Micro-scale Castle Building Techniques By Edward Kohl

## What is Micro-scale?

- Micro-Scale or Micro, for short, is most often referred to as a scale where people are the size of a $1 \times 1$ brick in comparison to MiniFigs which are 4 bricks high plus any hat or hair.
- Micro-scale, in general, refers to Lego models that are much smaller then Minifig scale.
- Even if you build in a scale where a figure would be smaller then 1 brick in height it is accepted as being Micro-scale.
- Even if it is a sub Micro scale it is still labeled as Micro.
- In practice, Micro-scale model is any model where a person would be less then two bricks tall.


## When building Micro-scale keep the following in mind:

- The smaller you go the less detail you will be able to build into the model. For example, if you build too small you will not be able to have doors or windows.
- The more detail you have the higher the viewers' interest will be. Some ways to add detail is to fill spaces up with buildings Another way is to change roof colors and roof directions.



## Where to start...

- Pick a building, castle or other item you want to build Micro-scale.
- Try to select something on which you can find information. Things like wall size, photos and floor plans are helpful.
- Source materials might include books, photos, articles and the Internet.

For my "Tower Of London" Micro MOC I had been there up close and personal. So I had my own photos and books I had come home with. But even with that I used the internet to find more data to help me recreate what it may have looked like in 1840.


## Determine the scale which you need to build in.

- What size footprint does your MOC need to be? In other words, does your MOC have a limit like 2 base-plates by 2 base-plates? When I built the Tower of London I wanted it to fill no more then two gray base plates by two gray base plates.
- Perhaps your criteria is Micro-figs of a given size such as 5 plates high with head and hat. I will talk more about Micro-fig sizes later.
- What is the smallest you can build and still keep the detail level you need with the Lego parts you have? Example: If you want to have arches then the smallest Lego arch is a $1 \times 3$ brick.


## Determining Scale con't

Something in your MOC may set the scale you need to use. In my case, to come up with the scale I needed to use for the Tower of London I first built the White Tower, the center piece of the castle.


From this photo you can see the towers are caped with a dome type roof. The smallest dome I could build with is a $2 \times 2$ brick.

If you want to have MicroFigs then their size will set the your scale. Going left to right I have examples of different size Micro-figs.


- First we have a two plate fig. The problem with this one is that it is too wide.
- Next is a three plate fig. This one brick high Micro-fig is most often used as a child in the Micro scale models I have seen.
- A four plate Micro-fig looks more proportional. I used a modified plate so this little guy can hold a weapon.
- Then I added a black round plate as a helmet to the top of a four high fig which gives us the five plate high Mirco-fig.
- Which brings us to the right Mirco-fig. I wanted to make one that could hold a shield. I found that in order for the Micro-fig to fit onto a base plate with the shield I had to add another plate to the bottom so this one ended up being six plates high. In real life there are short people and tall people so you may want to mix the sizes of the Micro-figs.

Across the top are some examples of an army I am building. The one on the white horse is my King.


# Converting life-size feet into Micro-size Lego bricks 

Once you come up with the item that limits your building scale you need to convert it from real life feet to studs / brick height.

The rule to keep in mind is the fact that five Lego plates high is the same distance as a two stud wide brick.

Since that distance is the same I will refer to it as a Unit.

A five plate high UNIT = a two wide brick UNIT.

# Lets say you want to build a Micro version of a building that is 90 feet high but you want the Micro version to be $\mathbf{1 0}$ bricks high. 

With the above information we can deduce that :

- Scale of $\mathbf{9 0}$ feet will be $\mathbf{1 0}$ bricks high.
- 10 bricks high is $\mathbf{3 0}$ plates high. 30 (total plates) divided by 5 (plates per unit) = 6 units
- 90 feet divided by 6 units $=15$ feet per unit.
- Since the 5 plate high unit is equal to 15 feet then the two stud wide unit is also 15 feet.
- Based on a 15 foot unit we see that
 a one stud brick is 7.5 feet wide, one plate is 3 feet high and one brick is 9 feet high.

Here is another example of converting life-size feet into Micro-size Lego bricks.
Lets say we want to use 5 plate high Micro-figs and that they be equal to a real life 6 foot high person.

We can deduce that:

- A UNIT is 6 feet.
- A one stud Brick is 3 feet wide
- One plate is 1.2 feet high
- One brick is 3.6 feet high



# The last part of the planning 

 stage is to have a general layout.- Useful source materials could include maps and floor plans


Draw the castle layout on paper or graph paper to help with planning or, if you have a PC scanner and software, scan in a floor plan I map. With a digital image you should be able to adjust it to fit your scale needs. Also you can use software to over lay a grid onto the image.


For the Tower of London I scanned a map into my PC and then superimposed a grid over the image. Each line was two studs apart.

## Testing the layout for size

This is showing how I laid out a $10 \times 10$ grid with black round bricks. Then I used the printout with its grid to mark where the wall corners are with yellow bricks.
Then using the yellow markers I tried to build the walls to come as close as possible.


Try to align a large wall to match the base plate. The green line on the grid plan shows where a wall matches the studs.

## Lego elements that can be used as Micro

 versions of Minifig scale items- For wheels there are many choices
- 1x1 Round plates
- $1 \times 2$ Hinge Brick Top Plate
- Wheel Trolley
- 1x1 Headlight Brick, Front side can be a round portal or a square window.
- Pine Trees

The small pine tree works well in a Micro setting.

## More Lego Elements

- Cones can be used as bushes or trees.

- 1x2 Grill Brick
for line detail in an item.
- A Minifig's Knife is a Microfig's Sword.
- 4L Bar Lightsaber Blade can be a Pike.


## Other useful Lego elements

- A good supply of plates can give a MOC more strength and more detail.
- Both the hinge brick and hinge plate are useful when building walls that are on angles.

- The center stud plate is of great use in shifting walls a half stud.

- A good supply of tiles is helpful for the finished look and to cover the base plate if the walls are on angles.


## Building Stage, keep the following in mind

Micro-scale buildings looks much better with no exposed studs.
Compare the Battlements on the left with the Battlements on the right.


- Include as may building lines as you can.

Things like doors, windows, wall lines and roof lines.

- Texture can also be used to give the appearance of something different.
- Use a different color or shade of the same color to give the appearance of a door or window.

For example a gray wall with brown bricks for a door.
Recessed section can be a door or windows. To show this I borrowed th next two slides from Janey Cook's micro building tutorial.

## Janey Cook’s Micro Doors



Top left shows black bricks for a door Bottom left and bottom right shows recessing a door.

## Janey Cook’s Micro Window Examples



## Building Towers

Here are examples of different tower sizes with different parts

made with $2 \times 2$ round bricks.

## Building Tips for Angled Walls



If you are working with Angled walls use the hinge brick, shown with the green arrow, to connect the two walls.

This does create gaps in the wall, shown by the Yellow Arrows, but if you place something in front of the gap, like a tower, the gap will blend in and not be noticed.

## For Angled Walls

First cover the baseplate studs with tile except where you need a stud exposed to attach walls to. In the bottom photo I have a $1 \times 2$ white plate with a center stud under the $2 \times 2$ round brick for the center tower. The upper photo shows the wall section that will fit down on top of the center tower base in the bottom photo.


## A Wall too small



The task was to build an angled wall between the two towers at the ends of the yellow line shown here.

Due to the angle a wall with a fixed number of studs was either too big or too small leaving a gap at the tower.

I needed to build a wall that was an odd size - 22.3 bricks long.

## An Odd-Size Wall solution Build two walls.

Wall A will attach to one tower and Wall B will attach to the tower at the far end. Wall B has a large tower on its left end with an extended wall behind it leaving a one brick gap in between the back of the tower and the one-brick wall extension.


Continued on next slide.

The right end of Wall $A$ is only one brick wide so it can slide into the gap behind the tower of Wall $B$. The blue arrow is showing where Wall A slides in.


Continued on next slide.

This photo shows the two walls joined using the slot and tab method. The yellow arrow is showing how the left wall is sitting out less then a brick in spacing. This is how I was able to make a wall that is 22.3 studs wide.


The front side of this wall now looks like a continuous wall with no gap.

I also used the Key Slot technique, shown by the yellow circle, for a section of the south wall.

## Interconnections

Most of the walls interconnect with a least one tower.

In this example tower 1 is the anchor for wall 2.


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Wall 2 is attached to the tower by the end of a $1 \times 8$ plate shown as item 3. Since the plate was at a slight angle I needed to use round plates (\# 4) to cover the other studs. Number 5 shows the bottom of the tower with respect to the wall. Number 6 shows a stud that, due to the wall angle, a plate would not fit on. Looking back at \# 1, when you place the top of the tower on the base the small gap tends to get lost. A fourth wall came up to the tower which covered the gap

## Interconnections and the straight Wall



This slide shows how a tower is attached to a straight wall with the use of a plate in the wall that covers two studs of the tower.

I then placed two round plates on the other two studs. Once the top of the tower is in place the round plates give the effect of having a window in the tower.

## If you can't make Microfigs to the scale of the MOC because they can't be

 made small enough, fill in the MOC with things like trees and buildings. This adds detail to capture the viewer's interest.

## Outside of the Tower of London I added ships to the dock and placed ships under sail in the River Thames next to the castle.



## SNOT in the Micro World

- You can use SNOT (Studs Not On Top) building techniques.
- The five plate high = two bricks wide is a SNOT rule.


## Using SNOT and Offset

Left photo shows a SNOT window (green arrow) removed from the building as shown by the yellow circle. The window is made up of a plate, headlamp brick and a tile giving us a 5 plate unit on its side. The blue arrow is showing a $2 \times 2$ tile with a modified plate attached to it.


The right photo shows the window back in place and the blue arrow is showing where the offset tile section slides in between the two windows.

## Offset Building

This photo shows how one uses a $1 \times 2$ plate (green) with one stud on top. Place the center stud into the center circle of the $2 \times 2$ tile (yellow).


This gives us the offset assembly that was used in the last slide.

Here is another example of creating an offset.
The left part is $5 \times 5$ plates with tiles covering all but the center where a 1 stud plate is used. The center part is a $4 \times 4$ plate which uses the center
ring to fit down onto the one exposed stud on the left part.
The flip side of the center section has a $1 \times 2$ plate with a center stud for the right part to fit down on giving us another offset.


This shows the fully assembled MOC with it's offsets giving us a half brick ledge all the way around.

## You can use round $1 \times 1$ bricks to give a wall arrow slits.



## Recessed Door

Showing dark gray bricks for a door and arrow slits at the sides of the entrance.


## Using Brown Tile Doors

You can use SNOT to hold the doors in place.
Also, the tiles slide up into the arch brick to fit nicely.


## Battlements

## Placing a "half stud" overhang on the

 Battlements will add detail to your MOC.

## Micro Castle Example

In the photos below I show a trophy created by Lenny Hoffman in 2004.
The left photo shows a room that is offset out of the wall. I outlined the parts with small colored lines. The pink lines show the $1 \times 2$ center stud plate that gives you the offset. By using a black plate it gives an impression that there is some type of support under the offset room.
I marked the right photo with two arrows showing pin ports for a CC wall section.
This has me thinking we could create a new standard.
"Classic Castle Micro Wall"



## Drachenburg Castle by Nelson Yrizarry



## Water Wheel in Nelson's Castle Village



Microthedral

## By

Brian Muzas


## Justin Major's Fortress



## Janey Cook's Yellow Castle



## The Wizard's Labyrinth by Anthony Sava

## Tibetan Zen monastery by Phillip Thorne




My last slide, The Towerof London, Thank You

