

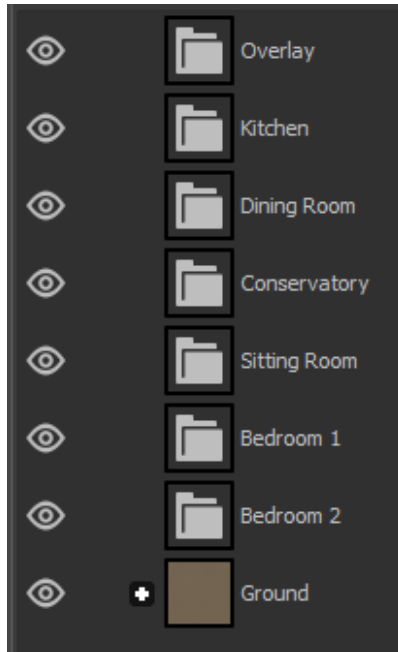
# PV Games 2.5D Tiles - Mapping And Layer Eventing for RPG Maker MV

Start a new image configured with a 32x32.

Create Layer Groups for each part of the Map.

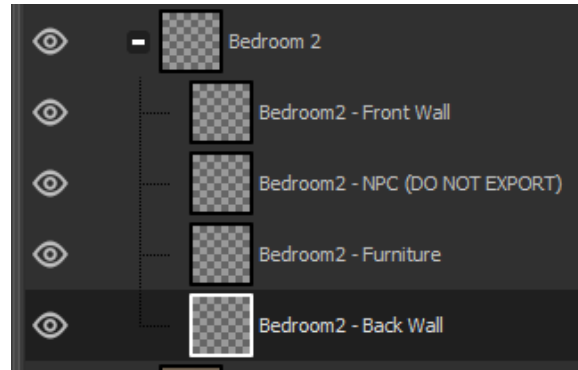
Rooms at the “back” of the map go lower on the list to let rooms in front of them draw on top.

I go ahead and fill in a ground texture so I will have something to build on other than the gray grid.



At a minimum, each room will have three layers built into it: Front Wall, Back Wall, and Furniture.

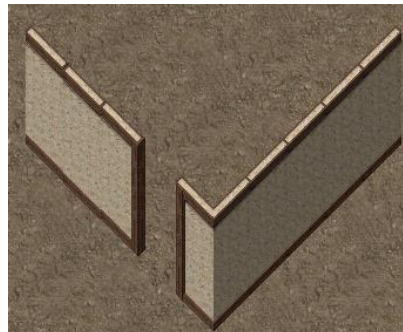
I also like having an NPC Layer both for planning events and for scale comparisons.



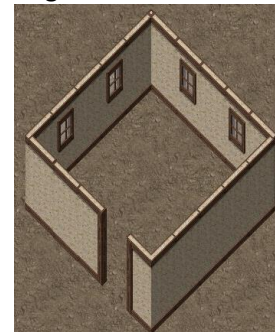
Back Wall



Front Wall



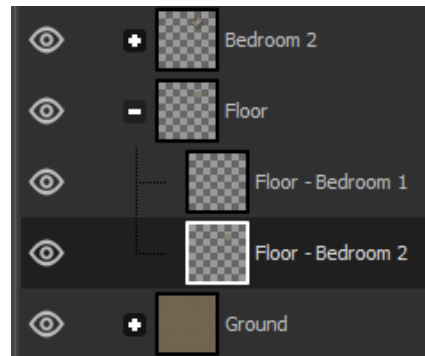
Together



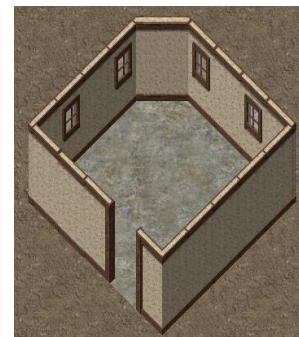
And since completely square rooms are boring: Modified the back wall.



Then going back to add a layer group that I missed earlier - Floors



Here I tend to look to other PV Games graphic sets frequently, with Mythos set being one of my favorites for floors.



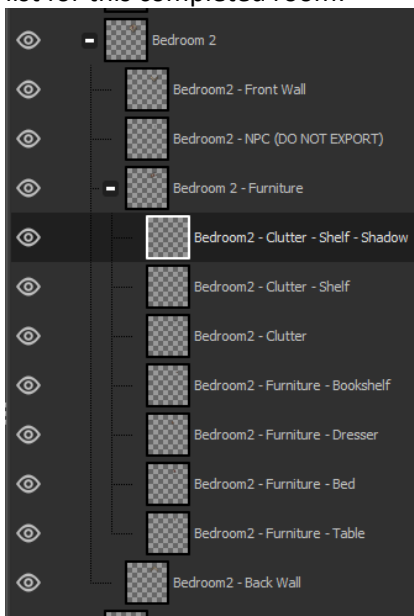
Then finally adding some furniture to the room.  
And an NPC for testing it.



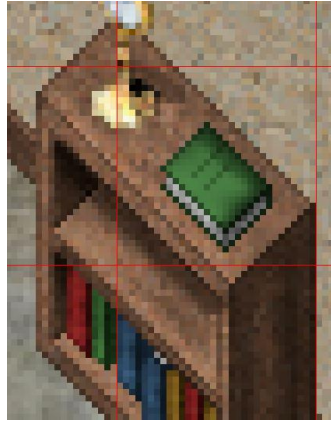
The black line under the NPC is the base of the character sprite in the sprite sheet so I can align her on the map exactly like she would be in the game.

Using this, I can move her around to the different grids as I place objects to make sure there is a decent walking path to the places I need without clipping issues or having her stand on furniture.

While I only set up one Furniture Layer at the start, I recommend using many layers so you can move and adjust things as needed. My final layer list for this completed room:



### Bonus: Filling Open Shelves



Make sure to put the items that will go in the shelf on their own layer.



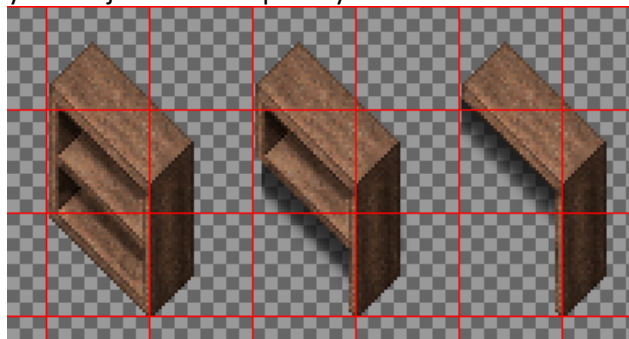
Use the Lasso tool to cut away the parts that would be hidden by the top / side of the shelf.



Finally, add a shadow layer (I use a black brush tool and set the layer to 75%)



Another option if you are going to do this regularly, is to store a cut-up copy of the shelf with the shadow already attached so you can just build it up in layers.



With this

- Layer 1 – Full Empty Shelf
- Layer 2 – Lower Shelf Items
- Layer 3 – Half-Shelf
- Layer 4 – Upper Shelf Items
- Layer 5 – Top of Shelf

From here, you just keep adding more rooms, moving Up the layer list as you move forward in the building.

Note that as you move forward, the Front walls of previous rooms will end up being the Back walls of new rooms.



And then adding the Front Wall layer.



Note that when I get to the front of the wall, I start using the more decorative pieces instead of the plain ones.

Those will be walls outside of the house, and I feel gives a visual distinction between interior and exterior walls.

Then the Side wall needs to be filled in. This will go on a new Layer Between the Front and Back walls.

I start with the post with an angled top. Then fill in with the top edge of the Side Wall.

Finally cutting off the extra piece of Back wall.



I also made a slight edit to the different layers at the corners to make it look cleaner.

---

### Bonus: Additional Wall Edits

Plain Wall + just the edge of the wall with a border = door frames without having to have the extra wood pieces on the inside of the house.



It's a simple edit that gives a nice effect without making it into an outside wall.

Next is for when you put a wall that doesn't have the wood edges next to one that does.

This leaves the wall without edges not having the recessed border that gives it that 3D effect.

Fortunately, we have plenty of borders to work with, so can fill in a 3D edge where they join ourselves.



Finally, I will use the same concepts to add more interest to the front straight wall piece.

I should have used the front wall with the wood post to start with anyway.

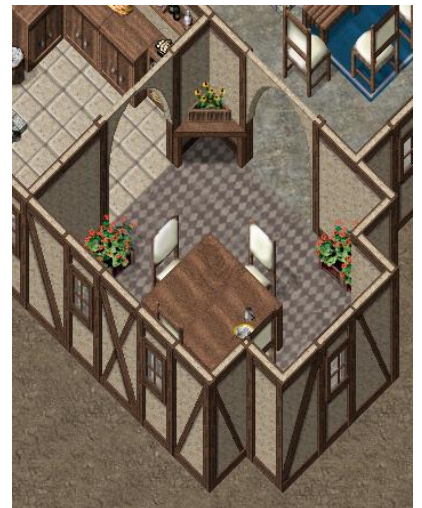




Add carpet and some furniture and this room is done.



Keep adding new rooms, working from the back forward.



A foundation around the lower edges adds a nice touch.



And a front deck finishes off the house.





Add some basic landscaping and now there is a house ready to be used for mapping.



# Start a new RPG Maker MV Project

## Required Addons

ChangeTileSize Comes with MV

GALV\_LayerGraphics <https://galvs-scripts.com/2015/10/30/mv-layer-graphics/>

Yanfly\_RegionRestrictions [http://www.yanfly.moe/wiki/Region\\_Restrictions\\_\(YEP\)](http://www.yanfly.moe/wiki/Region_Restrictions_(YEP))

## ChangeTileSize

Parameters	
Name	Value
Tile Size	32
Tileset Image Folder	img/tilesets32/
Parallax Image Folder	img/parallaxes32/

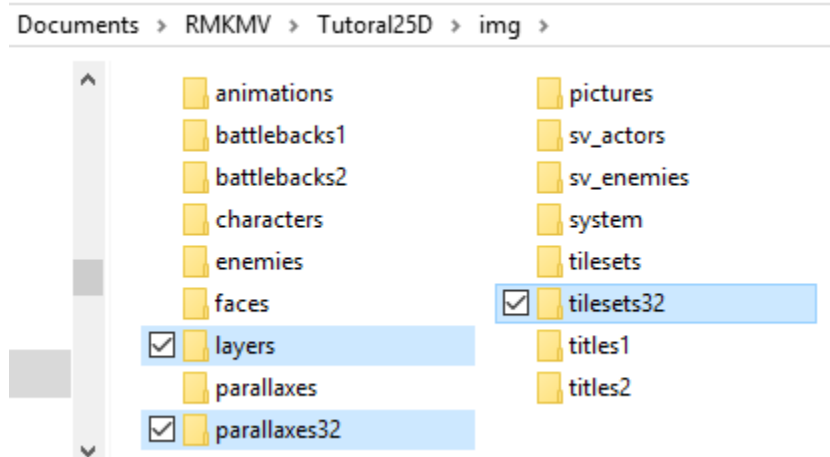
## GALV\_LayerGraphics

Parameters	
Name	Value
Tile Size	32

## Yanfly\_RegionRestrictions

Parameters	
Name	Value
Player Restrict	254
Event Restrict	253
All Restrict	255
Player Allow	0
Event Allow	0
All Allow	0

You will have to create two new folders in your project in the \img\ folder to match the folder settings in ChangeTileSize. With this addon, the files in Parallaxes and Tilesets will be used by the MV Editor, the ones placed in Tilesets32 and Parallaxes32 will be used when the game is run. A new Layers folder is also required for the LayerGraphics Addon.





#### Additional Recommended Addons

GALV\_CharacterAnimations <https://galvs-scripts.com/category/rmmv-plugins/mv-audiovisual-effects/#post-1432>

GALV\_DiagonalMovement <https://galvs-scripts.com/category/rmmv-plugins/mv-on-map/#post-1534>

GALV\_CharacterFrames <https://galvs-scripts.com/category/rmmv-plugins/mv-audiovisual-effects/#post-1537>

#### GALV\_CharacterAnimations

##### Parameters

Name	Value
Use Jump Graphic	true
Common Event ID	0
Common Event Time	0
Repeat Common Event	0

#### GALV\_DiagonalMovement

##### Parameters

Name	Value
Diagonal Mouse	true
Diagonal Charset	true
Diagonal Speed	90
Block Diagonal	true

#### GALV\_CharacterFrames

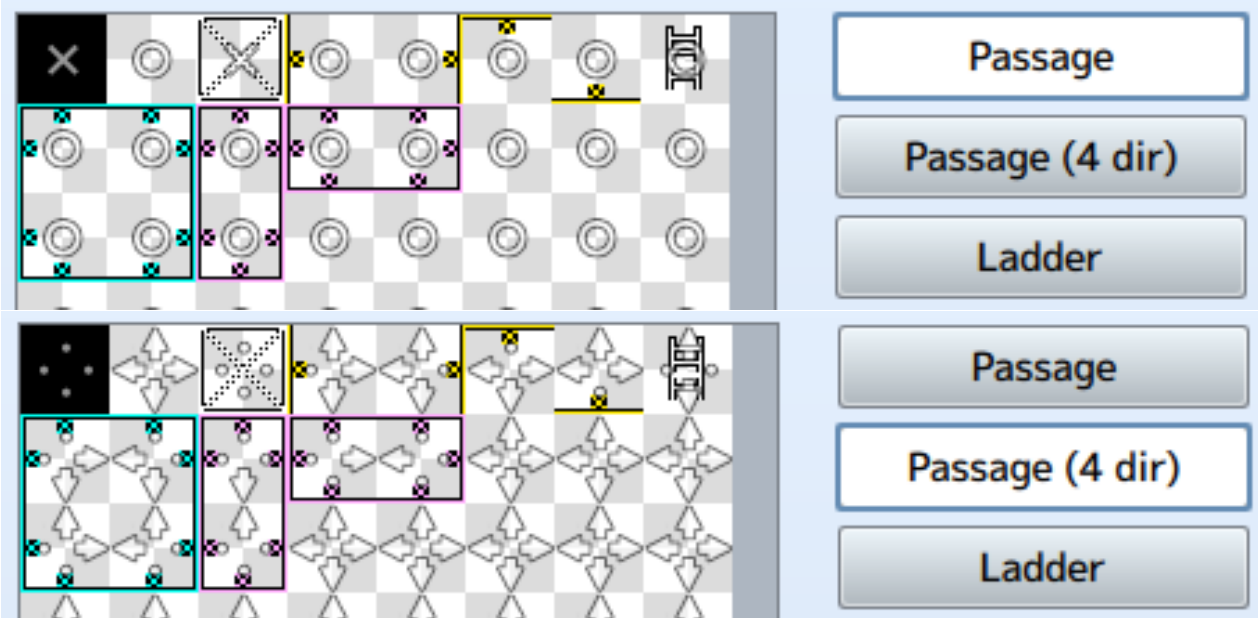
##### Parameters

Name	Value
Frame Speed Modifier	$f * 0.8$

#### Parallax Tileset

I also recommend downloading my Parallax A5 Tileset and setting it up in the database. This will help handle passability beyond what can be accomplished with Yanfly's Region Restrictions.

<https://forums.rpgmakerweb.com/index.php?threads/screenshot-thread-pvgames.70335/page-8#post-969809>



# Creating The Map

The entire map can be taken as is for the base Parallax map in the MV Editor. However the map is built on a 32x32 grid and MV uses a 48x48 grid, so an upscaled version has to be created.

My total map size ended up being 992 x 1024 pixels  
= 31 x 32 tiles on a 32x32 grid  
= 1488 x 1536 pixels on a 48x48 grid

To use the ChangeTileSize script, I have to export two copies of the full map.

Copy 1: 32x32 Grid - Exported to the \img\parallaxes32 folder

Copy 2: 48x48 Grid – Scale the map image up to 1488x1536 then export to the \img\parallaxes\ folder.

Make sure the Parallax filename starts with ! so it will attach to the map grid.

Don't worry that the upscaled image is blurry, it is only used in the editor. The game will use the images from the xxx32 folders.

Create the new Map to be used, matching the 31x32 map size. Set it to use the image from the Parallax folder. The Parallax Tileset is used for the map to control passability. Also make sure "Show in the Editor" is checked.

**General Settings**

Name:

MAP002

Display Name:

Tileset:

0001 Parallax

Width:

31

Height:

32

Scroll Type:

No Loop

Enc. Steps:

30

☐ Autoplay BGM

...

☐ Autoplay BGS

...

☐ Specify Battleback

...

☐ Disable Dashing

**Parallax Background**

Image:

TestMap

...

☐ Loop Horizontally

Scroll:

☐ Loop Vertically

Scroll:

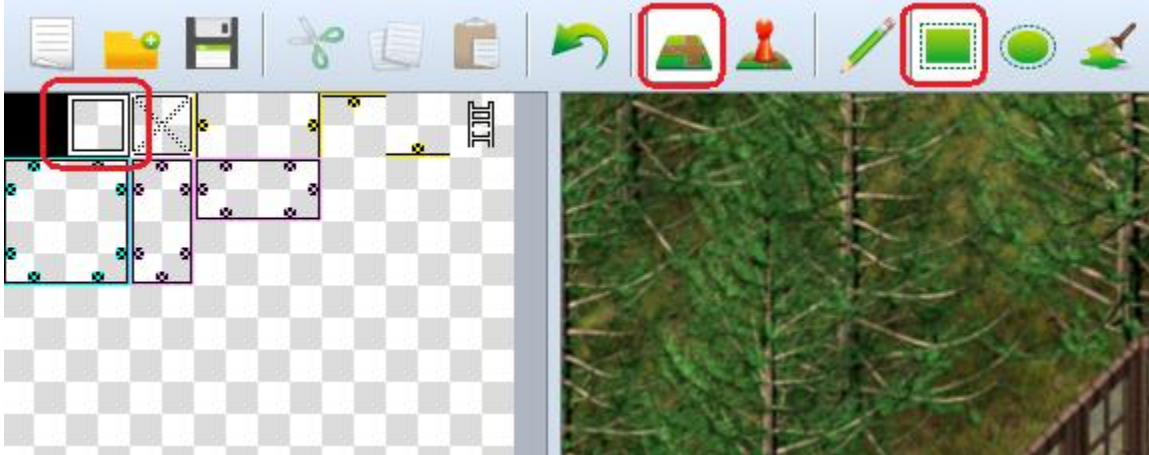
☒ Show in the Editor

**Note**



Use the Map and Rectangle tool to draw a passable tile across the entire map. If you don't do this, your character will not be able to move on the map.

(I usually cover the map with the Back Tile, then uncover it with the passable tile to ensure I cover the whole map)



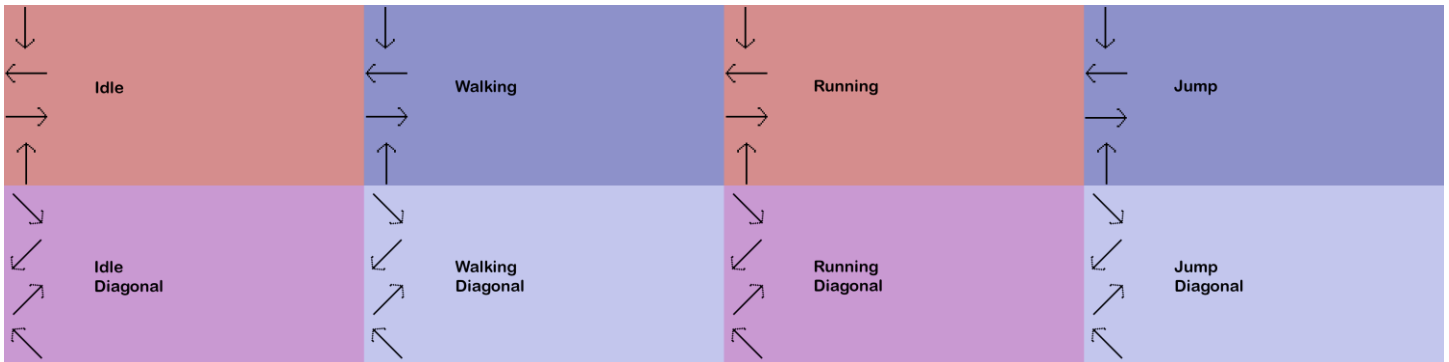
Next switch to the Regions and fill in any unpassable areas with the region you set in the Yanfly Region Restrictions addon (255 in my example).



I didn't need any for this map, but you can also use the 4-direction passability tiles to restrict movement.

You can see this in a map from another project where they are used to keep the player from walking over the edge of the pit except at its sloped entrance.

Before going any further, take some time out from mapping now, to set up a character sheet for a test character. If you used the recommended plugins from GALV, a character sheet will be a 5120 x 1280 image, with the grid set to 160 x 160. Note: the Jump animation only uses the first 3 frames, the other 5 are not used. For Idle, you will have to repeat the 3 frames provided in the PV Games resources to fill out all 8 positions.



Once your character sheet is created and attached to a character in the game, set the starting position in an open space on the new map.

Run the game to try walking around and make sure everything is working correctly before making it more complicated. At this point, it doesn't matter if the character is walking on top of front walls.



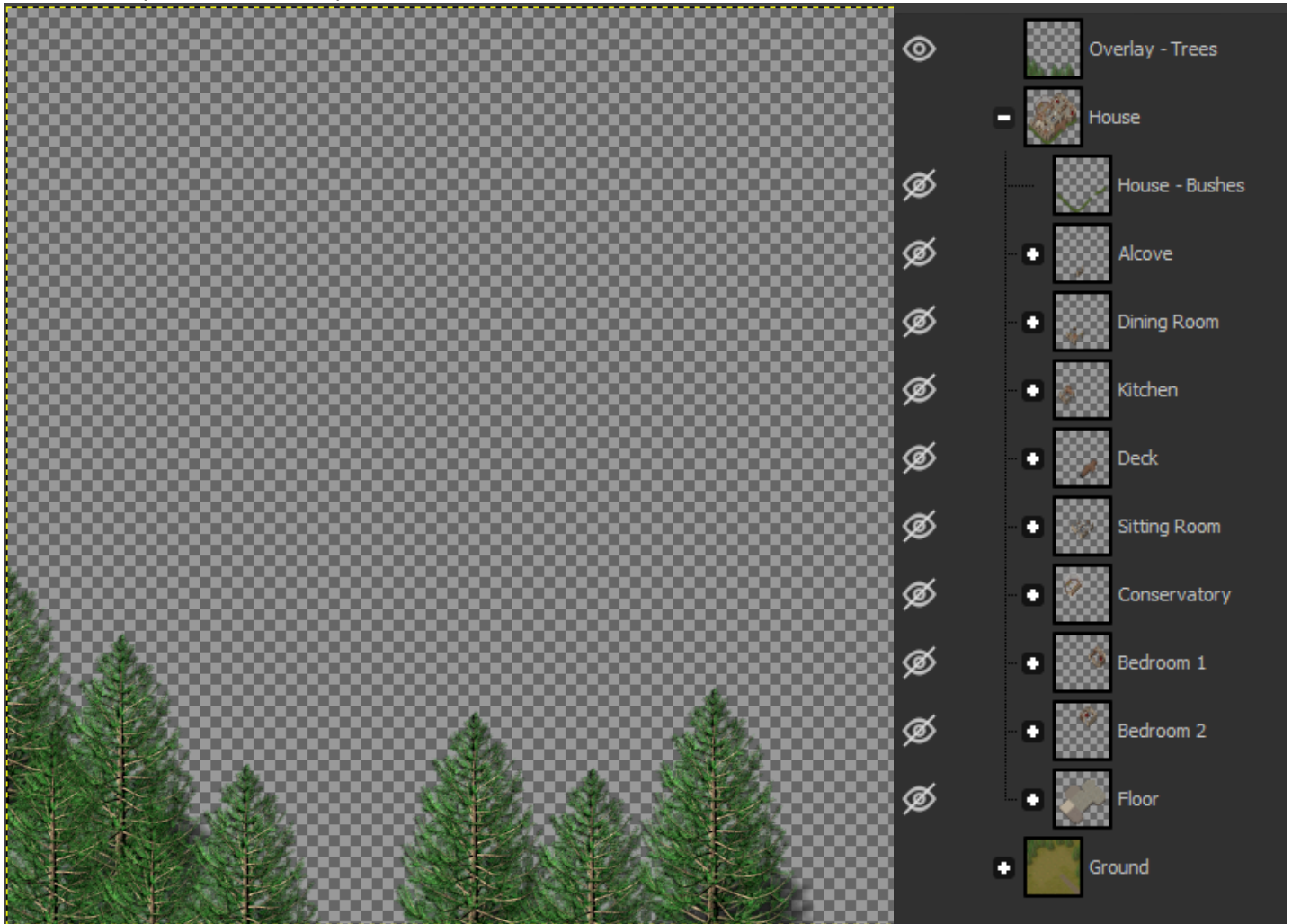
I'm more concerned right now with how close he will stand to objects he is in front of, then deciding if this is acceptable, or if I have to restrict walking areas more, or if I have to adjust the map design to give him more room.





After any adjustments are made in the GIMP file for the map, it's time to start building layers. I recommend creating a new GIMP file at this point with the same dimensions as your original map. The new file will have a layer for every layer that will be exported out for use in RPG Maker. But it's main purpose is to give us a place to cut up the views without accidentally damaging the layers used to build the original map.

Starting with the simplest one, the Overlay that will always be displayed on top of everything else. I hide all layers (by group when possible) then do a "Copy Visible" from the menu to pick up what is left, then paste that into a new layer in the new map file.

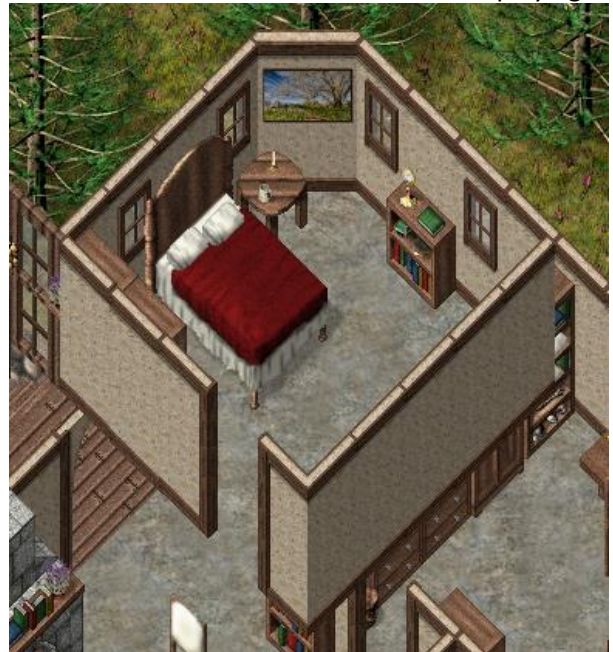


Then for the rooms, I will start working my way from Back to Front again, creating an overlay layer for each individual room.

I start off by hiding layer groups, leaving only the groups that have something that overlaps the “Front Wall” layer of the room I am working in.



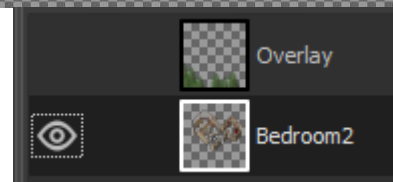
You need to keep those extra layers or else the blank front wall would overlay on top of the decorations from the other rooms when playing.



Next I hide all layers with the back wall of the room and the furniture that I want the character to be able to walk in front of.

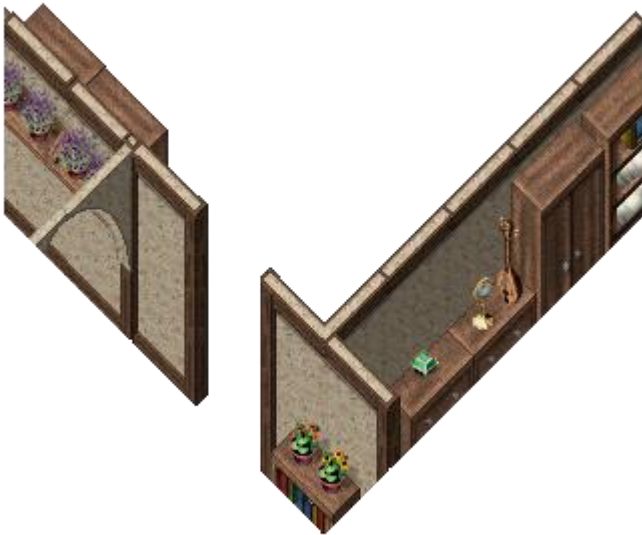


Once again, I do a “Copy Visible” then paste the results into a new layer in the new map file.





Then I crop down the layer to just the size of the Front Wall. This is the final layer that will be placed above the character while in the back Bedroom.



At this point, it's worth noting that you must also think about where events with graphics will be placed in your game. Because the layers will be moving up above the player, they will also be moved above events that might be in other rooms.

If you allow an NPC to stray too close to the front bedroom's wall while the player is in the back bedroom, then their upper half would be cut off.

Unfortunately, this also prevents using some cool tricks like having the armoire in the front bedroom show up as open after it has been pillaged when the character is in the back bedroom.

- Technically, you could handle this, but it would require more layers and deciding which one to display depending on if the armoire has been opened or not.

In the same way, when the player is in the front bedroom, it's back wall will be on a lower layer so the player can walk behind it. So an NPC or other event in the back bedroom that is too close to the wall would also be on top of it.

If you do want to have wandering NPC's, you can use the Event Restrict region from Yanfly's Region Restrictions to keep the NPC's from getting too close to the walls.

After the first room is done, continue creating a new layer for each room of the house, always being careful to include everything that will be above the front wall.



In the case of the Front Bedroom, I almost forgot to include the bushes layer where a few leaves overlap the wall. It is a very small area, but when playing, it becomes very noticeable when they flicker on and off when you enter or leave the room.

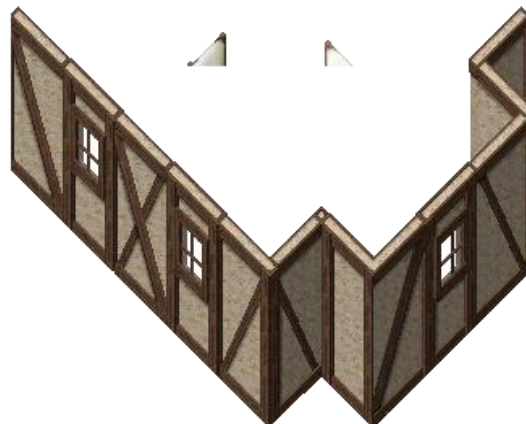
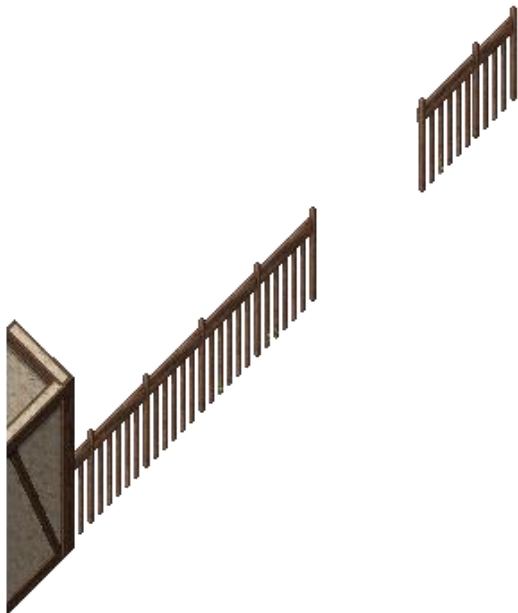




Note that in the sitting room, I also left the top half of one of the chairs in the layer. If I placed everything correctly, the player should be able to walk behind this piece of chair, but will not be able to move into a position where it will be above them at the wrong time while moving around.

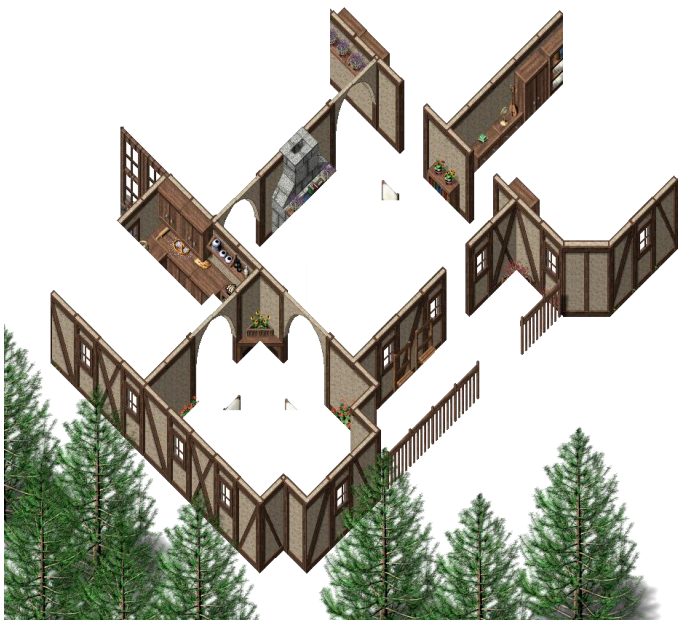


In this layer for the deck, I was careful to cut out anything not directly overlapping the railing posts, including the shadows. Otherwise, when the semi-transparent bush parts or the shadows overlay their counterparts on the base map, they will get darker while the layer is showing, which is a distracting glitch.





New Layer Map file with all layers displayed.



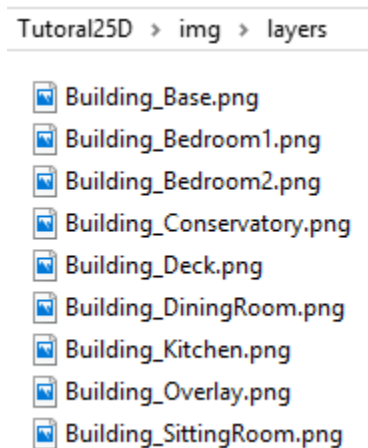
Finally, create a layer for the Base Map with everything displayed Except the things that will be displayed in the upper layer that is always on (in this case, the foreground trees).

In GIMP, display all layers, then start showing/hiding different layers, looking for anything that flickers, indicating an error in the layer build, or any transparency side-effects.



It's hard to see in these pics, but on-screen, it when I add the upper layer of the Conservatory layer, the transparent windows on top of the background transparent window effect makes a noticeable flicker. Since I want the character to walk behind windows and still be faded by the glass, I have to go back to the main map file and remove the glass from every window that will be a part of the overlay layers so the glass effect doesn't duplicate.

Once all layers are completed, they can each be exported to their own file in the project's Layers folder. I always prefix all files for a particular map with the same name to keep them easier to manage.



## Eventing The Layers in MV

Create a new Common Event in the database to manage the layers with the GALV\_LayerGraphics plugin. The Plugin Command for a static layer that sticks to the map when the player moves is

LAYER\_S Map Picture ImageFile X Y Opacity Level Method

Map = The Map the layer will be displayed on (the 00 part of map 002 is needed)

Picture = picture number from the show picture event (1 to 99)

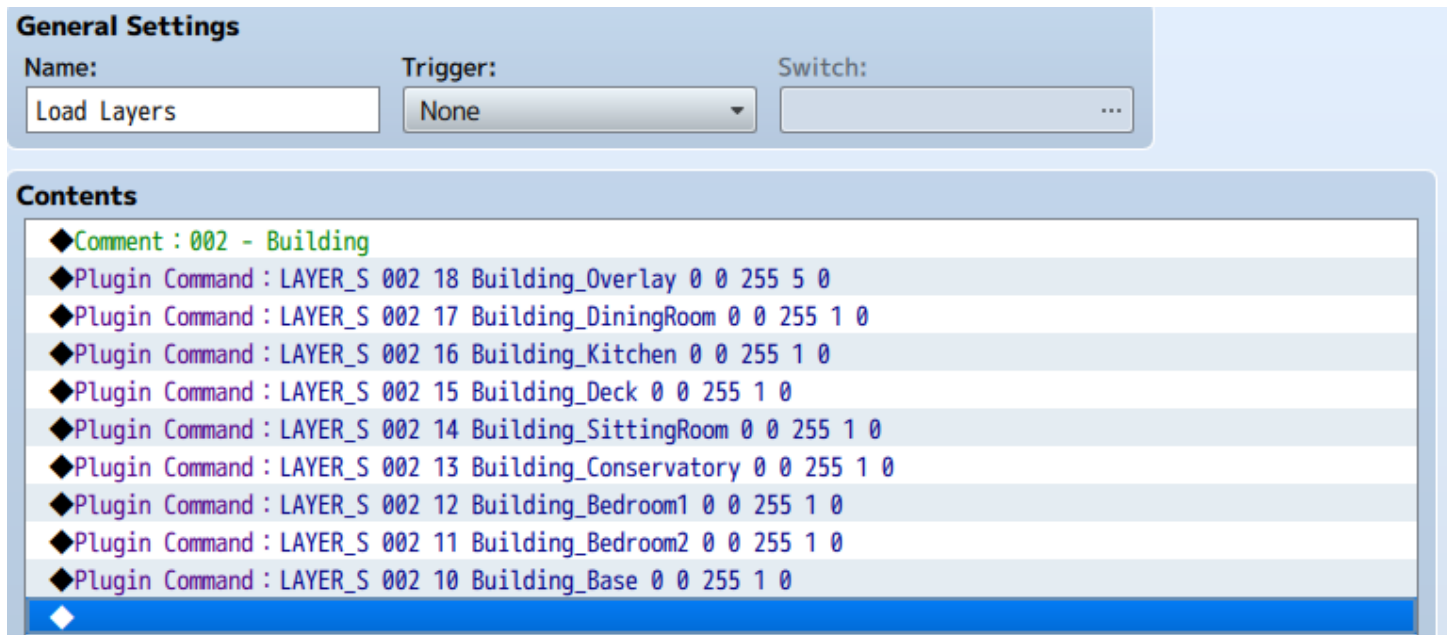
ImageFile = the name of the image file used ( without the .png )

X & Y: coordinates for the picture, will be 0 0 for parallax layering

Opacity = 0 – transparent, 255 – solid anywhere in-between for partially transparent

Level: 0 = Parallax Layer, 1 = Below Character 5 = Highest Layer

2,3,4 – Not sure, I haven't used these



You can load all of your layers for all maps here, so I separate my commands for each map with comments. I also normally create a separate common event for each chapter, then use the "Load Layers" event to call each chapter's common event.



Move the character's start position to map 001 that was created with the project.

I recommend filling this map with the black tile from the Parallax Tileset, and also setting the "Start Transparent" setting on the System tab of the Database.

This just keeps anything "strange" from showing while the initial setup is running.

Add an AutoRun Event to this map as well with the following settings:

Fade-Out Screen - is just to have it faded out when doing the transfer to the map – if you move to a map without fading, you will see the layers being loaded after the transfer, so I recommend always fading between transfers.

Call the common event that loads the layers

Transfer the player to the map (no fade setting since the map is already faded)

Use the Move Route to make the character visible

Fade in the screen

Set a self switch on the event so it doesn't repeat

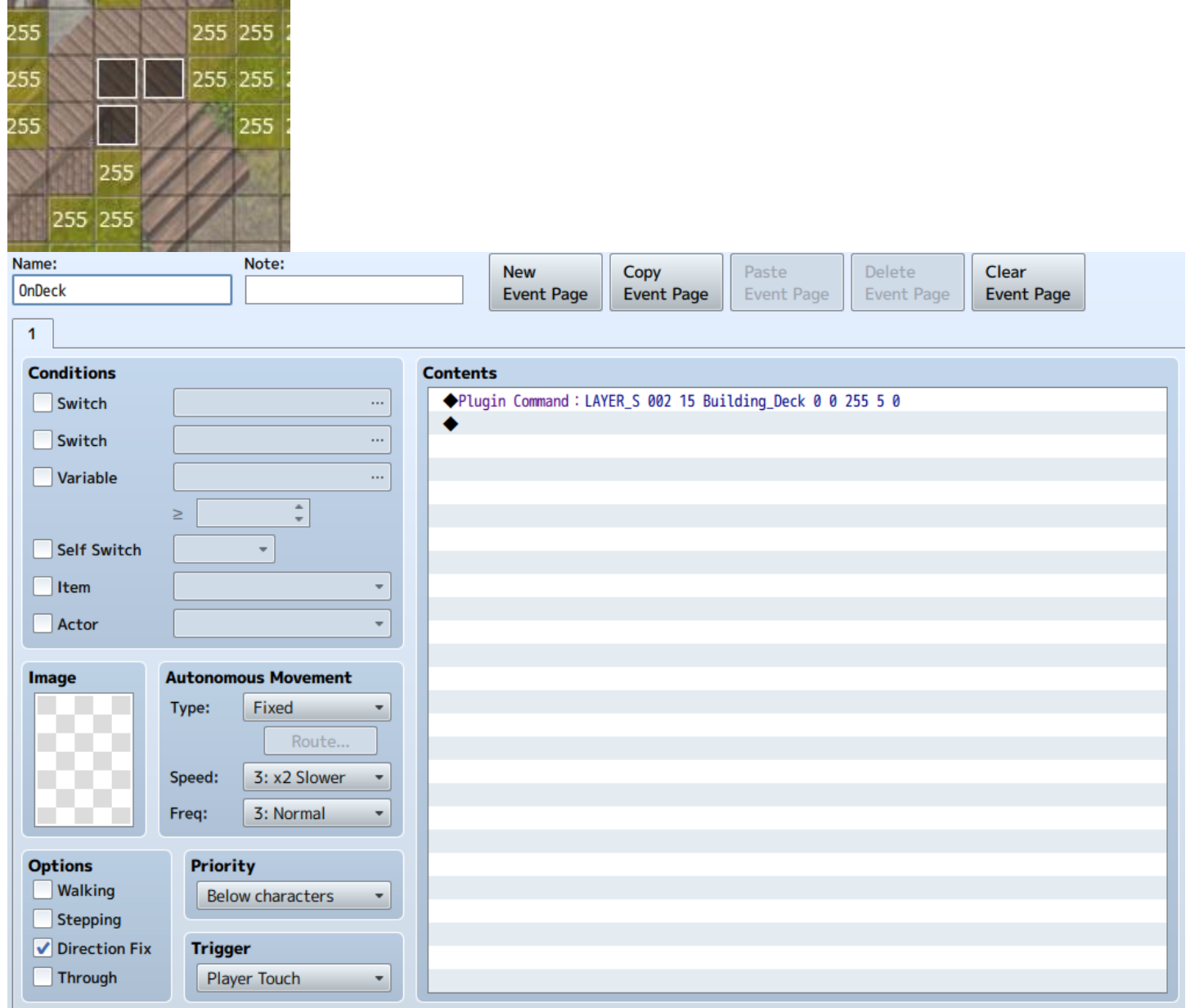
The screenshot displays the RPG Maker event editor interface. At the top, there are fields for 'Name:' (containing 'Start Game') and 'Note:', along with buttons for 'New Event Page', 'Copy Event Page', 'Paste Event Page', 'Delete Event Page', and 'Clear Event Page'. Below these are tabs for '1' and '2'. The main area is divided into several sections: 'Conditions' with checkboxes for 'Switch', 'Switch', 'Variable', 'Self Switch', 'Item', and 'Actor'; 'Image' with a checkerboard tile preview; 'Autonomous Movement' with settings for 'Type' (Fixed), 'Speed' (3: x2 Slower), and 'Freq' (3: Normal); 'Options' with checkboxes for 'Walking', 'Stepping', 'Direction Fix', and 'Through'; 'Priority' set to 'Below characters'; and 'Trigger' set to 'Aautorun'. The 'Contents' panel on the right lists the following events: '◆ Fadeout Screen', '◆ Common Event : Load Layers', '◆ Transfer Player : MAP002 (29,29) (Direction: Up, Fade: None)', '◆ Set Movement Route : Player (Wait)', ': ◇Transparent OFF', '◆ Fadein Screen', and '◆ Control Self Switch : A = ON'. The event list is followed by several empty rows for additional events.

Run the game at this point to make sure all of the layers load – you will get debug errors if any of your layer filenames are mis-typed.

Initially, all layers except the “Overlay” layer that will always be above the character were set at Level 1 to be below the character. The “Overlay” layer is set at level 5 to be above everything else.

Now to add in the key to making this work. As the player enters a room, they will have to trigger an on-touch event to change the layer of the room they just entered to be above them, while changing the layer of the room they just left to be below them.

Starting with the Deck as the player moves up the stairs:



Next – events for moving off the deck are added to push the Deck Layer back under the character.



Name:

OffDeck

Note:

New Event Page

Copy Event Page

Paste Event Page

Delete Event Page

Clear Event Page

1

Conditions

☐ Switch

...

☐ Switch

...

☐ Variable

...

☐ Self Switch

≥

▼

☐ Item

▼

☐ Actor

▼

Image

Options

☐ Walking

☐ Stepping

☒ Direction Fix

☐ Through

Autonomous Movement

Type:

Fixed

▼

Route...

Speed:

3: x2 Slower

▼

Freq:

3: Normal

▼

Priority

Below characters

▼

Trigger

Player Touch

▼

Contents

◆Plugin Command : LAYER\_S 002 15 Building\_Deck 0 0 255 1 0

◆

Once you start moving between rooms, you will be switching two layers, one up, one down.



Contents

◆Plugin Command : LAYER\_S 002 14 Building\_SittingRoom 0 0 255 5 0

◆Plugin Command : LAYER\_S 002 15 Building\_Deck 0 0 255 1 0

◆



Contents

◆Plugin Command : LAYER\_S 002 14 Building\_SittingRoom 0 0 255 1 0

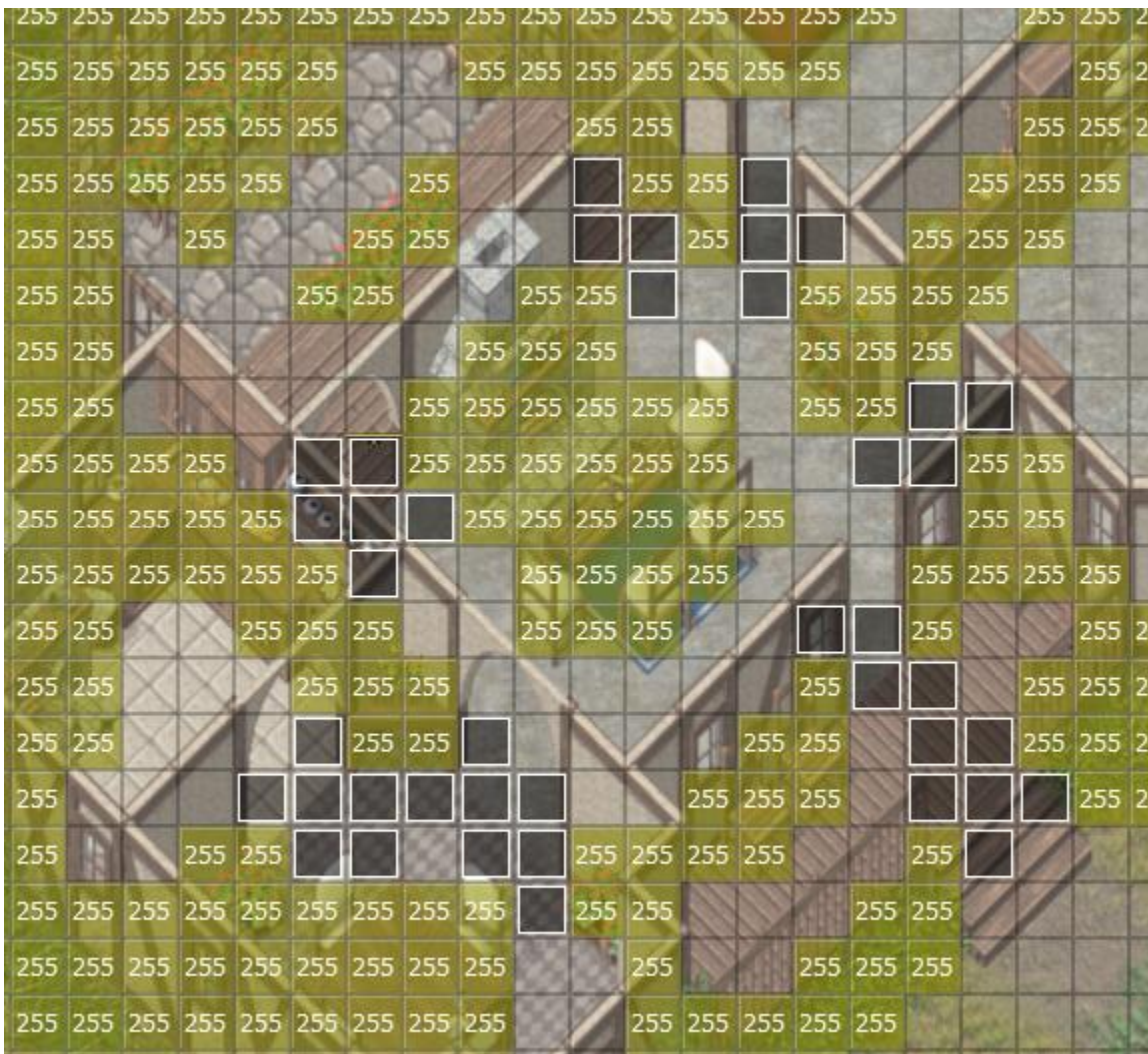
◆Plugin Command : LAYER\_S 002 15 Building\_Deck 0 0 255 5 0

◆



Then continue adding events to each doorway to switch the appropriate layers for each room.

It will probably take several playtests to figure out where to place each layer swap event so they will active in a way that shows or hides the player at the right time.



In the end, this map ends up being a little too tight. Even though it goes against normal RPG Mapping Recommendations, using this Tileset benefits from having more open space in rooms to allow movement to flow more naturally.

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At this point, you have a map will fully functional layer swapping.

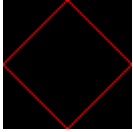
If you wanted to expand it, you could follow the same process for adding a roof layer that could be displayed when leaving the house, then removed when entering it.

You could also add cloud or fog overlays above the map, or lighting to the individual rooms.

## Additional GIMP Mapping Tips

### From PsychicToaster:

Use a Floor Tile to create a diamond grid.



This can then be used as a base layer while designing to see the diagonal grid that the tiles are matched on.



### From Jesse @PV Games

Create animated water by placing two water layers moving in different directions on Level 0, one one semi-transparent. Make sure to leave the water areas blank in your Base Map used on Level so the water will show up below it.

```
◆Plugin Command : LAYER_S 011 10 Ch1_VillageGraveyard_Base 0 0 255 1 0
```

```
◆Plugin Command : LAYER 011 9 Water -.25 .25 100 0 0 0 0
```

```
◆Plugin Command : LAYER 011 8 Water .25 0 255 0 0 0 0
```

### Expanded By Zyphli

An additional trick I have used is to make both semi-transparent, then you can place a “Below Water” image on the Parallax layer to see what is in the water.

They are very faint, but you can see the hint of the crab trap below the water.



```
◆Plugin Command : LAYER_S 011 10 Ch1_VillageGraveyard_Base 0 0 255 1 0
```

```
◆Plugin Command : LAYER 011 9 Water -.25 .25 80 0 0 0 0
```

```
◆Plugin Command : LAYER 011 8 Water .25 0 80 0 0 0 0
```