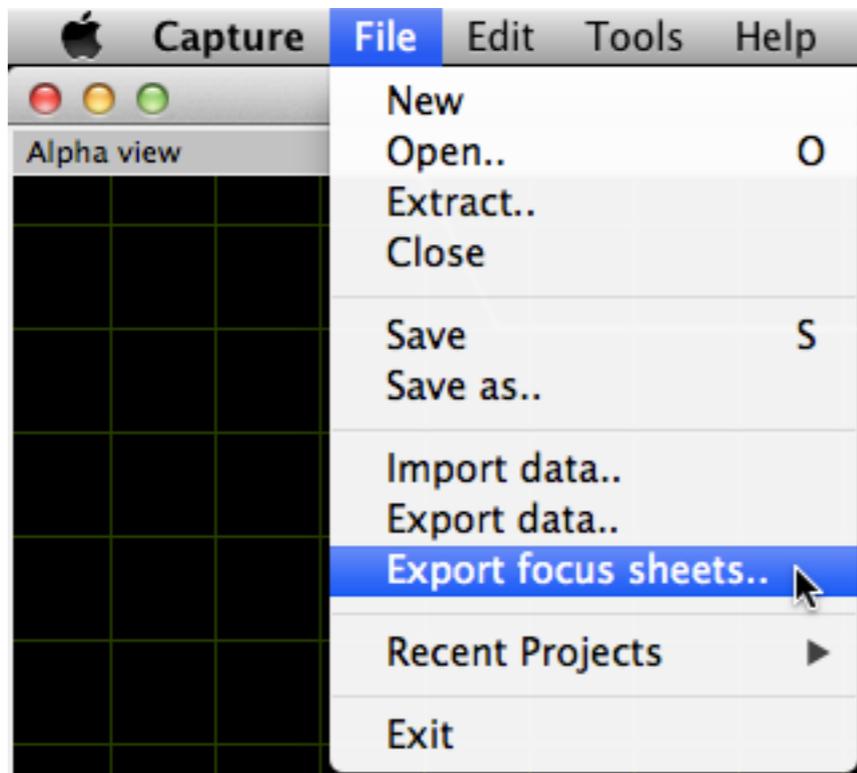


## Using the Export Focus Sheets Tool

The export focus sheets feature creates a set of images, one per fixture (or as configured in the configuration dialog presented), giving you a view out through the aperture of the fixture. It requires you to pick a folder into which the images are placed.

The feature relies on having assigned "units" within the project, this can be done by using the "Sequential Unit" feature discussed earlier in the manual. Fixtures that do not have a unit number assigned will not be exported.

You may create focus sheets based on layer sets, this allows for you to only export certain groups of fixtures. Simply make a layer with only the fixtures you wish to export, assign it to a layer set, then select that layer set in the export options window. If you only want to export focus sheets for the selected fixtures, set the "selected fixtures only" option to "Yes" in the export options.





# Troubleshooting

aperture

polar

## Troubleshooting

Should you run into any problems, do not hesitate to contact us at [support@capturesweden.com](mailto:support@capturesweden.com).

### Graphics and video driver related problems

Capture is a professional visualization software and has high demands on video cards and their drivers.

In case of problems, the following may help:

- Updating the video driver
- Trying different screen configurations (primary screen, number of screens and maybe even screen resolutions)
- Updating your operating system
- Upgrading your graphics card

### IP networking problems

If your computer is set up with multiple IP addresses, Capture will ask you to select one of them as the primary. This is important for many protocols and the option required to set is available in the Options dialog from the Tools menu.

### Windows networkless problems

If your computer is not connected to a network at all but you wish to work with software based controllers on the same computer it may be necessary to install the Microsoft Loopback adapter. The process is simple and described at <http://support.microsoft.com/kb/839013>.

### Mac OS X networking problems

If you are experiencing problems connecting Capture to your console or offline software under Mac OS X, it may be worth turning on an off the Mac OS X firewall. This is done in the System Preferences, under Security & Privacy.

