Editor Guide

Version 1.0 Beta

Document Version 0.2

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About This Document

This document is a very early version of the Editor Guide for Arcane Mapper. In its current form, it is incomplete and is missing information about many features, some of which you will see referenced in the text. I have made it available at this early state so that people interested in the product can start to gain insights into the tool's design and functionality.

The document serves dual purposes – it acts like a reference to go back to if some functionality isn't clear in the tool (in this case please let me know so I can try to make said feature less confusing if possible) and a sort of tutorial that you can follow along with. The tool comes with a simple example Map – creatively named "Example" – and then looks at each area of the tool. If you have never used the tool before it is recommended that you follow along and try to use some of the features as they are presented.

Arcane Mapper Goals

The first goal of Arcane Mapper is to allow people of all skill levels to create nice looking, atmospheric encounter-scale Maps for Role Playing Games, both physical (at the tabletop) and virtual (using something like Roll20 for example). To this end, the tool is based around the idea of using 2D art – images representing objects in the world – and placing that objects into a 3D forced-perspective environment that is created by drawing out rooms in 2D, like floor plans. These disparate elements are visually merged together using ambient occlusion, lighting and shadows.

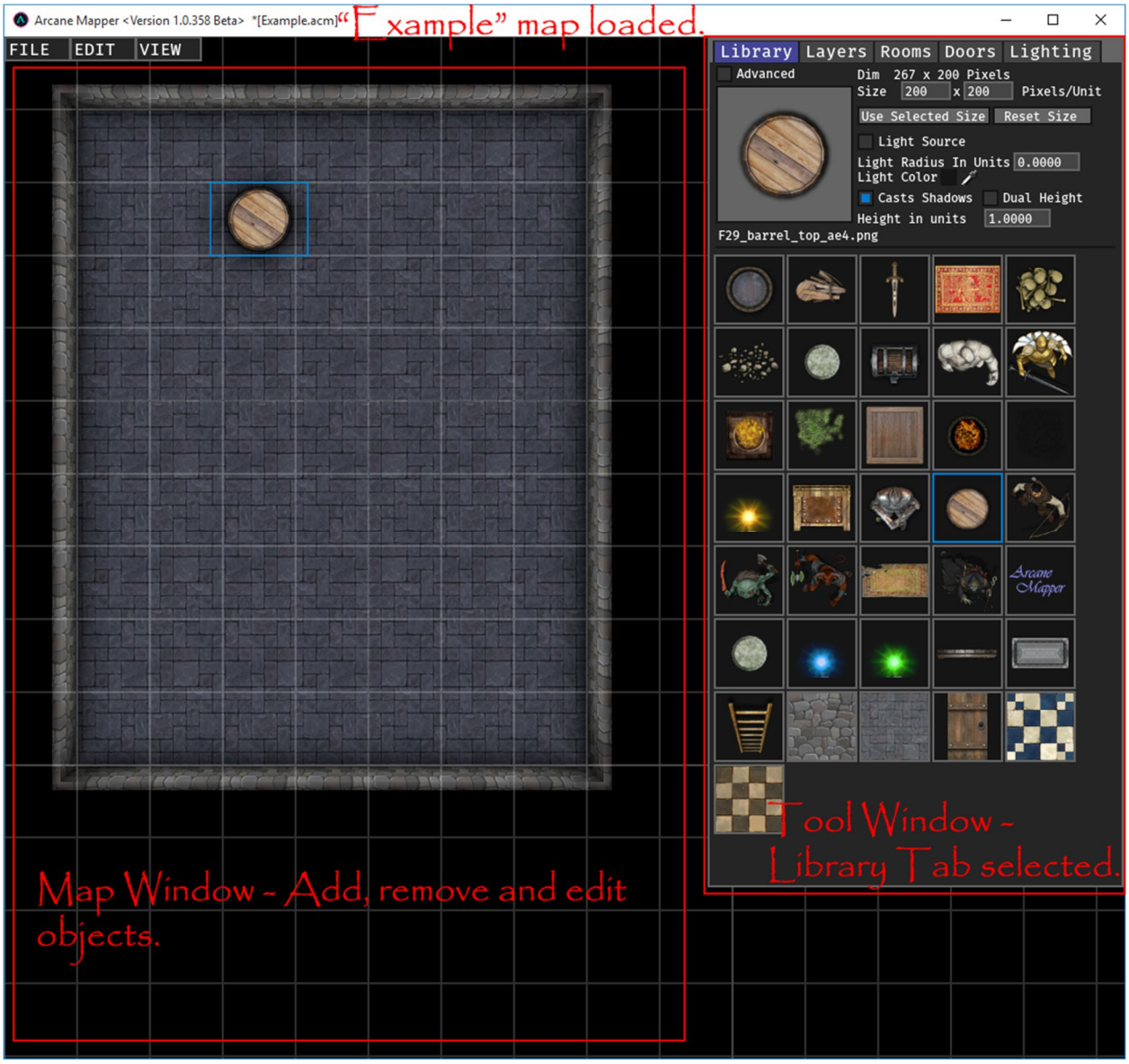
If you have little artistic skill you can use textures and images freely available online – and even with these basic resources the tool allows you to create atmospheric environments that your players will enjoy. If you do have artistic skills, then you can easily create your own assets and use them instead. And if you are so inclined, you can save out the Map as a .PSD and apply your final, hand crafted touches in Photoshop or similar tools.

Another longer-term goal of Arcane Mapper is to allow different types of Maps to be created, such as regional maps, cities and world maps.

And finally, in the future I plan on adding support for using Arcane Mapper as a Digital/Virtual tabletop. This has many advantages over simply using it as an editor such as real time lighting for your players, high quality fog of war (including options such as the ability to show previously explored areas but hide changes made since last seen), the ability to move objects around during play while maintaining the same visual quality and the ability to zoom in and out while maintaining resolution.

As a final word, I will say that I am building Arcane Mapper for myself as a GM as well as a product – so that anyway I make this product better, with your help, also makes my life easier and the quality of my games that much higher.

Layout



The main work area for the Arcane Mapper tool is the **Map Window**. This window takes up most of the space and by default has a square grid displayed, though Horizontal and Vertical Hex grids are also available. It is also possible to disable the grid entirely.

Sitting on top of the Map Window is the **Tool Window** which consists of several Tabs – **Library, Layers, Rooms, Doors** and **Lighting**. If you are first starting out, open the "Example" map to continue following along. it will look like the image above. To open a map, go to the File menu then select Open. In the file dialog select "Example" and hit the **Open** button.

Quick Hotkeys:
F1 – **Save**, F2 – **SaveAs**
F9 – **Toggle Fullscreen**, F10 – **Toggle UI**, F11 – **Take Screenshot**

Map Window

The **Map Window** is the entire gridded area shown in the Layout above. This is where Rooms are drawn, objects are placed and manipulated. There is a common set of controls for scrolling around the map and zooming in and out. Other controls, such as manipulating objects or drawing rooms, will have their own sections.

The controls described below manipulate the **camera** and they do not affect the Map itself in any way. Camera controls are locked when the mouse cursor is outside of the application window, when the cursor is inside the **Tool Window** or when certain windows are open such as the File Dialog and Settings Window.

The grid only extends to the Map boundaries, which can be set in the **Settings Window** – the default is 25 x 25 Units in size. Anything outside of the Map boundaries will be clipped (not shown) when Rendering the Map to image(s), pdf or when printing.

Moving Around the Map

The easiest way to move around the map is to **middle-click** and **drag, CTRL+right-click** and drag also works. If you are in this mode, the cursor will change from an arrow to a **hand**. This allows for the most precise control and combined with the mouse wheel (see Zooming) allows for complete navigation using only the mouse.

You can also use the **Arrow** keys or **WASD** keys to scroll around the map. Scrolling speed is adjusted based on the zoom level, so zoom out to scroll quickly and zoom in to scroll slowly.

Zooming

It is also possible to zoom in for a closer look or zoom out to get a broader overview of the map. There are two ways of zooming – using the **+/-** keys or using the **mouse wheel**. The view zooms so that the area of the map covered by the mouse cursor is locked in place. This means that if you want to focus on a specific area while zooming, place the mouse cursor over that position. To reset the zoom level to default, select **Reset Zoom** in the **View** menu or hit the **Home** key.

Changing the Grid

The Grid can be changed. Changing the color and opacity must be done in the **Settings Window**, the type can also be changed there. However, you can quickly change the Grid Type in the **Map Window** by using the **Ctrl + G** shortcut which toggles between the Grid types: **Square, Horizontal Hex, Vertical Hex, No Grid**. The current Grid settings are saved with the Map.

[Future]
*Before the initial release, or shortly thereafter, controls and shortcuts will be rebindable. For now, you must use the controls as-is.
*More Grid options such as dashed lines and points.

The Library

Arcane Mapper uses images for objects, lights and textures for floors and walls. These images, collectively, are known as your Library. There are three main actions you take involving your Library – adding new images, changing settings for specific entries and placing objects into your maps.

Adding New Images

Adding new images to your library is simple. Navigate your hard drive to the directory that contains the images. Select the images and drag them over the Arcane Mapper window. If you drag them over the **Tool Window** or have more than one image selected, they will only be added to your library. If you drag a single image and place it on the map than the object will be added to your Library and placed in the map at that location. If the image already exists in your Library, the original image and settings are used; if it is a new image then it is added to the Library with default settings.

[Future] For release I am planning on adding a method of finding free art assets online and adding them (similar to Roll20). This is needed since the program will not be packaged with many assets but with all of the art available, free for private use, this should not greatly impact your ability to make nice looking maps for your games. However, this won't be available for the Beta but I will pre-package the free assets I am using. These assets cannot be sold.

Change Settings

The default settings usually work fine but they make certain assumptions. For example, Arcane Mapper assumes that images are sized at 105 pixels per unit (more on this below). If you download art off the internet or want to have more detail for printing – this may not be ideal. There are many other settings that you may want to change as well.

Basic Settings

There is a lot of information displayed whenever something in your Library is selected.

Dim The dimensions of the image, in pixels.

Size The size of the object in Pixels Per Unit. This tells the editor how to convert from pixels in the image to units on the map, where 1 unit = 1 grid cell. This will usually be 5 feet, 3 feet (1 yard) or 1

meter depending on the system. In the case of this barrel, 200 pixels maps to 1 unit on the map, making this barrel about 1 unit in size. If this is confusing, don't worry too much – see **Use Selected Size** below.

Use Selected Size This button automatically fills in the **Size** based on the scaling of the currently selected object on the map. So, if you don't know how to figure out the proper Pixels Per Unit value, place the object on the map, scale it to the desired size and then hit the **Use Selected Size** button. Once you do that the new size will be used whenever you place that object in the future.

Reset Size This reset the object back to the default size – 105 Pixels Per Unit.

Light Source Check this if you want this object to act as a light source. This is useful for torches, fire pits and other sources of light. When you check this a default light color will be assigned and shadowing will be disabled. You will be able to re-enable shadowing and adjust the color and range.

Light Radius In Units This is how far the light shines in Units (remember 1 Unit = 1 grid space). For example, if you set the **Light Radius In Units** to 10 then the light will shine 10 Units in every direction.

Light Color If you click on the colored box a color picker will be opened where you can select the desired color. You can also select the Eye Drop and click anywhere on the image to the left if you want the color to match part of the image.

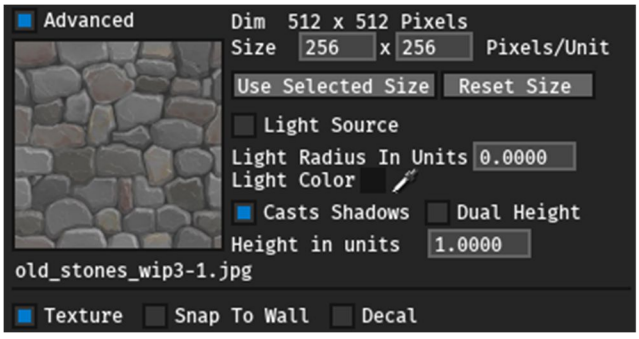
Casts Shadows Enable this if you want the object to cast shadows. This defaults to true unless the object is a light source.

Dual Height [Not yet implemented] This is an alternate way of generating shadows for the object. Instead of assuming the object is being rendered top down, it assumes the object is viewed from the side.

Height in Units This is the height of the object in Units, this value is used when generating shadows. 1.5 units is about the height of a character, 1.0 is good for crates and barrels. Smaller values make the objects appear shorter when casting shadows, larger values make them taller.

Advanced Settings

If you select Advanced in the upper left corner, you will get some additional settings. More less frequently used settings will be added in the future.



Texture This indicates that this image is used as a texture for floors and walls. This will resort this image to the end of the Library and cause it to show up under the **Rooms Tab** so it can be used to change the floor or wall textures.

Snap To Wall This object will re-orient to the nearest wall, if it is overlapping a wall on the map. Use this for objects like torches so that they can be quickly placed on walls.

Decal This object will be flattened and aligned with the nearest wall, if it is overlapping a wall on the map. Use this for wall decorations such as holes, paintings, wall grime and other details.

Placing Objects

Placing objects in your maps can be done in a few different ways.

The simplest and most intuitive method is to simply **drag and drop** images from the Library Tab right onto the map. When doing this the object will be partially transparent so you can drop it wherever you like.

The second method is to select the desired object and **Shift + Right Click** with your mouse wherever you want to place it on the map. This allows you to place objects very quickly, useful when you want to place a lot of something, like barrels, boxes or debris. If you select an object on the map it automatically selects it on the Library Tab, so you can select an object on the map and Shift + Right Click to place that object in other places. Note this is not a copy or duplicate, see Manipulating Objects in the Map Window for more details on that type of interaction.

[Future]

In the future randomized rotations, will be implemented so you can place objects quickly while looking more natural. In addition, being able to randomly select between a set of objects will also be implemented – this will be great for outdoor environments – so rocks, trees and other features can be quickly placed.

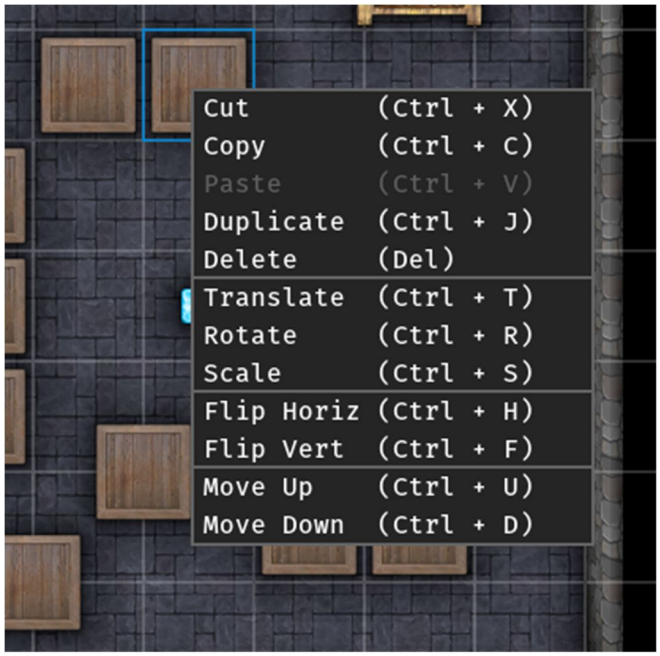
Manipulating Objects in the Map Window

One of the most common things you will be doing is manipulating objects in the **Map Window**. To manipulate an object, first it must be selected. To **select an object *Left-Click*** with your mouse when the mouse cursor is over the object. Note that objects are selected using a **Pixel Mask** – this means that you must click on a solid visible area of the object to select it. This might make selecting slightly harder in some cases but in the clear majority of cases it makes selecting things much easier. For example, if you place a small knife on a table, selecting the knife is easy – since you will only select an object if you click on a solid, visible part of it. Once an object is selected it will have a blue box drawn around it.

To move an object simply Left Click the object and hold the Left mouse button. By default, the object will snap to the grid, this can be disabled in the **Settings Window** (see ***Settings***). If the object is placed inside a Pit it may be rescaled based on depth (see ***Drawing Rooms***).

If you hold the **Alt** key while moving, rotating or scaling then snap settings are ignored, this is a quick way of freely placing or moving a few objects without having to disable snapping each time. In addition, if you need to make fine adjustments while moving objects, you can use the arrow keys to nudge them 1 pixel at a time.

To make other adjustments, select the object and open the Edit Menu or Right Click Menu. To access the ***Right-Click* Menu** simply ***Right-Click*** on the selected object with the mouse.



You will notice that each operation has a shortcut associated with it, these shortcuts can be used to quickly apply these actions without needing to use the menus.

Cut Make a copy of the object and then delete it. A copy of the object can then be pasted.

Copy Copy the object so it can be pasted somewhere else.

Paste If an object has been copied this will paste it where the mouse is located.

Duplicate Duplicate the object in place, useful for making quick copies that are used near the original location.

Delete Delete the object from the **Map**. This does **not** delete it from your **Library**.

Translate Change the object control to Translate – which is the default movement mode.

Rotate Change the object control to Rotation – this allows you to rotate the object (see ***Rotation*** below).

Scale Change the object control to Scaling – this allows you to uniformly or non-uniformly scale the object (see ***Scaling*** below).

Flip Horiz Flip the object horizontally. This is not the same as rotation since it mirrors the object horizontally.

Flip Vert Flip the object vertically. This is not the same as rotation since it mirrors the object vertically.

Move Up Move the object towards the top of the stack. This means that if multiple objects are overlapping, it will shuffle it upwards towards the top.

Move Down Move the object towards the bottom of the stack. This means that if multiple objects are overlapping, it will shuffle it towards the bottom.

The Edit Menu offers additional functionality such as Undo and Redo.

Rotation

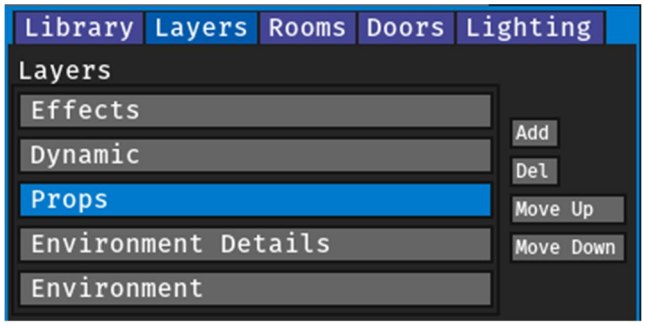
This control allows the object to be rotated. By default, rotations snap to 22.5 degrees (i.e. it snaps to 16 directions) but this can be changed or disabled in the **Settings Window** (see ***Settings***). To rotate the object Left Click on the Orange Square and hold the mouse button down while moving the mouse to another place on the circle. You can also just Left Click on the circle to rotate to that direction instantly. Note that the center of rotation is marked by the X in the center of the circle.

It is recommended that you use a snap of **22.5** degrees for **square** grids and **30** degrees for **hex** grids. This allows for a decent number of rotations while allowing the object facings to match the grid exactly.

Scaling

This control allows the object to be scaled. By default, scaling factors snap to increments of 0.5 but this can be changed or disabled in the **Settings Window** (see ***Settings***). If you use the left or right handles, the object will be scaled horizontally only. If you use the top or bottom handles it will be scaled vertically only. If you use the corner handles, it will be scaled both horizontally and vertically by equal amounts. If you hold **Ctrl + Left mouse** button, then the corner handles scale horizontally and vertically at the same time but non-uniformly, i.e. if you move to the right more than down, the object will be stretched.

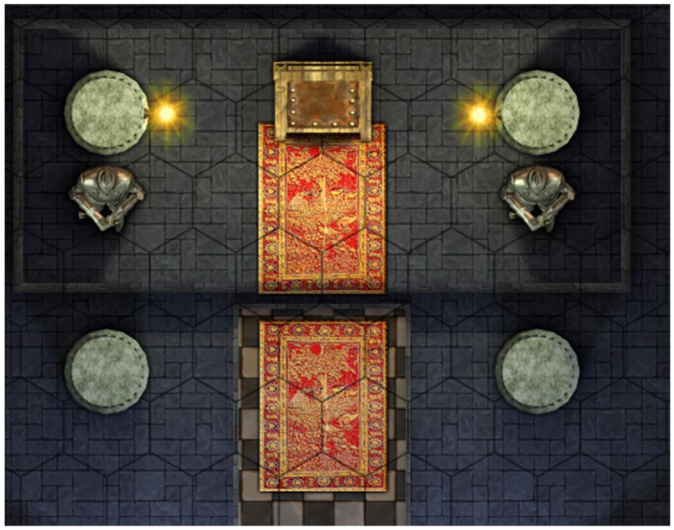
Layers



The Layer Tab in the Tool Window allows you to switch between Layers, change their names and move them up and down. At this early stage Layers above the third (Props) do not function correctly yet, so adding and removing Layers should be avoided until this is finished. For the Beta, the useful Layers are the Environment, Environment Details and Props. Right-click on a Layer to change its name, Left-click to switch to that Layer.

When a Layer is selected, objects in higher layers become transparent on the Map. Objects are rendered from the bottom Layer upwards, so objects in the Environment Layer will be rendered first – after the rooms themselves – followed by the Environment Details, Props and so on. Only objects in the **current Layer** can be selected and manipulated on the Map.

Objects in the **Props Layer** (and higher Layers in the future) are lit, cast shadows and ambient occlusion. Objects in the **Environment Details and Environment Layers** use the Room lighting directly and do not cast shadows on their own. These layers are great for objects that should be sitting on the floor or walls, like carpets, dirt and grime.



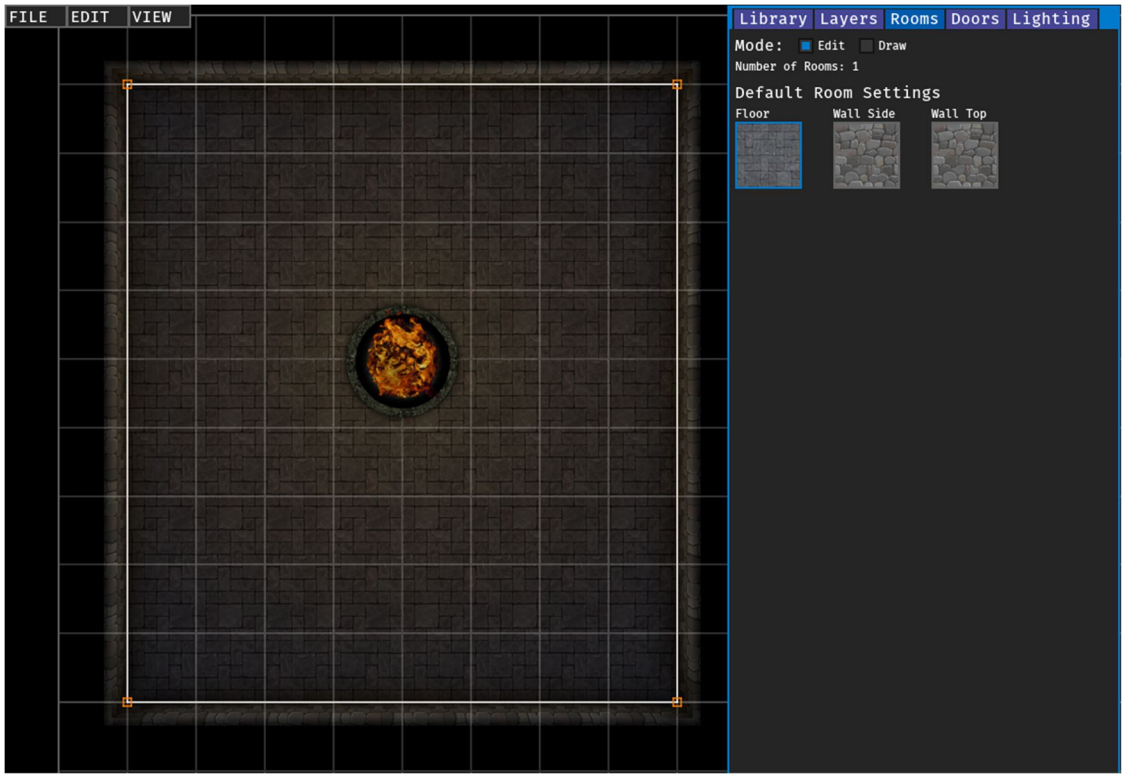
In the “ThroneRoom” map you will notice that, when the Props Layer is selected, you cannot select the carpets in this area. These carpets are on the Environment Details Layer. Notice also that they inherit the lighting from the floor and walls, as evident by the top carpet appearing to hang over.

This map has several floor and walls details in the Environment Details Layer, such as grime, mold and other types of carpet.

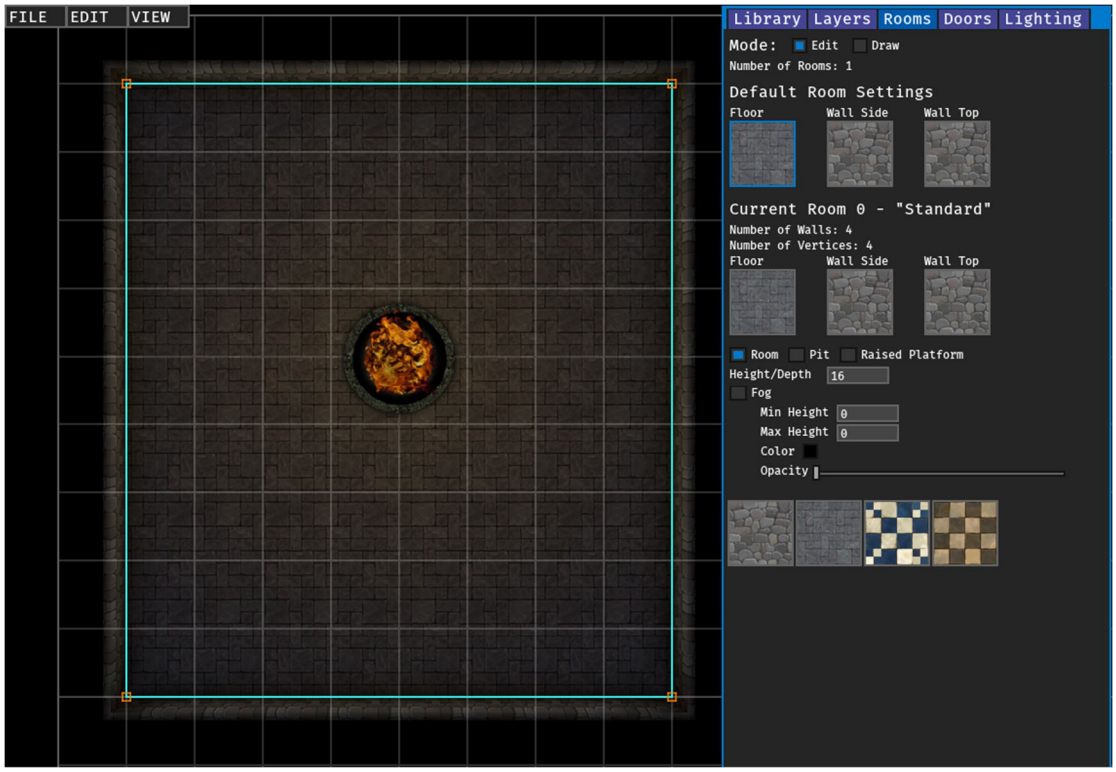
In the screenshot below you can see the mold under the skull pile, the dirt on the floor by the barrels and carpets on the left side of the screen. Since the Environment Details Layer inherits the lighting from the floor and walls, they merge in and become details.

Room Editing

Rooms are created by drawing out the shapes. To start **Open** the “Examples” map and then select the **Rooms** tab on the Tool Window. Before drawing out new rooms, let’s see how to edit one first. When the Rooms tab is open, you will notice that white lines are drawn around the room. This is the actual shape of the room, which marks out the floor. Select the Edit Mode in the Rooms Window. You should see this:



If you mouse over the room, you will notice that the lines change to an Orange color. To edit its properties, you will need to select the room. This is done by **left-clicking** on the highlighted Room. If a room is selected the color of the lines will change to cyan and you will see a lot more options in the Rooms tab.



If you want to change the shape of the room, mouse over one of the vertices - the small orange squares – and press and hold the Left Mouse Button. When you let go, Arcane Mapper will rebuild the room based on the new shape.

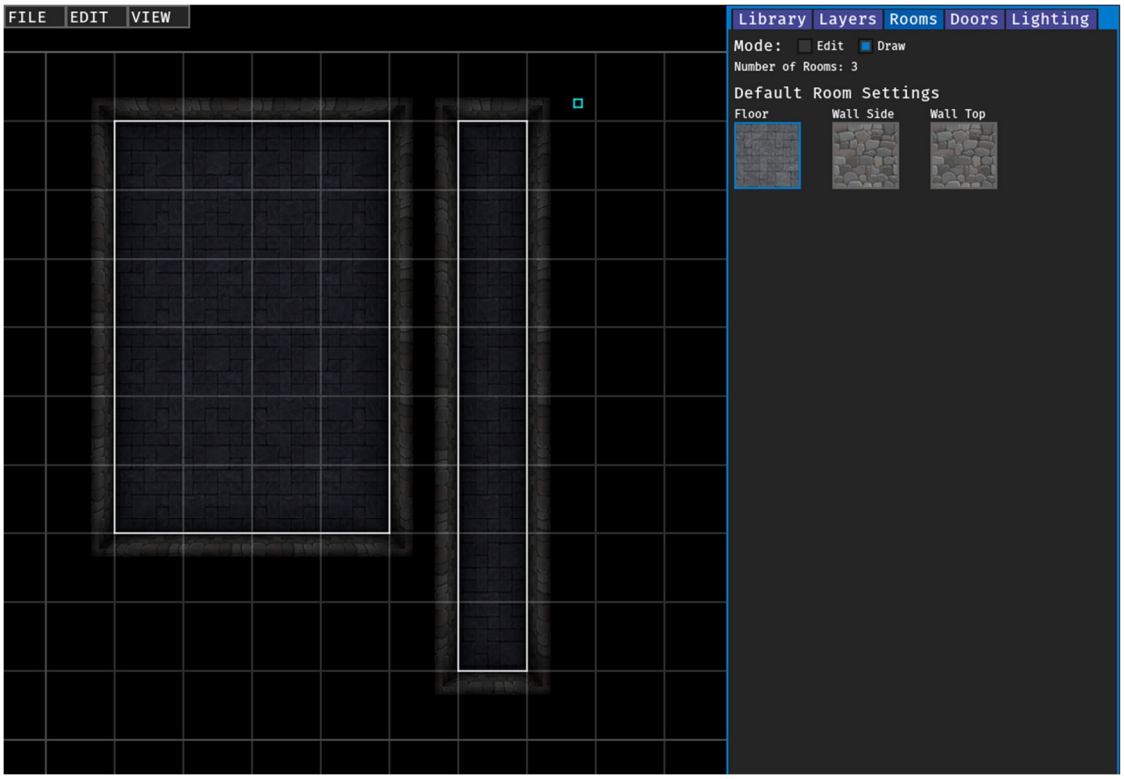
To change the floor texture, click on **Floor** in the **Current Room** area and it will highlight. Then click on one of the textures towards the bottom of the screen. In a similar way, you can change the **Wall** texture as well. Currently changing **Wall Top** does nothing useful but later that will change what the tops of the walls look like.

You can change the height of the walls by clicking in the Height/Depth edit box and changing the number. Any value larger than 0 will work but wall heights much beyond 32 or 48 don't work as well, since the walls can self-intersect and the textures repeat too much vertically. A height value of 1 or 2 gives you very short walls, good for tightly packed indoor environments. Larger settings, such as 32 work well when you want to emphasize the walls; 16 seems to be a good sweet spot but use whatever you think looks best.

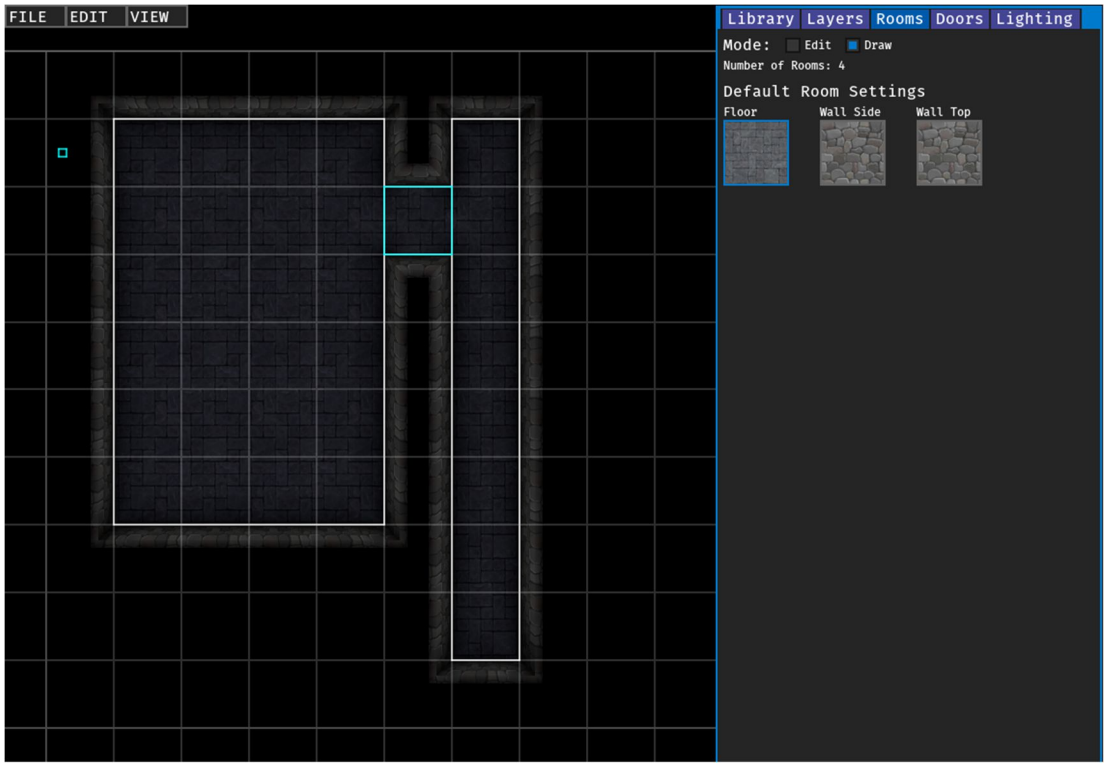
It is possible to change the type of room, from regular Room, Pit and Raised Platform. These don't make sense for a single room but work well when drawing out pits and raised areas inside of existing rooms. If you are editing a Pit, you can also setup height fog. To do that hit the Fog checkbox and set the minimum and maximum height. By default, the minimum should be 0 and the maximum the Height/Depth of the room. Make sure the change the color and opacity to see the fog.

To create new rooms, switch back to Draw Mode and make sure you have some empty space to draw in. Now there will be a cyan square near your mouse pointer whenever it is over the Map Window. You will notice that the square snaps to specific locations, based on the snap to grid settings. Left click to start a line and continue left click in different locations to draw a shape. Once the shape is complete, Left-Click

on the first vertex (point) or Right-Click. This should complete a room and you should see the floor and walls appear. At this point you can select it in Edit Mode, if you want, to change settings.

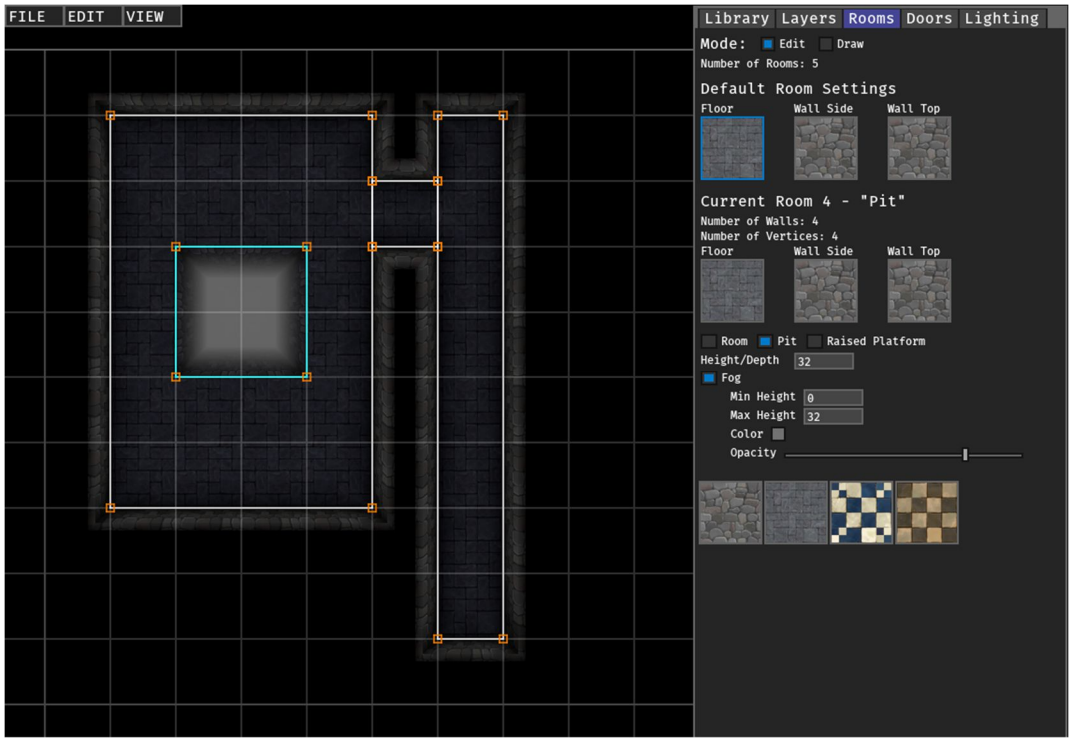


Connecting rooms is really simple. In the image above you see a room and a hallway. I drew those out as two different rooms as discussed above. To connect them, draw a square in the space in-between the room and hallway that touches lines from both. This will create another room that connects these two rooms. See the image below, which should help clarify what I mean.



Notice the highlighted square room in-between the two. Whenever you draw a new room that shares edges with existing rooms, Arcane Mapper automatically connects the shared edges and builds the correct walls.

Next, we'll add a pit to the bigger room. To do that draw another shape completely inside the room. Once finished it will automatically become a Pit. You can go to Edit Mode to change the depth of the Pit, add fog or change it into a Raised Platform instead.



In the screenshot above, you can see I added the Pit, made it 32 units deep and added gray fog.

Finally add some objects with lights, ground details in the Environment Details Layer such as dirt and moss and the rooms become a lot more interesting. Remember that **Ctrl-G** changes the grid mode.