Mapping Cities with Campaign Cartographer 3 Plus

By Jay Johnson

Introduction

Before we get started with our conversation about mapping cities with Campaign Cartographer 3 Plus (CC3+), I should probably introduce myself. My name is Jay Johnson and I go by Texas Jake on both the ProFantasy Forum and the Cartographers Guild Forum. I have always loved maps and history and I am a bit of a perfectionist by nature. You can see examples of my maps on the ProFantasy Forum. My map of the border outpost of Tarkas was one of the ProFantasy Blog's Maps of the Month for October 2018. You can also view the current map I am working on of the City of Melekhir. It is a map of a city that covers over one square mile of land area (that's massive, what was I thinking when I started such a ginormous project!).

When I purchased CC3+ (to make a map for a series of books I am writing) and started down the road of mapping, I had no idea all I would discover—about the use of CC3+, about medieval cities and about the art of mapmaking. CC3+ opened up a whole new world of mapmaking to me. I started by doing some overland mapping (and was astonished by the quality of maps I could produce while still learning the basics of the program), but it wasn't long before I ventured into the realm of city mapping. Mapping cities can be challenging, fun, sometimes frustrating, but in the end quite rewarding. I would like to take this opportunity to share some of what I have learned along the way.

First, let me define what kind of cities we are talking about. The type of cities we will be discussing are fantasy cities based on those from medieval Europe. The kind that can be found in many of the fantasy stories we have read or viewed. The purpose of our conversation is to learn not only the use of CC3+ to make maps of cities, but also to learn about the art of making city maps.

It could be argued that the art of mapmaking is more important to making good maps than the tools you use to accomplish it. I believe there is some truth to this argument. I would go on to say that a good mapmaker can make a good map whether he or she uses pen and paper, Photoshop, or CC3+. The more we understand about making a readable and believable map, the better map we will make regardless of the tools or medium we choose. Our objective is to make a map that effectively communicates to the viewer the information we desire to convey. If we fail to do this, everything else we do is pointless. We also want to make a believable map. To do this, we need to avoid pitfalls like using magic as an excuse to justify something that would be implausible in the real world. If we do deviate from the norm, there should be a good reason for doing so. We can make exceptions to reality, but they should be made for a reason, not as an excuse. Understand that the more exceptions we make, the less believable our map becomes.

As we make this journey together, I am going to assume a few things, one of them is that you have the City Designer 3 (CD3) add-on. We will be making use of tools and elements from CD3 and since I bought the Top Three bundle when I got CC3+ (which includes CD3 and Dungeon Designer 3), I am less conscious of what tool came with which product.

Let's Get Started

Where to start? Now that is the question. Let's start by determining what kind of city we want to map. You must think about the size of the city you plan to map and determine the size canvas you will need to map it on. If you are just starting on your journey as a mapmaker, this can be a hard question to answer accurately. I know that I have had to restart maps several times because I answered this question incorrectly. The problem of fantasy mapping is that we define what we are mapping and we create the data. If our conception of what we want is not entirely clear, we open the door for inaccurate conclusions to enter. So, take a little time and think about how big your city is going to be and then you may want to allow yourself just a bit more space than that. It is good to allow extra space so that the shape of your city is defined by design and not by the constraints of your canvas. How many times do fantasy cities end up square or rectangular because that is the boundaries of the canvas. Our cities should be defined by their terrain, not by our canvas. Do your research. Know as much as you reasonably can about your city before you start to draw it out. Understand, of course, you will learn more as you put it down on (digital) paper. Sometimes the discovery may amaze and surprise you.

*A resource that may help you is this **site** which has many historic city maps.*

If you are new to CC3+, get to know the software. You need to gain a bit of skill with your tools. One of the first things I did when I was new to CC3+ was watch the excellent videos by Joe Sweeney to get a handle on the software. You can find his videos here. After watching some of his videos I would do some mapping with CC3+. When I had a question or encountered a problem I would go back for more or break out the manual. One of the best ways to learn is by doing (at least for me it is). Make a few practice maps to develop some familiarity with the product. I have heard complaints that CC3+ is hard to learn. There is a bit of a learning curve to it, but there is with any product. I promise you if you put in the effort to learn to use the software you will be rewarded—and you will get past the steep end of the learning curve faster than you may think if you are diligent.

Another tremendous resource is the Tome of Ultimate Mapping by Remy Monsen. It is available from ProFantasy and is a wealth of knowledge. It also includes an excellent tutorial on mapping cities to help you learn the basics.

Your city should have a reason for being. What resources are available: minerals, lumber, stone, etc.? There must be sources of food and water (unless, of course, your inhabitants are stone statues that do not eat or drink, but I think they are probably not). What about trade routes? Think about these things and their locations in relation to your city and what impact they have on it.

After you have determined the size of your city and have achieved some degree of proficiency in the use of CC3+, you need to determine what CC3+ style you want to use for your city. Understand you can

borrow elements from other styles to supplement your choice. You can even create your own style if you care to. If you are unfamiliar with CC3+ city styles I would recommend making a small sample map with the styles you are considering to see which one will best suit your needs.

Time to Make a Map

Okay, now let's get into my process for mapping cities (finally, you say). The first thing I do is define the terrain. If you're mapping a city that is on an overland map, you can look to that map for information. Locate the hills, the mountains, and very importantly, the rivers. After you define the terrain, determine the location of the city on the terrain.

The next thing I do is lay out the major roads. The roads that connect the cities to the rest of the world and resources and the roads that are the major arteries inside your city. This will give you a skeleton, so to speak, to work off of and flesh out. At this stage I determine where the main marketplace will be. If there is a castle or palace, this would be a good time to locate it. It will influence your roads and was probably there before, or near to the beginning of, the city. During this stage it is also good to consider what important structures, locations and features you want to include in your city—maybe an important temple, or a large arena where chariots race or gladiators fight. Now would be a good time to place them on the map. That way you make sure there is a place for them, and major sites like these will have a great influence on your road network.

An early version of Melekhir with rivers, market square and major roads.

When you place buildings, you can put roads down first then add the buildings or you can add the buildings then place the roads. I have done it both ways and either will work. It is a matter of preference and, at different points in your mapping, one way may prove better for you than the other.

Talking about buildings. If you look at historic maps and at old sections of cities that have survived from the medieval period, buildings tend to be built right up against each other. They are also right on the street, not set back as is common in the residential neighborhoods many of us are familiar with. This will be the preferred situation in our map. Because of this, the random street tool (which is great for laying down houses fast) will not be our preferred method of adding buildings. I also don't use the premade buildings very often in my maps. I prefer to make my own using the House Builder Tool (which we will henceforth refer to as the HBT). This allows us to have much greater flexibility concerning the design of the buildings we are placing on our map.

When I was early in the process of mapping out Melekhir, I struggled to come up with convincing-looking buildings and building clusters. After several attempts (which I quickly deleted) I stumbled on an ingenious idea (okay, maybe ingenious is a bit much). I decided to bring up the city of Rothenburg od der

Tauber in Google Earth and copy some buildings. Why Rothenburg? Because I had visited the city a few times when I was living in Germany and I knew it was an authentic walled city that had maintained its medieval charm. I replicated a few buildings—they weren't exact copies—but I liked the results. I copied a block of buildings and I really liked the results. Hey, this felt authentic (of course it felt authentic because it was authentic). I copied several more sections of the old city. And you know what? After this exercise in replication, I was able to create buildings and clusters of my own that felt authentic. I had acquired a feel for it.

Here is an image of Rothenburg od der Tauber.

Here is an image of part of Melekhir's Old Port District. Can you identify the areas I replicated?

Let's take a step back. Before I made this amazing discovery (okay, maybe amazing is a bit much also), I had used Google Earth to take measurements of streets and buildings and blocks of several historic cities. I recorded my findings and developed some standards to guide me in my mapping.

Did you know Google Earth has a nifty measure tool that will measure distance in meters (and also feet for us backwards Americans).

My measurements told me that main streets were usually between 16-18 meters (52-59 feet) wide, building face to building face. So, to keep it simple, I set my main streets at a width of fifty feet. Side streets were 6-8 meters (20-26 feet) wide, so I set my side streets at 20 or 25 feet wide. Alleys were as narrow as 4 meters (13 feet) so alleys would be approximately 12 feet wide. I also used my building

measurements as a guide to how big buildings should be. Based on the measurement of several marketplaces I determined my main marketplace would be approximately 100 feet by 300 feet.
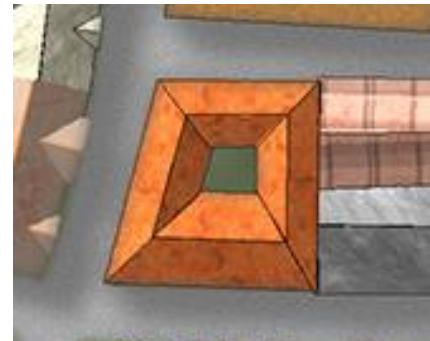
Grids

One of the first things I do when setting up a map in CC3+ is create several square grids on their own sheets, but on a common layer. This way I can turn them on and off individually. For a city map, I create the following grids: 5 feet, 25 feet, 100 feet, 250 feet, and 1000 feet (if the map is very large like Melekhir). I set the transparency of these grids to 50% or less so I can see through them and make sure they are contrasting colors (so I can distinguish between them). If you make sure they are all on the same layer you can turn on and off whatever combination is active via layers. These grids prove very valuable in keeping everything scaled properly. That said, I often map with them off once I get a feel for scale. If you do this, be sure to zoom out every once in a while. If you are working zoomed-in, things can get out of proportion to the rest of the map. I have stayed zoomed-in for extended periods of mapping only to zoom out and realize I have gotten dreadfully out of scale. That said, don't be afraid to redo something that is off. If you fix it early it is usually a fairly simple and relatively painless operation (and you will be able to sleep at night knowing it is fixed).

Building Construction Techniques

I think we are at the point where I should talk about some of my building construction methods. Here are some techniques for making complex structures utilizing the HBT.
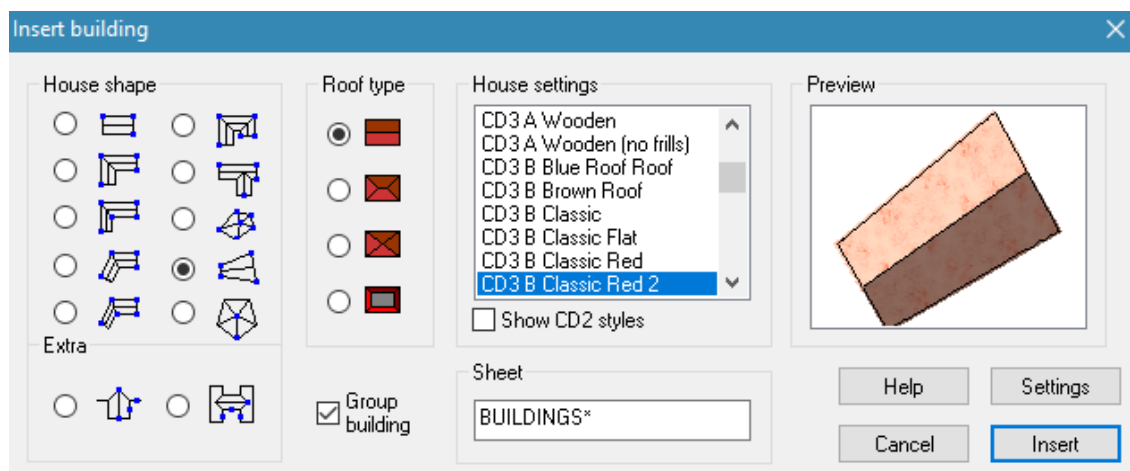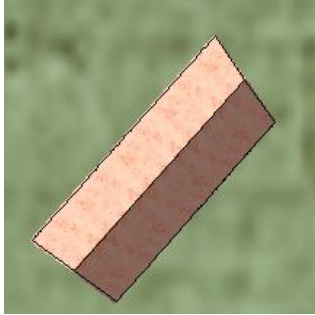
Splicing

The first building we will construct is what I will call the Building with Enclosed Courtyard. The technique I used for this can be used to construct all kinds of variations and is also what I used to construct the city walls around Melekhir. We will refer to this technique as *splicing*.

Building with Enclosed Courtyard

First choose the building style you want in the HBT. Ensure the *House shape* is set to option nine which is the trapezoid shape and the *Roof type* to option one which is gable.
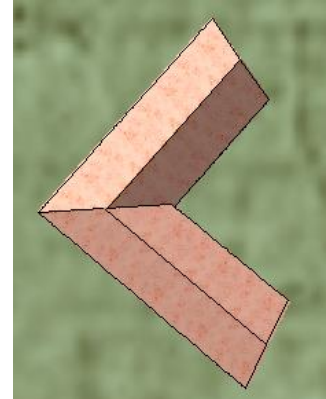
Section 1

Now we will draw the first section of the building. Notice how I tapered the walls in towards what will be the inside edge. I do this so as we splice additional sections to our building the corners of the previous section will not protrude outside the edges of the next section.

Section 2

Time to add the next section. Bring up the HBT (it should have the same settings in it).
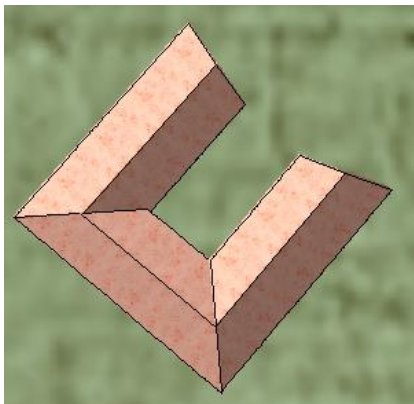1) Click on the outside corner of the first section. This will start section two.
2) Drag the line to your desired length and left click.
3) Make the next side, dragging the line to your desired width. I like to taper back towards the first section some to ensure the inside corner will stay within the boundaries of section three. When you have the proper width and position, left click.
4) It is time for the final side. Drag the line to the inside edge of section one (diagonally opposed to where we started). Ensure the width remains constant over the length of section two and that the cursor is positioned at the inside edge of section one, then left click.

Good, the section is complete. If we did this correctly we should have ridgelines that match up and a valley in the proper place where the sections meet.
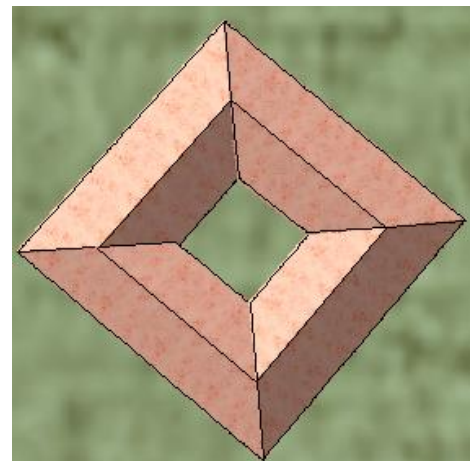
Section 3

Use the same steps as we did for section two to make section three.

Section 4

For the finale, we will make section four. Bring up our friend Mr. HBT and click insert.
1) Left click on the outer edge corner of section three to start section four.
2) Drag the line to the outer corner of section one and left click.
3) Drag the line diagonally across section one to the inside edge. When the width is correct and you are positioned on the inside edge of section one, left click.
4) Drag the line to the inside edge of section three. Ensure the width remains constant over the length of section four and you are positioned on the inside edge of section three, then left click.

Wow! We finished the building. Pat yourself on the back! Using this simple technique, we can create a wide variety of house shapes.

Section 1

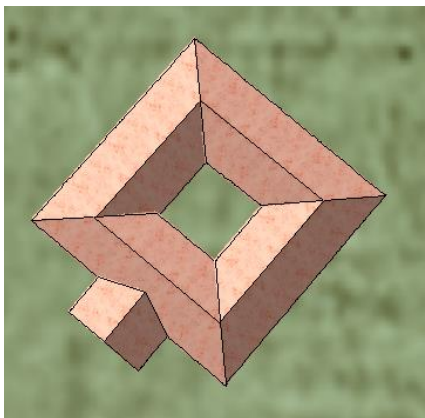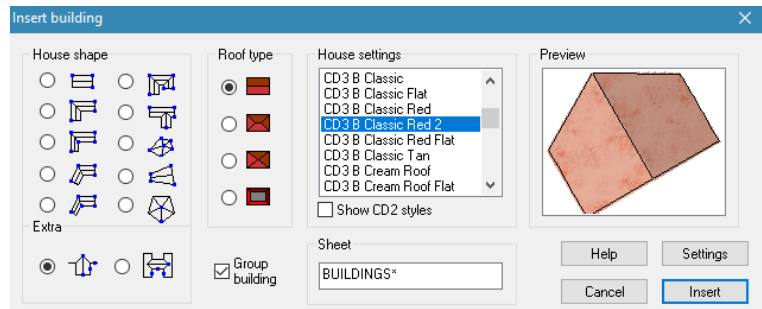*Section 2*

Section 3

Section 4

Here is a shot of the Old Port from my map of Melekhir. You can see the city wall that follows the shoreline then traces the inside edge of the port and separates it from the city. I used the same splicing technique we just learned to make a continuous wall around the city that weaves this way and that. When adding a section, you always want to start on the outside edge of the bend and finish on the inside edge. After you use this technique a few times you will understand why I do it that way.
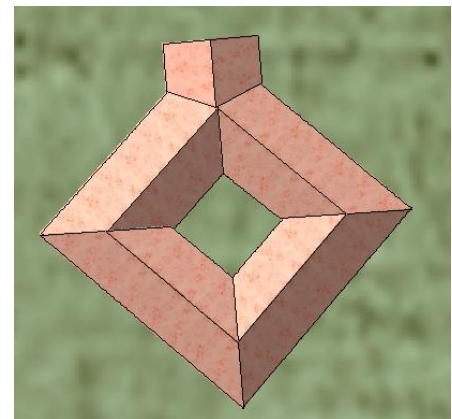
Making a Three-Way Intersection

Next, we will make a section that comes off one of the corners of our structure at a 45-degree angle like I did in the port facility above. Let's open the HBT. We will leave the *Roof type* set at gable and select the first radio button in the *Extra* group.

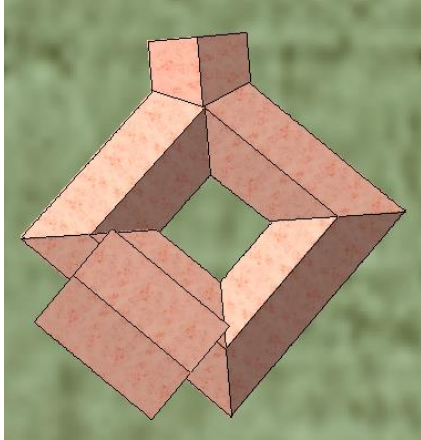Now we will create a gable on one of

the sides of the building we just completed. After we create the gable we will use the *Move, Scale, Rotate* tool to turn and move it to come off one of the corners at a 45-degree angle. After it is positioned we can use the splicing technique to add sections to it if we desire.
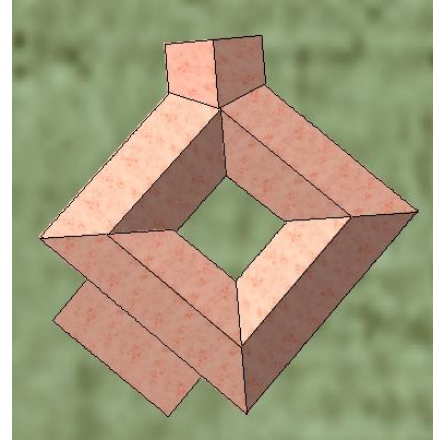

Stacking and Burying

The next techniques we will discuss are *stacking* and *burying*. Stacking is placing something on top of an object, and burying is placing it under an object.
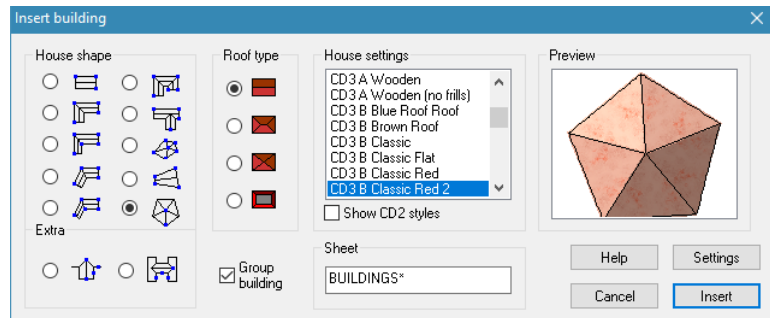
Burying

We will use the burying technique to add a shed roof addition to our structure. To do this we will create a house on top of our structure then send it back. Be sure the ridgeline and half of the building will be completely covered by the structure you are sending it behind. Dra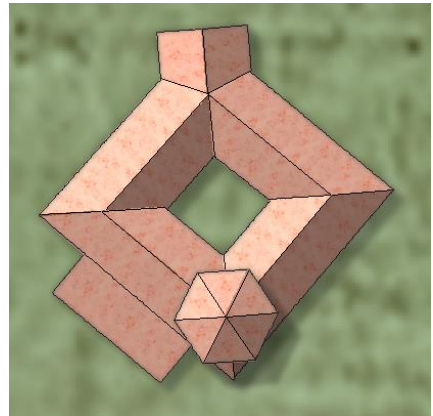w the building using the HBT where we want the shed roof addition. After we complete it, we will use the *Send to Back* tool to place it behind the structure we are adding it to. We could also accomplish this by assigning the shed addition to a sheet that is above the sheet our structure is on in the sheets list (which is below the structure as viewed on the map).

Stacking

Now we will use the stacking technique to add a tower to our structure. Open the HBT and select *House shape* 10 which is the hexagon. I have *Roof type* 1 selected, but the roof type doesn't matter for a hexagon-shaped building. Click on insert and let's place the tower.

1) Position the crosshairs over the desired position for the tower and left click.
2) Drag it to the desired size and orientation then left click.
3) If the tower is not quite where we want, no problem, we can just reposition it (we can also use the *Ctrl* key to resize if we need to when we reposition).
4) Use the *Change Properties* tool to add it to a level above the ground floor building level.

On the subject of sheets…

I use separate sheets with their own effects for each building level. If you haven't already, create a sheet for building level two. Make sure you position this sheet (in the sheet list) below the sheet you use for your ground level buildings so the buildings on this sheet will be above the ground level buildings on the map. Add the effects to the sheet you just created. You can copy them from the default buildings sheet and adjust them as necessary. When you finish, click the *Change Properties* tool and select the tower we just added. Add it to the sheet you just created for second level buildings. You can see how, by using these simple techniques, we can create some rather complex structures.